

## Wild Watsonia

Department of Primary Industries

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### Common and scientific names

Wild watsonia, bulbil watsonia

*Watsonia meriana* (L.) Miller var. *bulbillifera* (J.W. Matthews & L. Bolus) D.A. Cooke

Family Iridaceae (Iris family)

### Origin and distribution

Native to South Africa, wild watsonia was originally introduced to Australia as a garden ornamental. It was considered naturalised in Victoria by 1907 and was spread widely in the 1940s as a fashionable garden plant. It is also a weed in New Zealand and on the Indian Ocean islands of Mauritius and Reunion.

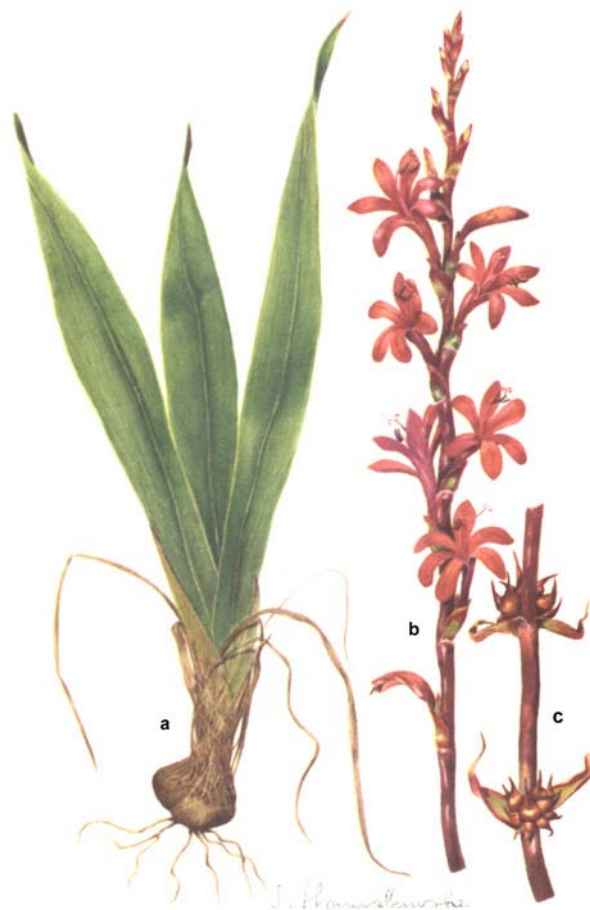
It has a number of undesirable horticultural features and may best be classified as a variety that evolved naturally in an environment subject to human disturbance rather than a cultivar. Fertile plants producing seed are rare in Australia and some authors consider bulbil watsonia to be sterile.

Wild watsonia is found through most of the State except for the north-west, but mainly occurs as an environmental weed in depressions and swampy areas on heavier soils in southern Victoria, particularly in the Melbourne area, Dandenong Ranges, Mornington Peninsula, South and West Gippsland, the central highlands and the Geelong region.

### Description

An erect perennial herb forming large clumps; similar to gladiolus, with strap-like leaves, slender reddish flowering stems 0.5 to 2 m high, pink, orange or red flowers, underground corms and clusters of small corms (known as bulbils or cormils) on the stems. Leaves and flowering heads are produced annually.

Corms and cormils start to grow in late autumn and foliage is produced during the winter. Flowering stems are produced in spring and flowering occurs mainly in November and December. Plants that develop from cormils do not flower in the first year but produce their first corm, and flower in their second or third years. Plants become dormant in late summer and autumn when the foliage and stems die off. The plant reproduces by replacement and multiplication of the underground corms and by cormils.



*Figure 1. Wild watsonia: a. plant before flowering, b. flowering stem, c. lower part of flowering stem showing cormils produced in clusters.*

**Stems** – bearing 10 to 15 flowers on the main axis; straight, erect, rigid, up to 3 cm diameter and 2 m high, often maroon to red in colour (varying seasonally), cylindrical at the base, fluted in the upper section, unbranched or with 6 to 8 short branches; one stem per plant; brown spiky clusters of cormils form at nodes along the stems.

**Leaves** - 20 to 80 cm long, 2 to 5 cm wide, light green, rigid, upright, shaped like the blade of a sword, tough, fibrous, lacking hairs; with a prominent central midrib and numerous smaller parallel veins; growing in clusters of 6 to 10 united at the base and ascending fan-like from the top of the corm. The stem carries small, sheath-like leaves.

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**Flowers** - curved trumpet-shaped, with 6 'petals' (perianth segments) forming a tube in the lower section of the flower; usually orange in colour but varying from brick red, through salmon-red to dull pink, 5 to 8 cm long, 3 to 4 cm in diameter, arranged singly, 2.5 to 4 cm apart, in opposite rows along the upper part of the stem and on side branches; three stamens arranged asymmetrically on one side of the flower; anthers about 10 mm long, cream or purple; perianth lobes (the outer sections of the 'petals') 1.7 to 2.6 cm long, upper lobe less than twice as long as lower and usually about the same length.

