



## Topic 18: Lomandras and Xanthorrhoeas

### LOMANDRAS & GRASS TREES

(Families – Asparagaceae and Xanthorrhoeaceae)

**Did you know that,**

- *Lomandras* are herbs mostly endemic to Australia. Some leaves are used by Aboriginal people as food and to make baskets. Many native species and cultivars are now used for gardens and street landscapes, providing attractive foliage, erosion protection and habitat for small animals.
- Xanthorrhoeas or Grass Trees are all endemic to Australia, they are very slow growing but very long lived up to 600 years! Some take 10 years to flower. The plant was useful to both Aboriginal people and Europeans.-----

### INTRODUCTION

The genus *Lomandra* was usually placed in the grass tree family Xanthorrhoeaceae (as in some Ref. Books). Latest scientific classification according to the Angiosperm Phylogeny Group **APG III** ( 2009), shows that *Lomandra* is not within the family Xanthorrhoeaceae.

Clade	Angiosperm	Angiosperm
Clade	Monocots	Monocots
Order	Asparagales	Asparagales
<b>Family</b>	<b>Asparagaceae</b>	<b>Xanthorrhoeaceae</b>
Sub-Family	Lomandroideae	Xanthorrhoeoideae
Genus	<b>LOMANDRA</b>	<b>XANTHORRHOEA</b>

### LOMANDRA – MAT RUSHES

*Flora of New South Wales:* in Australia, the genus *Lomandra* has 50 species (48 spp. endemic). NSW has about 31. There are 12 species in the Sydney area bounded by the Hawkesbury, Nepean and Cataract Rivers ( Ref.: L. Robinson). Cultivars not included  
The name ***Lomandra*** is derived from Greek: **loma** = edge and **andros**= male, referring to a circular margin of the anthers in *Lomandra longifolia*, first species described.

#### Description

***Lomandras*** are perennial herbs, rhizomatous, short stem- Leaves linear or terete with parallel veins. Important features for identification : basa leaf sheath margins, the arrangement of the inflorescence, mature undamaged leaf tips and bracts. The plants are dioecious (i.e. male and female flowers on separate plants). The tiny yellow flowers have 6

perianth segments in two whorls. Female perianth usually larger than male. Ovary 3-locular. Fruit loculicidal capsule. When not in flower some species of *Lomandra* are hard to identify.

### Lomandras in the Ku-ring-gai Wildflower Garden

*Lomandra brevis*



***Lomandra brevis* Tufted Mat-rush (Rotap:2RC)**

Dense tussock to 20cm diameter. Leaves channelled to slightly rolled inwards, 5-30cm long, 0.5-1mm wide, apex acute, blackening when dry. Bases purplish above, whitish, lacerated margins. Male inflorescence short branched 10-15cm. female 5cm, unbranched. Flowers yellow well-spaced, blackening when dried. Male flowers globose, 3mm pedicel, female flower larger, more tubular, pedicel 1 mm. Grows in shelter, damp sandy sites.

*Lomandra cylindrica*



***Lomandra cylindrica* Needle Mat-rush**

Sparsely tufted, often with 2-4 terete leaves, 25-35cm long, 1-2mm diameter, apex acute, sheath margins reddish or purplish with some laceration. Male inflorescence unbranched, 1/3 to 1/2 as long as leaves, female shorter. Flowers well-spaced, separate, yellow, not blackening when dried. Male flowers globose, 3mm pedicel, female flower larger, more tubular, pedicel 1 mm.

***Lomandra filiformis ssp filiformis***



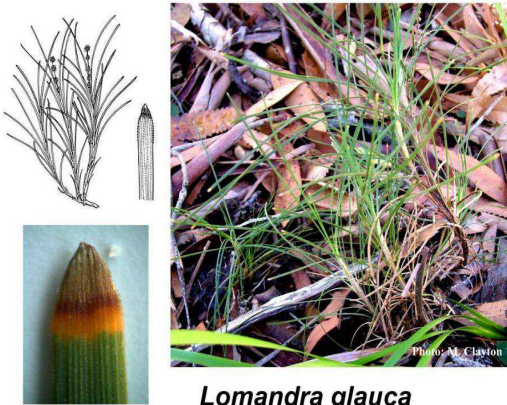
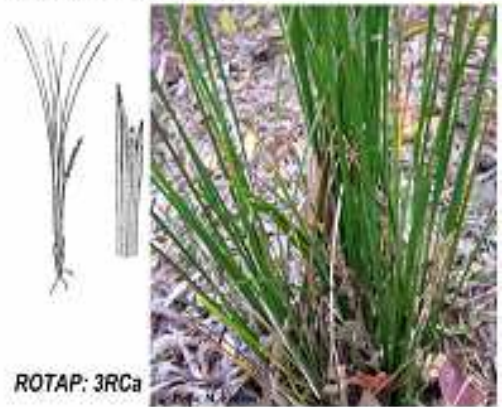
***Lomandra filiformis ssp filiformis***

