

### **Carpobrotus in WA**

Western Australia has a range of native and naturalised *Carpobrotus* species or Pigfaces. The *Sarcozona* genus is very closely related (photos below are *S. praecox* from inland WA). Within the Perth area there are four species *C. virescens*, *C. modestus*, \**C. edulis* and *S. bicarinata*.

Because of their succulent nature and soft flowers *Carpobrotus* species make very poor herbarium specimens and need to be studied alive to adequately determine species boundaries. When they grow together species readily hybridise. Hybrids are recorded between both native and weedy species and between *Sarcozona* and *Carpobrotus*.

Of the species mentioned above only the weedy *Carpobrotus edulis* and the native *C. virescens* are found along the beaches from Wanneroo to Rockingham, the others all occur further inland.

Most keys are designed to work on herbarium material or flower colour. These characters cannot be used on sterile material and do not recognise some species have male and female flowers and plants.

Planted individuals are mostly propagated from cuttings. This pamphlet has been prepared to assist coastal care groups, collectors and propagators in the Perth area to obtain the correct material of the native species by showing how to recognise the different *Carpobrotus* species and hybrids from flowers and leaves.



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Background photo *Carpobrotus virescens* female plant, insert flower with native bees.

# **Carpobrotus**

## **Native and weed species on Perth beaches**



### **Kolbogo or *Carpobrotus virescens***

A low spreading scrambling to prostrate soft shrub or herb spreading to 2 metres (background photo) across with an increasingly open habit. Stems are often flushed red before they turn white.

Mature leaves are green and are roughly triangular in cross section, sometimes slightly concave on the upper surface (Figure 1h left), normally less than 10 mm across, with minute white teeth along the bottom ridge below the apex (Figure 1k).

Plants are normally either male or female (dioecious). Female plants have small pink flowers with a white band around the base of the 'petals' (photo above left and background). The 'petals' are petal-like stamens (staminodes) from 20-25 mm long (Figure 1g) and a white centre with a prominent stigma in the centre. Male plants have larger bright pink flowers (photo above right) with a yellow centre (from pollen filled anthers) and the stigma never enlarges. The 'petals' that are 32-36 mm long (Figure 1o).

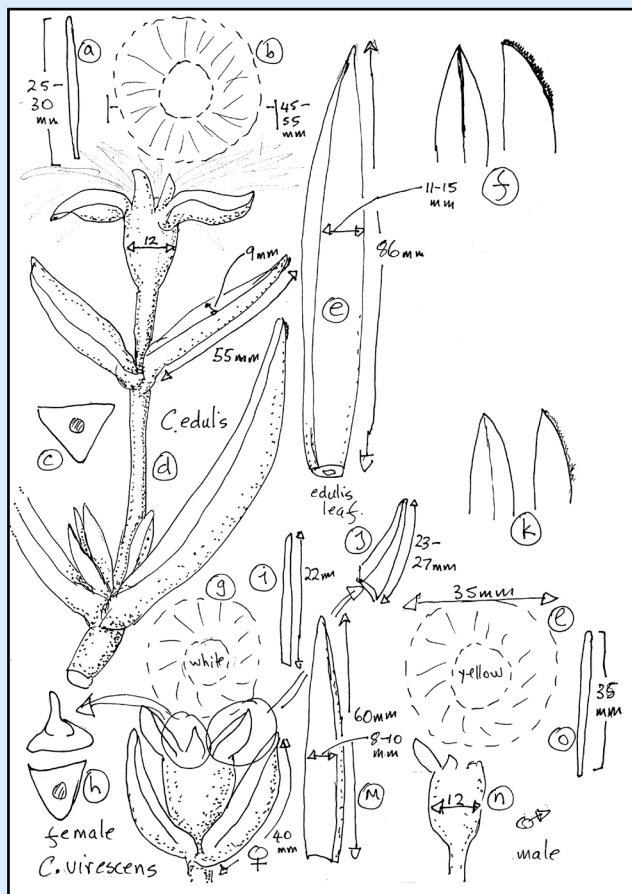
Fruits are purple red and soft succulent (photo below left, Figure 2 opposite, photo bottom opposite on right) when mature with many small brown seeds embedded in a sticky mucilage (photo below right) fruit lack a hard ridge on the side of the fruit and the retained sepals are 13-16 mm long (Figure 2c).

