DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES

Mesquite

Prosopis spp

HABIT	STEMS & BRANCHES	LEAVES	FLOWERS	FRUIT & SEED
				
Multi-stemmed shrubby bushes or single stemmed trees with a spreading canopy, growing from 3 - 15m tall.	Branches have a zigzag structure with single branches extending outside the main canopy. Mesquites are mostly thorny, with thorns ranging in length from 4mm to over 75mm.	Leaves occur at each point where the branch changes direction. They are twice-divided, with 1 - 4 pairs of primary leaflets each with 7 - 21 pairs of small opposite secondary leaflets.	Greenish yellow flowers forming a cylindrical flower head 50 - 80mm long. Flowers of all mesquite varieties have similar characteristics.	Fruit is a pale brown pod, maturing to straw coloured. It is 12 - 20cm long and straight or slightly curved, with slight constrictions between the 10 - 20 enclosed seeds.

Mesquite is declared a Class A (to be eradicated) and Class C (not to be introduced) weed in the Northern Territory and is a Weed of National Significance in Australia.

Mesquite is a declared weed in accordance with the *Weeds Management Act.*

There are four species and several hybrids of *Prosopis*, which are collectively known as mesquite. The most problematic of these species in the Northern Territory is *Prosopis pallida*, however *P.velutina, P.glandulosa, P. juliflora* are also declared weeds under section 7 of the Act.

The problem

Mesquite is a thorny tree which can grow up to a height of 15 m. Mesquite trees can form dense, impenetrable thickets. Mesquite reduces environmental values such as biodiversity and ecological function, through the invasion and replacement of native plant communities and habitat for wildlife.

Pastoralism is the main land use in areas most susceptible to mesquite invasion. Severe mesquite infestations can reduce the production of native and introduced pasture species by up to 90%, resulting in a reduction in carrying capacity. Similarly increased costs associated with mustering and weed control can have large impacts on industry profitability. Thorns can also damage vehicle tyres and injure animals and workers.

Habitat and distribution

Mesquite was introduced to Australia more than 100 years ago, where it was widely planted as a shade tree throughout western Queensland and north-western Western Australia. It was also used as a soil stabiliser around mine sites in Queensland and New South Wales. Mesquite is now present in all mainland states.

In the Northern Territory mesquite occurs as scattered, isolated, low level infestations across multiple regions including Arnhem Land, the Victoria River District (VRD), the Barkly Tableland and the Alice Springs region. On the Barkly Tableland low level infestations occur on at least 12 pastoral leases. These infestations are current management priorities as further spread and establishment into clean areas is a significant risk. Scattered plants found in the VRD and Alice Springs region are managed as recorded/detected.

Preventing spread of Mesquite

Spread prevention is always the most successful and cost effective way of managing weeds.

Cattle are a major cause of mesquite spread in the Northern Territory. Do not allow ingested mesquite seeds to spread by:

a. isolating and monitoring newly transported stock, particularly those coming from Queensland, Western Australia or other properties with known mesquite infestations

b. preventing grazing in areas where mature pods are available, potentially by fencing strategically to contain infestations

c. isolating and monitoring stock which are being moved from infested paddocks to clean paddocks.

Mesquite seeds are also readily spread by water flow (rain, floods), feral animals and vehicles. Spread reduction measures include:

- eradicating all known mesquite plants and infestations (including any deliberately planted)
- implementing early detection and eradication programs
- designing and implementing a spread prevention program
- prohibiting the production, sale or purchase and transport of mesquite, seed or products.

Appropriate hygiene protocols should be developed on properties with known mesquite infestations to avoid spread within the property and/or to outside areas.

Mesquite control

The success and type of control used will depend on the situation, although herbicide application using either a basal bark or cut stump method is generally the preferred form of control for the low density infestations found in the Northern Territory. These methods can be used year round, however control should ideally be undertaken prior to flowering/seeding.

Chemical control

Chemical and concentration	Rate	Situation, method and comments
Triclopyr 300 g/L & Picloram 100 g/L Various trade names	350 ml / 100 L	**Seedling (individuals or infestation)** Foliar spray - need non-ionic wetting agent
Triclopyr 600 g/L & Picloram 120 g/L Access®	1 L / 60 L (diesel) 1 L / 60 L (diesel)	**Adult (individuals or infestation)** Basal bark Cut stump

Optimum treatment times – Darker colours represent preferred months for foliar treatment.											
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec

Non-chemical control

Physical removal of mesquite is made difficult by the large and robust root system and the presence of large thorns. In mature trees, root systems may exceed a depth of 50 m. As the Northern Territory only has low density mesquite infestations, blade ploughing and grubbing are the most appropriate forms of physical control.

Blade ploughing involves pushing or pulling a blade-plough attachment through plants to cut stems off below ground level. It is best undertaken before seed set or when root reserves are low. Success depends on cutting the root system below the bud zone (20–30 cm) to reduce the likelihood of re-shooting.

Dozer pushing/grubbing is also suited to low and scattered densities. This method is similar to blade ploughing in that it aims to use a blade to push over trees at or below ground level.

Follow up

It is vital that follow up works are carried out to control seedling recruitment and regrowth after a site has been treated. As mesquite seeds can remain viable in soil for up to ten years, monitoring will need to continue for at least ten years in areas where mesquite is known to have seeded.

Disclaimer

In the Northern Territory, a registered product must only be used in situations consistent to those appearing on the label, unless authorised under a permit; and a person:

- must not have in their possession or use a chemical product unless the product is registered in Australia (exemptions apply)
- may use a registered product at a concentration, rate or frequency lower than that specified on the label unless this is specifically prohibited on the label. This does not apply to herbicide use occurring under an Australian Pesticides and Veterinary Medicines Authority (APVMA) permit
- may use a registered product to control a pest not specified on the label provided the pest is in a situation that is on the label and use on that pest is not specifically prohibited on the label
- may also use a registered product using a method not specified on the label unless this is specifically prohibited on the label.

Users of agricultural (or veterinary) chemical products must always read the label and any permit, before using the product and strictly comply with the directions on the label and any conditions of any permit. Users are not absolved from compliance with the directions on the label or conditions of the permit by reason of any statement made in or omission from this publication.

Further information

Weed Management Officers from the Weed Management Branch can provide advice on all aspects of weed management including control techniques, biological control, legislative responsibilities, policy advice, monitoring and reporting and regional planning.

For further information on weed management planning, integrated control, herbicide application techniques and monitoring please refer to the NT Weed Management Handbook.