



**Shoalhaven City Council Weed Management Plan– Bitou bush**

**Common name:** Bitou bush

**Botanic name:** *Chrysanthemoides monilifera* subsp. *rotunda*

**South East Regional Priority Weed Objective - Containment**

**Bitou bush Biosecurity Zone:**

*Owners and occupiers of land within the Shoalhaven Local Government Area must ensure that it is eradicated where practicable, or as much of the weed destroyed as practicable, and any remaining weed suppressed. The local control authority must be notified of any new infestations of this weed within the Biosecurity Zone.*

Bitou bush affects native plants mainly through competition, its high growth rate and, possibly, by releasing chemical inhibitors. Dense stands of Bitou bush exclude other indigenous plants leading to decreasing floral biodiversity and, consequently, changes in faunal diversity. Stands of Bitou bush also reduce the aesthetic appeal of natural environments and reduce recreational access to beaches and along walking trails.

In 1999, Bitou bush was listed as a *Key Threatening Process to Biodiversity* in NSW and as a *Weed of National Significance*. No species is known to have become extinct as a result of Bitou bush invasion but its distribution does overlap with those of some rare and endangered plant species, notably *Pimelea spicata*, *Zieria prostrata*, *Cynanchum elegans* and *Thesium australe*. Bitou bush displaces the dominant plants in communities it invades, for instance *Acacia sophorae* on coastal dunes, and leads to a decline in floral biodiversity, as well as changes in the diversity of birds, indigenous mammals and ground-dwelling insects. Stands of Bitou bush may also foster sites that harbour pest animals, such as foxes and introduced birds, which feed on and disperse the seeds or shelter under Bitou bush canopies.

**General Biosecurity Duty**

*All plants are regulated with a **general biosecurity duty** to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable*

The **Bitou Bush Biosecurity Zone** is established for all land within the State except land within 10 kilometres of the mean high water mark of the Pacific Ocean between Cape Byron in the north and Point Perpendicular in the south.

The **Biosecurity Act 2015** and the **Biosecurity Regulation 2017** set out a range of penalties for non-compliance with the provisions of the legislation. Penalties range from \$1,000.00 on the spot fines, through to court imposed penalties of up to a maximum of \$220,000 for individuals or \$440,000 for corporations for failing to discharge a biosecurity duty. If an offence is proven to have been committed negligently, the court may impose a penalty of a maximum of \$1,100,000 for an individual and \$2,200,000 for a corporation.

**Key Identification Features:**

Bitou bush is a spreading woody shrub with succulent stems, often prostrate on the ground. It is typically 1-2 m tall and 2-6 m wide. Bitou bush develops a creeping habit under shade and may smother canopies up to 10 m in height. Its leaves are bright green, succulent, oval in shape with a tapering base and irregular teeth along the edge, 3-8 cm long. Young growth is typically covered by a cottony down. Mature plants produce lots of bright yellow daisy-like flowers with 11-13 'petals'. Fruits are green, becoming black when ripe and contain only a single seed. The seeds are egg-shaped, 5-7 mm long, fleshy externally with an internal hard bone-like shell which is dark brown to black when dry. Bitou bush differs from boneseed by its sprawling growth habit (versus the erect habit of boneseed), rounder and less obviously toothed leaves, flowers with more 'petals' (11-13 for Bitou bush versus 5-8 for boneseed) and egg-shaped ribbed seeds (versus round, smooth seeds for boneseed).

Chemical control calendar											
January	February	March	April	May	June	July	August	September	October	November	December
				Glyphosate 360 g/L (Roundup®) Aerial boom spray, handgun, backpack or splatter gun <b>NIL Withholding period</b>							
				Metsulfuron-methyl 600 g/kg (Brush-off®) Aerial boom spray, handgun, backpack or splatter gun <b>NIL Withholding period. 7 day Withholding period to allow uptake of chemical</b>							
				Picloram 44.7 g/kg + Aminopyralid 4.47 g/L (Vigilant II ®) Cut stump or stem injection <b>NIL Withholding period</b>							
<p><b>Herbicides are a safe and effective method of control</b> as part of an integrated Bitou bush management plan.</p> <p>The aim of herbicide treatment is to minimise the establishment of a large population of Bitou bush. The longer that Bitou bush plants live, the more seed they produce, and large amounts of seed lead to heavy infestations. A well-timed herbicide application can be very effective in reducing the density of Bitou bush infestation for more than a year.</p> <p><b>ALWAYS READ THE LABEL AND USE CHEMICALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS</b></p> <p>Refer to NSW DPI Weedwise website: <a href="http://weeds.dpi.nsw.gov.au/WeedBiosecurities?Areald=114">http://weeds.dpi.nsw.gov.au/WeedBiosecurities?Areald=114</a></p> <p>Bitou bush page: <a href="http://weeds.dpi.nsw.gov.au/Weeds/Details/16">http://weeds.dpi.nsw.gov.au/Weeds/Details/16</a></p>											

**Control with herbicides** Herbicides registered for Bitou bush can be applied in winter at low rates that effectively kill the weed, yet have minimal impacts on coastal vegetation. Herbicides can be applied from the air, from the ground or by a cut-and-paste method. Plants which are coated with dust or seaspray (eg. those close to tracks or the beach) could be less affected by herbicides. Glyphosate and metsulfuron methyl have been the herbicides most widely and successfully used against Bitou bush. See Herbicide Options for details on herbicides and application rates.

***Mechanical treatment:***

Mature Bitou bush plants can be slashed, whilst seedlings can be hand-pulled to remove the entire root system. Plants are liable to resprout after slashing alone, but applying herbicide to stems immediately after cutting should prevent regrowth. Mechanical techniques are laborious and impractical for infestations that are extensive or in areas that are difficult to access and may also cause soil disturbance and erosion problems, particularly when large roots are removed.

**Useful references:**

NSW Weedwise: <http://weeds.dpi.nsw.gov.au/WeedBiosecurities?Areald=114>

Biosecurity Act 2015: <https://www.legislation.nsw.gov.au/acts/2015-24.pdf>

Biosecurity Regulation 2017: <https://www.legislation.nsw.gov.au/regulations/2017-232.pdf>

South East Regional Strategic Weed Management Plan: [http://southeast.ils.nsw.gov.au/\\_data/assets/pdf\\_file/0006/722706/South-East-Regional-Weed-Mgmt-Plan.pdf](http://southeast.ils.nsw.gov.au/_data/assets/pdf_file/0006/722706/South-East-Regional-Weed-Mgmt-Plan.pdf)

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