Normally only female plants will form fruits but there are occasional male plants where the flowers are hermaphrodite with a functioning stigma (perhaps mainly late in the flowering season).

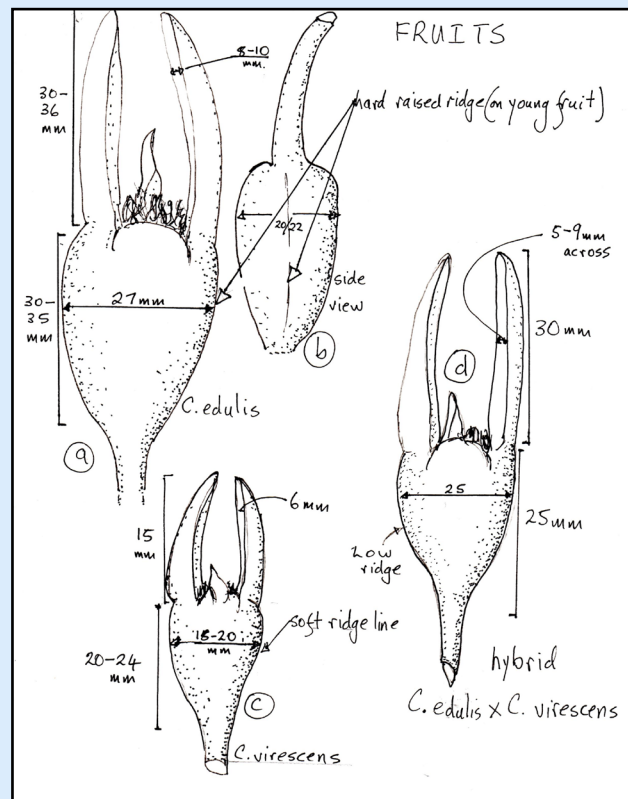
Non flowering plants will have white stems with leaves that are less than 10 mm across and with a white denticulate margin near the apex.







**Figure 1: a to f *Carpobrotus edulis*** a 'petals' (staminodes), b Flower from above, c cross section of leaf, d portion of stem below flower, e mature leaf, f apex of leaf; **g to o *Carpobrotus virescens*** g flower of female plant from above, h cross section of leaf, i 'petal', j sepal, k leaf apex, l male flower, m leaf, n ovary of male flower, 'petal' of male flower, o 'petal'.



**Figure 2 Fruit: a to b *Carpobrotus edulis*:** a front view, b side view; **c *Carpobrotus virescens*** front view; **d hybrid (*Carpobrotus edulis* x *virescens*)**, front view.



### The weed - *Carpobrotus edulis*

A low spreading scrambling to prostrate soft shrub or herb to 2 metres or more across (photo right, above) with pale yellow stems and a dense habit. Plants overtop and smothers other plants.

Mature leaves are usually: blue-green; depressed triangular in cross section; slightly flat on the upper surface; >13 mm across; and with rough brown teeth along the bottom ridge below the apex (Figure 1c, e & f).

Plants are never dioecious, always have hermaphro-

dite yellow flowers (photos opposite) that age pale pink. "Petals" are 25-30 mm long and flowers are large, 45-55 mm wide.

Fruits are yellow, when still green have a prominent ridge along the side, (photo far left, and image left) soft succulent when mature with many small brown seeds embedded in a sticky mucilage. The fruits have the sepals attached which are 30-36 mm long and 27 mm wide (see Figure 2a & b).

Non flowering plants will have pale yellow stems with dull green leaves that are usually 13-15 mm wide but always more than 10 mm across, with a brown line of rough teeth below the apex. Plants are much denser than *C. virescens*.



### Hybrid *Carpobrotus edulis* x *modestus*

Hybrids have hermaphrodite flowers (photo below by Rae Kolb) that are pink, larger than *C. virescens* they are fertile and fruits are also intermediate in size (Figure 2d, photo far left, centre), with sepals 30 mm or more long.

Non flowering plants will have pale yellow stems with leaves that are more than 10 mm across, with a brown line of rough teeth below the apex.