**Fruit** - ovoid, woody capsule, 2 to 4 cm long, with three cavities; opening from the apex into 3 valves. Fruit are often not produced in Australia.

**Seeds** - 15-18 mm long, oblong, winged. Rarely produced in Australia.

**Roots** - shallow, fibrous.

**Corms** - up to 8 cm in diameter, shaped like a depressed globe; enclosed in a thick, dark brown, coarsely fibrous outer tunic; usually having a double or single disc-like appendage at the base (the remains of previous seasons' corms). Usually a single new corm (sometimes 2 or 3) forms above the old corm each year. Corms occur within several centimetres of the soil surface.

**Cormils** - up to 2.5 cm long (usually less than 1 cm), oval with a curved beak at the upper end, shining red-brown to dark brown, in clusters of 12 to 16 in the leaf axils of the flowering stems.

### Similar species

Two forms of *Watsonia meriana* occur in Victoria, the common bulbil watsonia (variety *bulbillifera*), described above, and a form reported from Anglesea which is less than 1 m high and never produces bulbils.

Of the approximately 70 species of *Watsonia* in southern Africa and Madagascar four others are naturalised in Victoria:

*Watsonia aletroides* (Burm. f.) Ker Gawl. The upper 'petal' is more than twice as long as the lobes and the flowers are red-orange to purple or pink. Known from roadside vegetation near Benalla.

*Watsonia marginata* (L.f.) Ker Gawl. Distinguished from the other four species naturalised in Victoria by the symmetrical arrangement of the stamens around the style. The flowers are pale pink or lilac. A garden escape at Anglesea, Blackburn and Mornington.

*Watsonia versfeldii* J.W. Mathews & L.Bolus. Has white flowers (occasionally pink, cerise or red). A garden escape on the Mornington Peninsula, South Belgrave and elsewhere.

*Watsonia borbonica* (Pourr.) Goldblatt. Similar to *W. meriana* but the 'petals' are longer (2.8 to 3.5 cm) and are pale pink to magenta in colour. A garden escape naturalised in the South Belgrave area.

Many other *Watsonia* species and their hybrids are cultivated in gardens in Australia.



*Figure 2. Wild watsonia infestation.*

Bulbil watsonia is often confused with montbretia, *Crocsmia X crocosmiiiflora* (Lemoine ex Morren) N.E. Br. and African cornflag, *Chasmanthe floribunda* (Salisb.) N.E. Br., two other weeds in the iris family that are widespread in southern Victoria.

The flowers of both montbretia and African cornflag have only 3 stigmas (*Watsonia* has 6). Montbretia produces stolons (slender creeping stems), has leaves that are only 1 to 2 cm wide and flower stems that are bent alternately in different directions. African cornflag has a straight flower stem, a flower with an upper lobe that is much longer than the lower petals and leaves that usually exceed 80 cm in length.

**All land managers have a responsibility to control weeds on their property.**

## The problem

Wild watsonia has naturalised widely in Victoria as a garden escape. It is mainly an environmental weed of moist sites, but can flourish in well-drained areas, and is a particular problem in small areas of remnant vegetation. The production of very large numbers of stem cormils has enabled it to become a very successful weed, forming dense stands which exclude other vegetation. Corms and cormils can remain dormant in the soil for a considerable period. It has been reported that only about 30% of the corms produce above-ground parts each year.

The plant is suspected of being poisonous to livestock, but animals do not graze large plants and are apparently unaffected by consumption of young shoots. Wild watsonia impoverishes soil and crowds out desirable pasture plants. It can cause serious loss of production but rarely persists in well managed paddocks and cultivated areas and is of little importance as an agricultural weed. It can damage and impede the use of farm implements and the dead top-growth can create fire hazards.

## Dispersal

Cormils fall to the ground when the top growth dies at the end of the season. They can be widely scattered and are efficiently spread by moving water. Cormils are also spread by slashing equipment, farm implements, vehicles, birds, rabbits and stock and can be dispersed in hay, silage and grain. Corms and cormils are spread by movement of contaminated soil, particularly by graders and earth moving equipment along railway lines and roads, and by farm implements. Most new infestations probably originate from dumped garden refuse or by spread of cormils in soil and on mowers and slashing equipment.

## Management program

***Some control methods described in this note are only effective if used in combination with other control options as part of a long-term management program.***

***If used in isolation, these methods do not effectively destroy the plant, allowing it to re-shoot or continue to grow. Authorised officers from DPI or DSE may direct landowners to undertake specific control activities to ensure methods are used that are capable of destroying plants and preventing their spread.***

***Where directed to do so, landowners must use the method or methods as directed by the authorised officer. In most cases the landowner will be able to choose from a variety of options appropriate for use in their particular situation.***

Long term management programs must be initiated in order to effectively control wild watsonia. In planning these programs integrated management strategies will achieve the best results. Control measures need to be repeatedly applied for several years. Early treatment of

new infestations should be a priority.