Leaves are fine, channelled, incurved to much inrolled, rarely flat, flexible 10 to 30cm long, 0.5- 3mm wide. Leaf tip minutely 1-3 pointed. Basal leaf sheath margins lacerated whitish, purplish brown. Flowers are yellow, separate. The male flowers are globose on distinct stalks, the female flowers are longer, more tubular, subsessile. Male inflorescence in racemes or panicles up to 20cm long (sometimes 2 -5cm), but the female inflorescence is shorter. Grows on drier, more open sites. Other Sub spp.: *Coriacea* and *Flavior* are not present in KWFG.

**Lomandra fluviatilis** Rotap: 3Rca.

It is regarded as rare because of its small population and restricted habitat preference for sandy, rocky creek beds. It is a grass-like herb in dense clumps with leaves 25 to 75 cm long, 0.5-3mm wide, slightly inrolled and toothed at the tip. Male inflorescence 1/3 to as long as leaves, branches opposite, female is similar, unbranched. The sessile cylindrical flowers are borne in clusters. Long golden brown cluster bracts. Hybrids with *L. longifolia* are found in Sydney

**Lomandra fluviatilis**



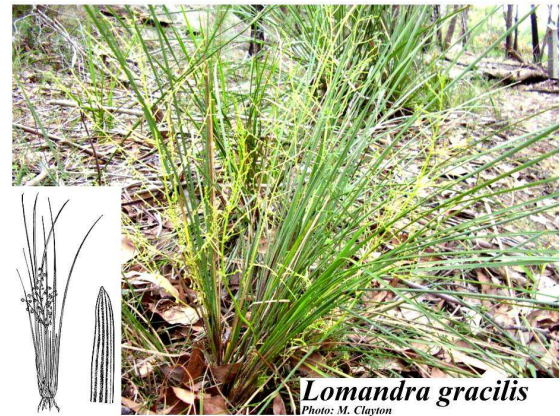
**Lomandra glauca**

**Lomandra glauca**

It has short leaves, up to 20cm long, blue-green, crowded at the apex, shortly acute to rounded tips, sheath margins lattice-like white or pale brown shreds. The flowers are sessile, yellow flushed with purple, female in a solitary globose cluster on a short stalk, male flowers in clusters along a rachis up to 12cm long.

**Lomandra gracilis**

Sparse tussocks with dull green leaves (40-60cm long x 1-2 mm wide) channelled to +/- semi-terete with narrow marginal bands, coarse venation, leaf apex acute. Basal sheath margins lacerated dark purplish brown. Male inflorescence slender panicle as long as leaves, female is smaller. Flowers are separate, well-spaced, the male flowers 2.5- 3mm long on slender stalks, like closed bells, the female flowers are on very short stalks.



**Lomandra longifolia** Spiny-headed Mat-rush.

It is the most common and best known species. It has long shiny leaves up to 1 m long, 5-14mm wide with a toothed tip. Its inflorescence is a panicle of clusters. Long, pungent cluster bracts. The flowers exude a strong scent. It is reported that the flowers and base of stems were eaten by Aborigines, the strong fibrous leaves were used to make net bags.

**LOMANDRA LONGIFOLIA**



## *Lomandra multiflora* ssp *multiflora*

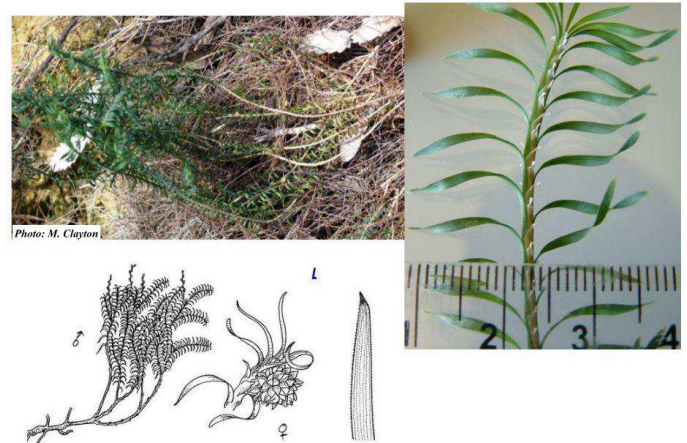
### *Lomandra multiflora* subsp. *multiflora*

Its leaves are dark greyish green, firm, thick, flat to concave, 25-90cm long x 1.5-5mm wide and rounded at the tip. Basal sheath margins entire or with some laceration, white, purplish or brown. The abundant male flowers are yellow, arranged in clusters on a branched stem, they are 2-3mm long with pedicels of 3-10mm. Female flowers unbranched, they are 3-4mm long and sessile.



