

LIVING WITH GLOSSY BLACKS:

GLOSSY BLACK-COCKATOO FEED TREE IDENTIFICATION

Glossy Black-Cockatoos have a highly specialised diet, feeding almost exclusively on the seeds of she-oaks (*Allocasuarina* and *Casuarina* species). Throughout their range they feed on at least nine species of she-oak. Yet within a local area feeding by the Glossy Black-Cockatoo is often restricted to a single species.

Along the coast and ranges of South-East Queensland and North-Eastern New South Wales, Glossy Black-Cockatoos show a distinct preference for the Black She-oak (*Allocasuarina littoralis*) and the Forest She-oak (*Allocasuarina torulosa*). However they have also been recorded feeding on the Coastal She-oak (*Casuarina equisetifolia*), and very rarely on the River She-oak (*Casuarina cunninghamiana*) and Swamp She-oak (*Casuarina glauca*). Further inland and west of the Great Divide, the Glossy Black-Cockatoo will also feed on the Belah (*Casuarina cristata*).

Why is identification of feed trees important?

Accurate identification of Glossy Black-Cockatoo feed trees is important for a number of reasons:

- (1) It will help determine which local she-oak species are used as feed trees and aid in the protection of these areas.
- (2) It will allow targeted field surveys and population monitoring, which form the basis of regional conservation.
- (3) It will raise awareness of the significance of she-oaks as feeding habitat, essential for the conservation of Glossy Black-Cockatoos.

The information below provides some key characteristics that will assist in she-oak identification.

Flowers

She-oaks are typically dioecious, meaning male and female flowers are found on separate trees. A few species are monoecious meaning male and female flowers are found on the same tree. Male flowers look like elongated spikes located on the end of branchlets and female flowers look like small round heads on short stems.



Glossy Black-Cockatoo feeding on Coastal She-oak (photo courtesy Alan Rash)

Fruit

Female flowers develop into a woody cone. The woody cone has many paired valves (the flower bracteoles) which open when the seed is ripe. The papery seed is wind dispersed.

Branchlets and leaves

She-oaks have slender, grooved and jointed branchlets (or cladodes) that look like leaves. At the joints of the branchlets are whorls of small 'teeth' which are modified leaves. Leaves (teeth) of she-oaks are found in whorls of between 4 and 20, with the number of teeth used to identify each species of she-oak. A hand lens is required to count the number of teeth per whorl.



Forest She-oak
(*Allocasuarina torulosa*)



Black She-oak
(*Allocasuarina littoralis*)

'Teeth' of the Forest and Black She-oaks

This fact sheet provides information on the identification of Glossy Black-Cockatoo feed trees including Black She-oak, Forest She-oak, Coastal She-oak and the inland she-oak known as Belah.



LIVING WITH GLOSSY BLACKS:

Black She-oak *Allocasuarina littoralis*

Habitat and distribution

The Black She-oak occurs in open forest, woodland or occasionally tall heath on well-drained sandy or otherwise poor soils.



Plate 1 Stand of Black She-oak, North-east NSW (T. Fountain)

Description

The Black She-oak grows to a height of 5 to 15m on more favourable sites.

As with many species in the Casuarina family, the Black She-oak is dioecious meaning male and female flowers are produced on separate plants in spring.

Female plants produce woody cones with a wind dispersed seed. Cones are ovoid to cylindrical and are 10 to 30mm in length (rarely to 45mm) and 8 to 21mm in diameter. Unopened cones are grey-brown in colour, with old cones turning grey (Plates 2 and 3).



Plates 2 & 3 Cones of the Black She-oak (T. Fountain)

The Black She-oak has dark grey, deeply furrowed bark (Plate 4).



Plate 4 The bark of the Black She-oak (T. Fountain)

The Black She-oak has very fine, slightly pendulous foliage, with branchlets to 20cm long. Typically the Black She-oak has 6 to 8 'teeth' (rarely 5 or 9) per whorl. Counting the number of teeth per whorl using a hand lens can help to distinguish this species from other She-oaks.

The other features that can be used to distinguish this species from other She-oaks used by the Glossy Black-Cockatoo are:

- Habitat – grows on sandy or low nutrient soils predominantly near the coast;
- The shape of the cones - ovoid to cylindrical;
- The colour and texture of the bark – dark grey and deeply furrowed; and
- The fine foliage – only Forest Oak has similar foliage. Coastal, River and Swamp She-oak all have coarser foliage.



LIVING WITH GLOSSY BLACKS:

Forest She-oak *Allocasuarina torulosa*

Habitat and distribution

The Forest She-oak typically occurs as an understorey tree in open forest to tall open forest. It occurs on moister, higher nutrient soils on hillslopes than the Black She-oak.



Plate 1 Stand of Forest She-oak trees, North-eastern NSW (T. Fountain)

Description

The Forest She-oak typically grows between 15-20m in height, although can grow to 30m on more favourable sites.

Similar to the Black She-oak, the Forest She-oak is dioecious (separate male and female trees) and flowers in autumn.

