



Spinifex grasslands

Triodia species, more commonly known as Spinifex, Hummock Grass or Porcupine Grass, are not a common element in the Queensland Murray Darling Basin region and are often overlooked in conservation and research efforts. These fascinating grasslands, however, host a large variety of plants and animals, often unique to the area. Protection, research and appropriate management are vital for these important remnants.



What are Spinifex communities?

Spinifex communities are characterised by their occurrence on low nutrient soils (sandy surfaced, duplex soil with relatively impermeable subsoil) with a low water holding capacity. The dominant vegetative component is 'spinifex' grasses from the *Triodia* and *Plectrachne* genus. The growth habit of these species is hummocks – giving these grasslands their name.

FACT: Spinifex communities across Australia are home to the largest diversity of reptile species of any other vegetation community

In general, spinifex grasslands have low tree numbers, with higher numbers of shrub species. Grasses are usually annuals or short lived perennials and forbs are usually short lived perennials or ephemerals. In wet seasons or following disturbance (e.g. fire and grazing) other native and exotic species may colonise gaps between hummocks.

Spinifex is drought tolerant and persists under harsh conditions, growing on poor, shallow soils. Seedlings can enter into a virtual dormant state facilitating survival under poor conditions or periods of intense competition from neighbouring vegetation.

The pattern of succession following disturbance by fire is largely responsible for the great diversity within this community. In central Australia, Indigenous burning practices over many thousands of years have been an integral part of the formation of the hummock grasslands producing areas with new growth and a flush of ephemeral species adjacent to older unburnt areas with mature spinifex and larger shrubs. This diversity and proximity of habitat types give hummock grasslands their unique characteristics and an ability to support a great diversity of faunal species.

Spinifex grasslands are dependant on fire for existence. Soil seed banks are triggered to germinate by the passage of fire. After a fire, plants may also regenerate by resprouting from the base of burned hummock. Without fire Spinifex hummocks collapse in the centre as the plant material ages and dies, with the younger leaves remaining green around the outside, forming a distinctive ring-like structure that eventually breaks up.

What makes Spinifex different from other grasses?

- Tussocks form large, dense, spiky hummocks or mounds up to two metres in diameter
- Slow-growing grass, compared to other genera



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- When the leaves are young they are flat and relatively soft, but as they age the edges roll under and the leaf becomes very stiff, coarse and pointed
- Stems can produce a large amount of sticky resin making the plant very flammable
- Produce sticky flowers with a honey smell
- Seed head stem of Spinifex plants is very erect; 50-100 cm long with well-branched heads at the top
- The plants are green all year round and flower in response to heavy rainfall, with the capacity to respond to unseasonal rainfall events

Spinifex grassland management

Burning

It is important to plan to use fire, for habitat management or control of woody thickening, and be ready to respond when season and rainfall conditions combine to create an opportunity to burn. Maturity is dependent on rainfall, **not** time. After a burn, spinifex may take up to two years to regenerate, depending on external conditions and up to eight years to reach maturity.

- Adjust burning to take account of the actual maturity of the spinifex as this can vary considerably according to topography and the rainfall received over the seasons since the last fire
- As a guide, burning a proportion of the country each year at intervals of four to six years is suggested
- Burning regime needs to be flexible, taking into account any unplanned fires

NOTE: Spinifex produces very hot fires. Land managers need to be aware of this threat and take necessary precautions.

- Burn towards the end of the year, with a small burn early in the dry season as a firebreak
- Monitor spinifex areas and burn patches to create a mosaic of fire ages

Grazing

Spinifex grasslands are a poor quality pasture. They can be useful as drought fodder but only as a necessity. Horses eat seed heads but other stock avoid the plant unless very hungry.

These areas are fragile and if possible, grazing should be excluded or lightly grazed on a rotational basis. The Queensland Department of Primary Industries does not recommend pasture development on spinifex soils.

- Spinifex is at its most valuable in the early stages of regeneration after fire (one to two years)
- Spinifex communities should be allowed to mature before burning/grazing again to ensure that the seed bank is well replenished
- Spinifex seedlings are vulnerable to being pulled out in the early stages and it is recommended that wherever possible grazing should be deferred until they are well established

