

FACT SHEET

COASTAL LOWLANDS VEGETATION 1

*Wallum down low and
shrublands on high*



Wallum banksia
Banksia aemula

A word on wallum

Aborigines used the word “wallum” to name a species of banksia (*Banksia aemula* wallum banksia). Today the word has been extended to describe a variety of vegetation communities found in the lowlands. **Typically used to label communities characterised by wallum banksia, wallum can also describe communities containing a wide variety of species including other banksias, acacias, eucalypts, boronias, sedges and reeds.**

Botanists believe wallum communities are floristically rich as many different plant species are found flourishing on typically infertile soils.

Wallum down low

Wallum is a common name that can be used to describe two broad vegetation types found on the infertile soils of south-east Queensland's coastal lowlands: the open (dry) heathland and shrubland on coastal dunes and plains, and the closed (wet) heathland and sedgeland on coastal plains.

Wallum plants are generally tough, sometimes prickly survivors. They have evolved to survive in exposed, low-nutrient soils which are often poorly drained. Wallum plants often have hard, waxy leaves (called sclerophylly), which appear to be an evolutionary response to low nutrients. The hard, waxy leaves contain oils, resins and tannins, making the wallum highly flammable.

Wallum plants have evolved with mechanisms to cope with fire. Research indicates that if a wallum community is to maintain biodiversity, regular yet patchy burns (called mosaic burns) should be carried out every seven to ten years at a minimum, with some areas left longer. Many wallum plant seeds will germinate only after a fire. Too few fires mean some fire-dependent species might not regenerate.

Too many fires, however, can damage wallum by depleting the already low soil nutrients and killing young plants before they have a chance to set seed.

Wallum plants have also evolved in different ways to cope with low nutrients levels. Members of one family of wallum plants have adapted their root structure to be more efficient at taking up the meagre nutrients.

Wallum habitats are balanced on a knife-edge. Any small change in the environment, such as variations in hydrology (water tables and drainage) or the addition of soil nutrients (via storm water and general runoff) affects the plants and this has flow-on effects to animals living in the wallum. Altered wallum habitats cannot support the same diversity of species.



Shrublands on high

The montane shrublands of the coastal lowlands have a limited distribution and are confined to the top of a few small rocky mountains in the Sunshine Coast region. These communities have a number of plant species only found there.

Open (dry) heathland and shrubland on coastal dunes and plains

South-east Queensland's coastline attracts thousands of people each year to live "the good life." **Extensive clearing for urban development has tipped the open (dry) heathland on coastal dunes and sand plains towards extinction. They are now classified as endangered.**

New shoots, nectar-laden flowers and fruits of the open (dry) heathland and shrubland provide seasonally high energy and nutrient-rich food for mammals, birds, reptiles and insects. Some heathland and shrubland plants rely on birds for pollination. Other plants rely on mammals, such as rats, bats and gliders. Native bees are yet another pollinator important in this wallum habitat.

You can see open (dry) heath behind Marcus Beach near Noosa and in Bribie Island National Park.

Activity idea: Maroochy Shire Council and community volunteers are conducting a wallum regeneration project. To find out what they are doing contact Maroochy Shire Council on (07) 5441 8170

Closed (wet) heathland and sedgeland on coastal plains

Much of the area covered by closed (wet) heathland along the Sunshine Coast has now been drained, filled or cleared for housing. The stunted shrubs, herbs and sedges of the remaining closed

(wet) heathlands burst into spectacular springtime wildflower displays.

Closed (wet) heathland and sedgeland species are incredibly diverse and are found where water collects on poorly drained sand plains. These waterlogged habitats are also home to many rare and threatened species including the ground parrot *Pezoporus wallicus*, and Christmas bells *Blandfordia grandiflora*.

You can see closed (wet) heathland at Mooloolah River National Park.