Cones are warty, ovoid to globular (although can be irregular in shape) and are 15 to 33mm in length and 12 to 25mm in diameter. New, unripe cones are furry and orange in colour. Old cones are dark grey-brown (Plates 2 and 3).

The Forest She-oak has spongy, corky bark of a light orange colour (Plate 4).



Plate 2 Unripened fruit of the Forest She-oak (T. Fountain)



Plate 3 Old woody cones of the Forest She-oak.



Plate 4 Forest She-oak bark is orange and corky (T. Fountain)

The Forest She-oak has very fine foliage with branchlets to 14cm long. The Forest She-oak has 4 to 5 erect teeth per whorl. Counting the number of teeth per whorl using a hand lens can help to distinguish this species from other She-oaks.

The other features that can be used to identify this species from other She-oaks used by the Glossy Black-Cockatoo are:

- Habitat – grows on higher nutrient soils on hillslopes and mountains;
- The shape of the cones - ovoid to globular;
- The colour and texture of the bark – light orange and corky; and
- The fine foliage – only Black She-oak has similar foliage.



LIVING WITH GLOSSY BLACKS:

Coastal She-oak *Casuarina equisetifolia*

Habitat and Distribution

The Coastal She-oak grows on rocky headlands and coastal sand dunes. As it is effective in preventing sand erosion, it has been planted extensively on coastal dunes that have been historically sand mined.



Plate 1 Coastal She-oak stand, North-eastern NSW (T. Fountain)

Description

The Coastal She-oak grows to a height of between 6 and 12m. The tree canopy is spreading and open. Unlike most species in this family, the Coastal She-oak is monoecious, meaning that male and female flowers are produced on the same tree.

The Coastal She-oak flowers in spring/summer, with cones forming and maturing in summer/autumn. Cones are small and circular and are 10 to 24mm in length and 9 to 13mm in diameter with valves large and protruding (Plate 2).



Plate 2 An unripened cone (right) and a ripe cone releasing seeds (left) (T. Fountain)

The Coastal She-oak has mid grey bark, which is smooth on young trees but becomes rough, thick and slightly furrowed in older trees. On older trees the bark often comes off the tree in plates (Plate 3).



Plate 3 The bark of the Coastal She-oak is mid-grey and rough (T. Fountain)

The Coastal She-oak has coarse grey-green foliage, which can be densely hairy when young. Branchlets are long and drooping, having prominent angular ribs and are to 38cm in length. The Coastal She-oak has 6 to 8 erect teeth per whorl.

Other features that can be used to identify this species from other She-oaks used by the Glossy Black-Cockatoo are:

- Habitat – found predominantly on fore and hind dunes and occasionally on headlands;
- The shape of the cones - small and circular with protruding valves;
- The colour and texture of the bark – mid-grey and smooth on young trees, rough and flaking on older trees; and
- The long grey-green drooping foliage.



The Glossy Black Conservancy is a not for profit consortium that seeks to increase awareness and promote a collaborative conservation management approach for Glossy Black-Cockatoos across SEQ and north-east NSW, through a partnership between government, private enterprise, researchers and the wider community. Information included in this fact sheet does not necessarily express the views of all Conservancy partners.

LIVING WITH GLOSSY BLACKS:

Belah *Casuarina cristata*

Habitat and Distribution

The Belah grows on clayey heavier soils or sandy calcareous soils, and is found mostly inland of the Great Dividing Range ranging from south east Queensland to central NSW. It may be found as scattered trees, in dense pure stands or growing together with a number of other tree and shrub species like Brigalow and Poplar Box. It can reproduce by suckering from its root system.



Plate 1 A woodland stand of Belah, Queensland (M. Cant).

Description

The Belah grows to a height of between 10 and 20m and is typically dioecious, but sometimes monoecious, with both male and female flowers found on the same plant.

Cones of the Belah are rusty coloured and softly hairy when young but are nearly hairless at maturity. They are small and oblong in shape and between 13 to 18mm in length, occasionally growing to 25mm. They are 10 to 16mm in diameter, with valves having a sharp, protruding point (Plate 2).



Plate 2 Cones of the Belah (Queensland Herbarium).

The bark of the Belah is finely fissured or scaly, having a regular pattern, and is grey-brown to almost black in colour (Plate 3).



Plate 3 The grey-brown finely fissured bark of the Belah (M. Cant)

Branchlets of the Belah may be drooping in healthy trees or spreading in poorer trees, with branchlets growing to 25cm in length.

The Belah has 8 to 12 teeth per whorl. Counting the number of teeth per whorl using a hand lens can help to distinguish this species from other She-oaks.

Other features that can be used to identify this species are:

- Habitat – Not found on the coast or coastal ranges. More common west of the Great Dividing Range but does occur east of the Great Dividing Range in Queensland;
- The shape of the cones - small and oblong with sharp protruding points;
- The colour and texture of the bark – regular and finely fissured; and
- Drooping branches, with coarse dark green branchlets having a waxy bloom.