### *Lomandra obliqua* Twisted Mat- rush

It is a small, stiff, non-tufted, sprawling herb with stems branched. The leaves are evenly spaced, short, glaucous, twisted with acute almost pungent tip. Sheath margins are white auriculate when young and intact. The yellow flowers with purple tinges are sessile and in clusters. Female inflorescence is a single globose cluster, male is spike of clusters 2- 10cm long.



*Lomandra obliqua*

## XANTHORRHOEAS - GRASS-TREES

The genus *Xanthorrhoea* is endemic in Australia contains 28 species in Aust. (The Flora of Australia), 11 in the Sydney Region ( Flora of the Sydney Region Fifth Ed. 2009 ), and 7 in the Sydney area covered north to the Hawkesbury, west to the Nepean and south to the Cataract River ( L. Robinson).

The origin of the name ***Xanthorrhoea*** is from the Greek: **xanthos** = yellow and **rhoea** = flowing, in reference to the yellow resin in the type species *X. resinosa*. The common name is grass-tree

### Description

*Xanthorrhoeas* are perennial plants with woody stems (trunks), either underground or above ground, surrounded with packed broad leaf-bases. Has a crowded crown of linear leaves.

They have a scape with a cylindrical dense spike-like inflorescence of many white flowers, with clusters and packing bracts of a wide variety depending on the species. The flowers are bisexual, actinomorphic, with 6 free tepals in two whorls, 6 stamens. Ovary 3-locular. The fruit is a loculicidal hard pointed capsule. Hybridisation occurs among species.

Flowering is enhanced by fire. Abundant nectar produced by flowers attracts birds, insects and small mammals. Aboriginal people soaked the flowers in water to make a sweet drink, flowering stalks were used to make spears and the resin to make a glue for weapons and tools. Europeans made lacquers and varnishes and in WWII cans of tin food sent to the Australian troops were varnished to protect them from rusting.

### Characters for Identification

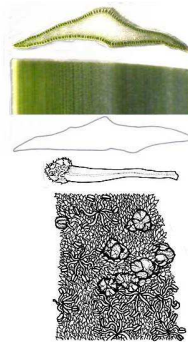
All the following characteristics plus habitat( locality of collection) are necessary:

- **Mature Packing Bracts:** shape and hairiness.
- **Transverse section of leaf:** shape, width and thickness taken at the mid-point along the length of the leaf. **Crown leaves:** spreading / erect and colour.
- **Trunk length** above or below ground.
- Ratio of **length of scape** to **length of flowering spike**. **Scape diameter** just below the spike; **spike diameter** at the widest point of spike. Variations of these measurements can occur due to the effect of environmental conditions..
- In many cases cluster bracts, flower and fruit characteristics

## Xanthorrhoeas in the Ku-ring-gai Wildflower Garden

### Xanthorrhoea arborea

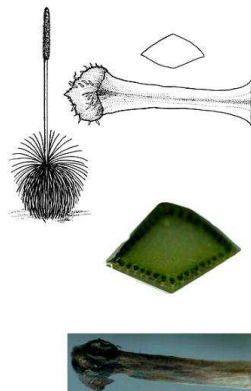
Has an aerial trunk ( 1 -2m), often branched. Leaves transverse section 5-8 mm wide  $\pm$  flat with small ridges, dark greenish grey to glaucous. Spike nearly as long as scape (1-2m) Packing bracts shortly acute, fringed to moderately hirsute. Grows in sclerophyll forest on sheltered hillsides, in sand or sandstone. Confused with *X. latifolia*, but this has glossy green leaves and much shorter spike.