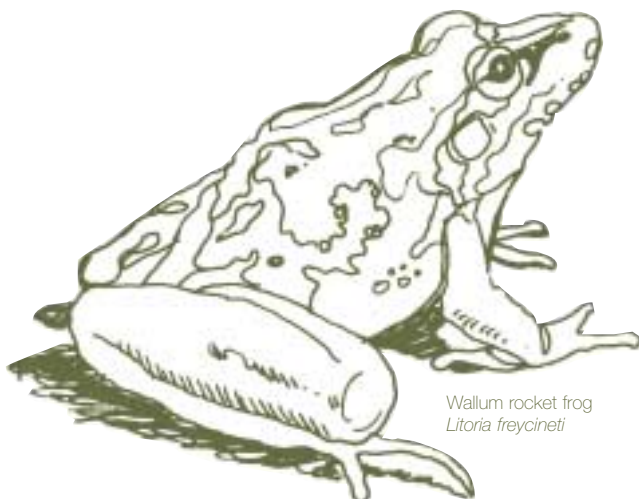
Look for

Swamp banksia *Banksia robur*: With its large, leathery leaves. This banksia's flowers are green at first, then change from cream to a rusty brown. They are tough survivors, sprouting from underground woody roots (called lignotubers) after fires.

Sundews *Drosera* spp: Nitrogen is low in heathland soils so these tiny carnivorous plants have found ways of obtaining it from insects. When an insect wanders onto a hair-covered leaf, it is trapped by the sticky fluid glistening like dew. The plant then secretes enzymes to digest the insect and absorbs its nutrients.

Curly sedge seeds *Caustis recurvata*: Sedges have root rhizomes and are able to send up new shoots quickly after fire. The vulnerable **ground parrot** feeds on these seeds.

Coffee rock: Often exposed by erosion, this rock is hard black or dark brown sand, cemented by organic material.



Wallum rocket frog
Litoria freycineti

Grass trees

A characteristic feature of closed (wet) heathlands is the grass tree. These ancient Australians can be long-lived and have a reputation for extremely slow growth. Of the grass tree species found on the Sunshine Coast, a trunkless species *Xanthorrhoea fulva* is commonly called swamp grass tree. One species with a trunk is *Xanthorrhoea latifolia*.

Fires can trigger mass blooming. The nectar-rich blossoms on the "spears" attract many birds, insects and even tiny blossom bats *Syconcteris australis*.

Vanishing heath species

With wallum under threat, it is not surprising that several plant and animal species are listed as rare or threatened.

Acid frogs:

Wallum froglet *Crinia tinnula*, wallum rocket frog *Litoria freycineti*, wallum sedgefrog *Litoria olongburensis* – all listed as vulnerable.

Undisturbed coastal heathlands have water which is acidic (pH range 3.0-5.2) and low in nutrients. Only the eggs and tadpoles of specially adapted “acid” frogs can survive in this environment. When disturbances such as clearing and draining alter the pH and increase nutrients, common and widespread species of frogs can invade and compete more successfully than the acid frogs.

Rarely seen birds:

The vulnerable ground parrot *Pezoporus wallicus* is shy, elusive and largely nocturnal. Optimum habitat appears to be regenerating

and mature heathland vegetation, so fire management is essential for their survival. Feral cats and foxes also take their toll.

Hidden reptiles:

The small and secretive burrowing skink *Ophioscincus truncatus* is listed as rare and lives under moist leaf litter or rotting logs. Too frequent fires can destroy its microhabitat.

Disappearing plants:

Mt Emu she-oak *Allocasuarina emuina* is an endangered plant, only known in a few populations on the Sunshine Coast, including a small group on Emu Mountain.

Swamp stringybark *Eucalyptus conglomerata* is found on the edge of wallum areas where forests take over. Not only on the edge of forests and wallum, but on the edge of survival, this endangered lowland species is found only in small patches between Beerwah and Cooloola.

Wild about wildflowers

In late winter and spring, wallum bursts into bloom with an amazing variety of wildflowers. In particular the closed (wet) heathlands put on spectacular displays.

Look for

Wedding bush *Ricinocarpus pinifolus*: With its masses of white flowers, this bush can grow up to three metres in sheltered areas, but on windswept dunes only reaches 25cm.

Wallum banksia *Banksia aemula*: With serrated leaves up to 20cm long, this banksia has flower spikes that fade from fresh green to brown as they age. Its sweet nectar attracts many birds such as rainbow lorikeets and honeyeaters.

