

Smoke bush

Buddleja madagascariensis

Victorian Alert Weed Fact Sheet



Image: Richard Plant, DPI



Image: Aaron Dodd, DPI

Botanical name: *Buddleja madagascariensis*.

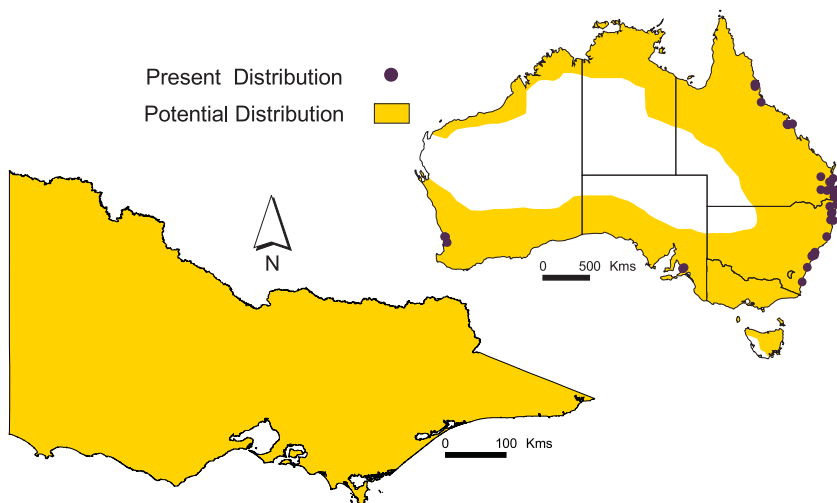
Synonyms: *Buddleja nicodemia*, *Nicodemia madagascariensis*, *Adenoplea madagascariensis*.

Common name: Smoke bush.

Alternatives: Butterfly bush, buddleia, orange buddleja.

Family: Buddlejaceae.

Relevant relatives: There are about 100 species in the *Buddleja* genus, of which six species are naturalised weeds in Australia. Weedy relatives of smoke bush that are already in Victoria include *B. davidii* (butterfly bush) and *B. dysophylla* (buddleia).



Plant biology

Type of weed: Garden escape.

Lifeform: Sprawling/climbing evergreen shrub.

Description:

Stems: Young plants and branches are covered with white felt-like hairs, older stems are covered with rust or yellow hairs. Smoke bush ordinarily grows to heights of 1.5 to 10 metres but will readily climb over established plants reaching far higher in the canopy. Broken stem fragments of smoke bush can develop roots, growing into new plants.

Leaves: Leaves are usually opposite on the stem, narrow oval in shape with a tapered tip. Mature leaves grow to 40-150 mm long and 15-70 mm wide with leaf stems between 15 and 25 mm long. The upper surface of the leaf is dark green, lightly felted with grey or white hairs and prominent veins. The lower leaf surface is covered in distinctive rust or yellow down-like hairs.

Flowers: Flowers are yellow, orange or salmon coloured and have a sweet scent. Individual flowers arranged in groups at the end of a spike about 250 mm long (an inflorescence).

Fruits: Fruits form as small fleshy berries about 2-5 mm in diameter. The fruits are white to begin with, becoming blueish-purple at maturity. The seed-containing fruits are sought after by birds and some animals, helping to spread the plant over great distances.

Seeds: The seeds are an ellipsoid shape, about 1 mm long and are brown in colour. Overseas plants can produce numerous seeds within the pulpy fruits where as plants cultivated in Australia are sterile and no fruit or seeds have been found on eastern Australian plants (Stock and Wild 2002).

Roots: The root system must be robust to support the large, sprawling growth habit of smoke bush.

Smoke bush *Buddleja madagascariensis*

Victorian Alert Weeds

What are Victorian Alert Weeds?

Victorian Alert Weeds are potential weeds of the future. They may pose a serious threat to Victoria's agricultural and natural assets or could affect human health. Some of these weeds are thought to occur in small numbers in Victoria and are still eradicable. Other species are yet to reach Victoria, but present a serious threat if they were to arrive. Weed Spotters help the Department of Primary Industries validate the distribution of these weeds. Weed Spotters are individuals trained to look for and report high priority Weed Alert species in Victoria. They are recruited from the community, government or industry.

Why is this species a Victorian Alert Weed?

Smoke bush is an aggressive sprawling weed that is capable of escaping and rapidly spreading beyond the margins of the garden. Smoke bush is quick to invade both disturbed sites and forested areas. Once established, smoke bush can form dense thickets that overpower and smother the plants in its path. This weed is capable of growing at high altitudes and has the potential to devastate Australia's sensitive natural areas. Having escaped from cultivation in Hawaii, it has become one of their most invasive introduced plants. The presence of smoke bush in Australia is concerning, as the species may become equally damaging here if it spreads. The species is valued as an ornamental for its colourful flowers and wall-forming growth. However, Victorians should be discouraged from planting this aggressive weed. It is vital that the Weed Spotter network plays an active role in monitoring the countryside for this weed. This may assist with the quick identification and treatment of infested sites before the weed gets a foothold in Victoria.

