

Caustis flexuosa

Old Man's Beard



Who has not been delighted when they discovered Old Man's Beard, *Caustis flexuosa*, for the first time? Grasses, and grass-like plants that lack brightly coloured, eye-catching flowers, often escape our attention; Old Man's Beard is surely an exception.



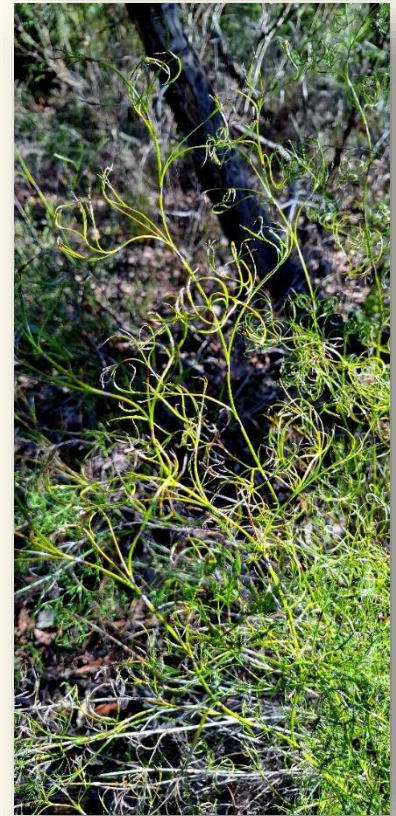
Caustis flexuosa –
distribution in Australia

Old Man's Beard occurs along the coast and coastal ranges from western Victoria through to Queensland, extending westward to Mudgee and the Warrumbungle Ranges near Coonabarabran. It is common in *Eucalyptus* forest, particularly woodland on sandstones in Sydney and the Blue Mountains, while also occurring on granite in other areas.

Caustis flexuosa looks like a grass (family Poaceae) but it's actually a perennial sedge (family Cyperaceae) well adapted to surviving on low

nutrient, seasonally dry, sandy soils. Unlike grasses with their hollow stems, sedges have solid stems and closed sheaths.

To reduce water loss through transpiration, leaves are reduced to red brown sheaths and photosynthesis takes place in the tough, wiry, glossy green stems (culms) produced from underground rhizomes. Soil fungi form vesicular arbuscular mycorrhizae in the roots, improving nutrient uptake on nutrient-poor sandy soils. Nutrients and water are stored in underground rhizomes that stabilise soil and provide protection from drought and fire, enabling rapid regrowth after disturbance. Even the reproductive biology adapts them to inhospitable environments. Inconspicuous flowers are pollinated by wind and bushfire smoke promotes germination of its seeds.



Why do the stems of *Caustis flexuosa* curl? The leaves of many grass-like plants (monocotyledons) gain structural stiffness from curling while also minimising water loss in return for efficient light capture.

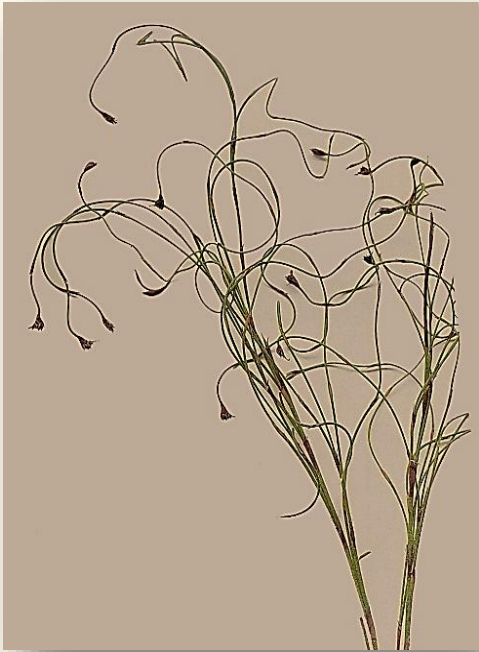


Caustis pentandra in flower; leaves are reduced to reddish-brown sheaths along the stem.

There are seven species of *Caustis*, all are endemic; Species are present in all states, but not in the Northern Territory.



Distribution of *Caustis* species. The genus occurs only in Australia



Lepyrodia cincinnata from South Africa (Synonym: *Ischyrolepis cincinnata*) belongs in a different family (Restionaceae).

Plants (and animals) often reveal the phenomenon of **convergent evolution**, where similar traits are seen in unrelated species. *Caustis flexuosa* is one such example. A South African species (*Lepyrodia cincinnata*) from the family Restionaceae looks for all the world like *Caustis flexuosa*. Both survive in similar environments, so the same stem morphology has evolved in spite of their genetic remoteness.

Atlas of Living Australia, *Caustis* – distribution in Australia – modified from:

https://biocache.ala.org.au/occurrences/search?q=lsid:https://id.biodiversity.org.au/taxon/apni/51763179#tab_mapView

Atlas of Living Australia, *Caustis flexuosa*, distribution, modified from:

https://biocache.ala.org.au/occurrences/search?q=taxa%3A%22Caustis+flexuosa%22#tab_mapView

Bellgard S E. 1991. Mycorrhizal associations of plant species in Hawkesbury Sandstone vegetation. *Australian Journal of Botany*. 39:357-364.

King M J, Vincent J F V, Harris W. 1996. Curling and folding of leaves of monocotyledons — a strategy for structural stiffness, *New Zealand Journal of Botany*, 34:3, 411-416, DOI: 10.1080/0028825X.1996.10410704

Plantnet: <https://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Caustis~flexuosa>

Plantnet: <https://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=gn&name=Caustis>

Wikipedia: https://en.wikipedia.org/wiki/Caustis_flexuosa

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