Wallum boronia *Boronia falcifolia*: found in closed (wet) heathland, this plant produces four-petaled flowers of rose pink blooms.

Mauve vanilla lilies *Sowerbaea juncea*: These are found scattered across the dry, sandy plains.

Common aotus *Aotus ericoides*: Provides a splash of yellow with a hint of red in its keeled flowers.

Native iris *Patersonia serica*: Has a single purple flower with large showy petals for a wallum inhabitant.

Wallum heath *Epacris pulchella* and coral heath *Epacris microphylla*: With their small stiff pointed leaves and small white flowers, these add another colour dimension to the flowering heathlands.

Wild may *Leptospermum liversidgei*: Has leaves that have a strong lemon scent when crushed and white flowers which usually bloom in early summer.

Activity idea: Go wildflower spotting during late winter and spring. Early morning and late afternoon are the best times to view the flowers and the many heath birds attracted to their nectar. Resist the temptation to pick wildflowers – what is easy to pick may take years to replace. Even dead parts of plants are important in nature, and are protected by law. Good books include: *Wildflowers of the Noosa Cooloola Area* by Dr Arthur Harrold (Noosa Parks Association); and *Our Wildflower Heritage* by R. Eustace and L. Johnston (Society for Growing Australian Plants).

Montane shrubland

The stunted and gnarled montane shrublands form a restricted and very special community found on the tops of exposed, rocky mountains such as Mt Coolum and Mt Beerwah. Because these mountaintops are isolated, many plants and animals are endemic (found nowhere else). **Several rare and threatened species are also found in the montane shrublands.**

Like the wallum growing on the sand plains, montane shrubland species need to be tough. The rocky slopes yield little nutrients and vegetation is exposed to hot and sometimes salty winds and frequent fire. Fortunately, not many people want to live on or farm these exposed mountains, so much of this original vegetation still survives on the Sunshine Coast.

The montane shrublands of the lowlands are fragile because the rocky peaks are small and isolated with steep terrain and easily eroded, very shallow soils. The vegetation can quickly be degraded by high recreation use, fire and surrounding landuse. In particular, the montane shrublands are being degraded by trampling when visitors walk over them. This seriously affects herbaceous species and some shallow-rooted perennials. It takes a long time for plants to recover after disturbance such as trampling because of the shallow, skeletal soils in these shrublands.

The remaining montane shrublands need to be managed to control weed and feral animals and to ensure the right amount of planned burning for optimum health.

Several rare and threatened plant species are found in montane shrubland including:

Mt Coolum she-oak *Allocasuarina thalassoscopica*, known only from a single group growing on Mt Coolum. The Latin meaning of *thalassoscopica* reflects this unique plant's position: overlooking the sea.

Hop bush *Dodonaea rupicola*: Found on some of the Glass House Mountains peaks.

You can see montane shrublands on isolated mountaintops in the Glass House Mountains National Park.

Activity idea: *Take a walk up Mt Coolum. While rewarding yourself with sweeping views of the coastline, take time to look at the different plant species some of which are very restricted. Be careful not to trample these sensitive survivors.*



Native iris
Patersonia serica

A fire-shaped landscape

Wallum plants have evolved a number of strategies to cope with frequent fires, including growing woody fruits to protect their seeds and having heat-resistant bark. Some have stem buds and root tubers that quickly shoot after a fire has burned away leaves and branches.

After a fire, some species release their seeds which then fall into nutrient-rich ash beds, helping young seedlings to grow.

Too few or too frequent fires alter the distribution of the plants and the kind of wildlife dependent on those plants. Too few fires in the wallum mean taller trees dominate; and the animals dependent on the nectar-rich smaller shrubs will go elsewhere. Too many fires cause some plant species to die out because they do not have time to mature and set seed.

Wallum and montane shrubland threats

These vegetation types and the plants and animals found there face many threats:

- land clearing for housing and pine forests
- introduction of nutrients from stormwater and garden fertilisers
- weeds and feral animals
- altering the drainage by adjacent development
- pollution from mosquito control spraying
- too few or too many fires