### Xanthorrhoea media

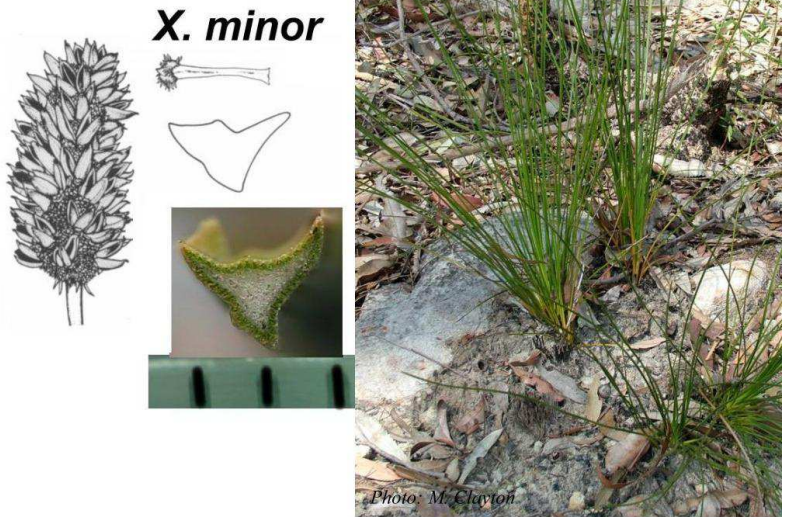
Trunk absent or to 0.8m unbranched. Leaves transverse section 2-3 mm wide, rhombic/triangular, mid to dark green, glossy, crown leaves +/- hemispherical. Spike usually less than half the length of scape. Scape 1-2m long, 5-11mm diameter. Packing bracts dark brown, glabrous to moderately hirsute. It grows in sclerophyll forest on sandstone, usually on the drier, more exposed ridges and hill sides.

### *X. media*

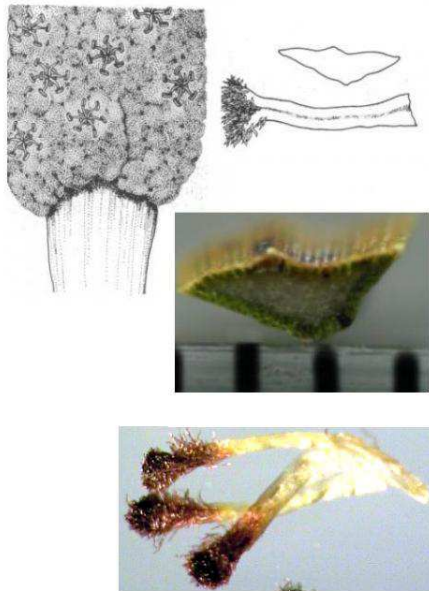


**Xanthorrhoea minor ssp minor**

Trunk branched below ground; many crowns, each a +/- erect tuft. Leaves depressed cuneate, often concave in section (2 -3.5 mm wide, 1-1.5 mm thick), green. Spike 5-12 cm long, 0.7-2 cm diam. Scape 30-60 cm long, 3-8 mm diam. Packing bracts shortly acute fringed margins with hairs, outer surface glabrous. Grows in heath and swamps, usually on poorly drained sites which are seasonally water logged, often in clay soils.



***Xanthorrhoea resinosa***



**Xanthorrhoea resinosa**

**Synonyms:** *X. resinifera* and *X. resinosa* subsp. *resinosa* APNI( Australian Plant name Index)

Trunk buried or to 0.6 m high. Spike dark brown, velvety when flowering, 60- 120 cm long, 2-4.5 cm diam. Scape up to 2 m long +/- as long as spike, 1- 3 cm diam. Young

leaves in a stiff +/- erect spreading tuft. Leaves 2-4mm wide, 1.5- 2.5mm thick, transverse-rhombic section, blue green glaucous.. Packing bracts dark brown, shortly acute, densely hirsute. Grows in heath or low sclerophyll woodland in seasonally wet places, on sandy soils and on sandstone.

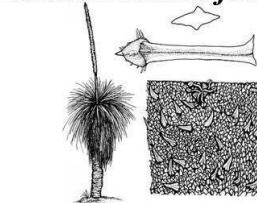
***Xanthorrhoea johnsonii*** (PLANTED IN KWFG)

Trunk from 0.1– 0.5 m high. Scape 1- 2 m long, usually as long as spike, 7-20mm diam. Spike usually 20- 120 cm long, 2-4 cm diam. Young leaves in upright tufts, old leaves strongly reflexed. Leaves section +/- quadrate -rhombic to transverse- rhombic, 1-2.5mm wide, 0.8-1.8 mm thick, green.

Packing bracts shortly

acute to acute, upper third almost glabrous to moderately hirsute. Grows N from Singleton DSF and heath, in well drained sites. Hybridise with *X. fulva* in SE QLD. Extremely variable ( D J Bedford).

***Xanthorrhoea johnsonii***



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

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