Importance & impacts

Impacts:

Ecosystems, waterways and agriculture:

Smoke bush is a popular ornamental plant; despite posing a serious risk to the Victorian landscape. The species is a very fast grower and can out-compete both native plants and other weed species with its sprawling and smothering growth habit. Major environmental impacts of this weed include a reduction in the number of native plant species and a decline in the amount of habitat available for native animals. In addition, the thicket-like growth of smoke bush may provide cover for pest animals and inhibit pest control efforts. The dense growth may restrict animal movement and access to water and in forests it may hinder human activities such as fishing, hiking, camping and other forest-based ventures. Smoke bush may also be capable of influencing fire frequencies and intensities, forming large thickets and are quick to re-shoot after fire. Where the weed reaches the canopy of forests, Smoke bush may also be capable of influencing fire frequencies and intensities, forming large thickets which can quickly re-shoot after burning.

Social value and health impacts: Several species of *Buddleja* are cultivated for ornamental value or sweet perfume, popular as a butterfly attractant, hence the common name 'butterfly bush' (Conn 1999). However, *B. madagascariensis* is considered to have some toxic properties and consuming parts of the plant may result in adverse impacts on the health of people or animals.

Health hazards: *B. madagascariensis* is listed as a potentially poisonous plant and care should be taken when handling or removing smoke bush (Wagstaff 1996).

Importance:

Weed legislative status:

Buddleja madagascariensis is not declared as a noxious weed in any Australian state or territory.

Significance of the weed in Australia:

Smoke bush has established naturalised populations in Queensland, New South Wales (NSW), Western Australia and South Australia. The weed is proving to be a particular menace in tropical and sub-tropical parts of eastern Australia and is established in areas along the coast from northern Queensland to Bega in southern NSW.

Permitted/prohibited entry into Australia:

Buddleja madagascariensis plants and seed are permitted entry into Australia, subject to certain conditions. For more information see the AQIS ICON import conditions database at www.daffa.gov.au/aqis/import/icon-icd or call 1800 020 504.

Victorian Weed Risk Assessment: Smoke bush is ranked very highly as a risk to Victoria due to its invasive potential and its tendency to dominate neighbouring vegetation. It creates thickets similar to high cost weeds such as blackberry and gorse, and early eradication may prevent smoke bush from becoming a weed menace of the future.

Growth & spread

Reproduction and dispersal: Smoke bush is only known to reproduce vegetatively in Australia (Stock & Wild 2002). However, the species does produce seed elsewhere in the world, which has the potential for widespread dispersal. Animals and birds aid dispersal by breaking off plant stems, which then sprout into new plants. Water may also transport plant parts, aiding dispersal of this weed over longer distances. Human behaviours, particularly the inappropriate disposal of garden waste, have the potential to greatly assist the spread of this weed.

Rate of growth and spread: In warmer climates, smoke bush is capable of becoming highly invasive. The species is a very quick grower and it can out-compete other weeds and native plants. The fact that smoke bush plants have reached and smothered the canopy of rainforests is evidence of their devastating invasive potential (Stock & Wild 2002).

Seed bank/propagule persistence: The viability of the seed bank is unknown. Australian populations are not known to set seed but can readily reproduce from stem segments. Smoke bush can also re-shoot after the aboveground portion of the plant is destroyed by fire.

Origin: Madagascar.

Where it grows: Smoke bush prefers moist, disturbed sites with full sun and subsequently, the species is at its most invasive in tropical and sub-tropical climates. However, smoke bush is fairly tolerant of environmental extremes and may grow in a variety of disturbed and undisturbed habitats including roadsides and waste areas as well as rainforests, mountainous forests and scrubby plains. Smoke bush is a threat to many of Australia's regions because it can tolerate poorer soils and can grow at altitudes ranging from sea level to more than 1,200 metres (PIER 2005; Stock & Wild 2002). Smoke bush does, however, dislike frosts and wet soils and these factors may limit its potential distribution (Stuart 2006).

Growth calendar

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	
Flowering	■								■				
Seeding	■										■		
Germination	■							■					

Notes: Growth calendar is broadly based on behaviour and timing of plant changes, either from overseas populations, or from limited populations in Australia. Actual behaviour of plants may differ, depending on climate and geographical location.

Weedy distribution in Australia and overseas:

Smoke bush prefers moist, disturbed sites with full sun and subsequently, the species is at its most invasive in tropical and sub-tropical climates. However, smoke bush is fairly tolerant of environmental extremes and may grow in a variety of disturbed and undisturbed habitats including roadsides and waste areas as well as rainforests, mountainous forests and scrubby plains. Smoke bush is a threat to many of Australia's regions because it can tolerate poorer soils and can grow at altitudes ranging from sea level to more than 1,200 metres (PIER 2005; Stock & Wild 2002). Smoke bush does, however, dislike frosts and wet soils and these factors may limit its potential distribution (Stuart 2006).

Introductory pathway to Australia:

Given that smoke bush is established across many countries around the world, there is a chance that seed or stem fragments may be transported into Australia. This may be either accidentally; on peoples' clothing, shoes or equipment or intentionally; imported in luggage or through the mail system. Contaminated clothing, shoes, equipment and vehicles may also contribute to the spread of the species from infestations that are already within Australia. Because smoke bush does not set seed in Australia, spread of the weed is likely to be caused by human intervention, through means such as deliberate planting in gardens or the illegal dumping of garden waste.

Choosing alternative species

When choosing an alternative plant, attempt to source local native (indigenous) species from a nursery/garden centre in your area. Advice can also be sought from Sustainable Gardening Australia - a not for profit organisation, promoting responsible plant choices - call (03) 9850 8165 or visit their website at www.sgaonline.org.au.

Further information

about smoke bush can be found on the DPI website at www.dpi.vic.gov.au or check the references listed below. If you suspect you have found *Buddleja madagascariensis*, report it to your local Weed Alert Contact Officer on **136 186**.

References:

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