Control in the first instance requires the elimination of cormil formation and seeding to prevent the spread of the infestation. Plants that cannot be destroyed should have their stems removed before cormils are dispersed. Since a large proportion of plants do not produce above ground parts in a particular year, control activities may appear to be ineffective after the first year. Chemical control in natural areas may be best undertaken at a time before a planned ecological or regeneration burn. The burn will stimulate germination and regrowth of indigenous competitive species. Control activities without follow-up burning may lead to replacement of watsonia with other weeds.

### **Limiting Dispersal**

Refuse containing wild watsonia corms or cormils should be burned or buried deeply in landfill rubbish tips. Areas containing wild watsonia should not be harvested for fodder. Road graders and other earthmoving equipment should be kept out of infestations, or cleaned after contamination to remove corms and cormils. Slashing and mowing equipment should be cleaned after use.

### **Manual Control**

Plants may be hand pulled to remove the corm in winter and spring when the ground is soft and wet. Unless the soil is suitably soft the top growth will be removed, leaving the corm in the ground. Isolated grubbed plants should not be left on the ground but should be placed so that they cannot re-root. Hand tools suitable for removal of watsonia corms are available.

All flowering stems of plants which cannot be killed should be removed by cutting with shears or hedge clippers after the infestation has finished flowering and before the cormels are mature. Early cutting of flowering stems may result in the formation of new stems. Cut material and whole plants should be collected and heaped in an area where any new growth can be killed, or burned.

### **Mechanical**

Heavy infestations on agricultural land can be rotary hoed or ploughed deeply in late autumn and the corms raked from the surface and removed. Ploughing and corm removal should be repeated once or twice during the winter when new growth appears. A competitive pasture or crop should then be sown.

Mowing and slashing will destroy only the top growth but can be employed to limit the production of cormils in late spring after flowering has finished.

### **Pasture Management**

Watsonia can be controlled by grazing. Livestock eat the young growth. Pigs eat the corms and can be used in an eradication program.

### **Chemical Information**

The Australian Pesticides & Veterinary Medicine

**Weeds spread in many ways – often hitching a ride on vehicles and machinery. Keep yours clean.**

Authority (APVMA) is responsible for the assessment and registration of agricultural and veterinary chemicals in Australia. As chemical products are registered on a daily basis and renewal of these registrations are undertaken each financial year, there is much change in the registration status of products each year. The APVMA information is available at: <http://www.apvma.gov.au/>

The Chemical Standards Branch (CSB) of the Department of Primary Industries provides information on agricultural chemicals registered in Victoria and their uses. Enquiries will be referred through the Customer Service Centre on 136 186. Information can also be obtained by visiting the CSB website: [www.dpi.vic.gov.au/chemicalstandards](http://www.dpi.vic.gov.au/chemicalstandards)

**Under Victorian legislation there are controls on the use of agricultural chemicals. It is the responsibility of the user to be familiar with these controls. These responsibilities are outlined in Agriculture Note AG0520: "Responsible use and handling of farm chemicals".**

Farm chemicals are registered for specific uses. Each chemical has a 'product label', which documents the approved use and the approved rate of use within each State of Australia. This label is important in determining the appropriateness of chemical use.

**Choose only products registered for use on wild watsonia in your particular situation. Read the product label carefully and follow all label instructions.**

Your chemical retailers can provide information on registered chemical products that are available in their store. They can also supply a 'material safety data sheet' which outlines the health and safety issues associated with use of a product.

**Legal use of some restricted chemicals requires the user to possess an Agricultural Chemical User Permit (ACUP). Other chemicals have restrictions on their use in Agricultural Chemical Control Areas (ACCAs).**

Information on ACUPs, ACCAs and other chemical information can be found at the website: <http://www.dpi.vic.gov.au/chemicalstandards>

Chemical control is most effective when the plant is actively growing and is generally timed to coincide with the stage when the stem is elongating or the stage when the flowering head has developed but flowering has not commenced. Control with herbicides is usually undertaken in late winter (August) to mid spring (October). Recommended surfactants should be used to ensure thorough wetting of the foliage. Herbicides can be applied by spraying or wiping. Spraying is more suitable for dense infestations containing fewer non-target plants. Spot spraying may be undertaken with a knapsack spray unit. Wiping involves smearing a small amount of herbicide onto a leaf using a special applicator or weed wand. Follow-up chemical treatment will generally be necessary for a number of years.

## Further advice

- Contact your local landcare or friends group for further assistance and advice.
- Call the DPI/DSE Customer Service Centre on 136 186.
- Visit the DPI website at: <http://www.dpi.vic.gov.au> and the Weeds Australia website at: <http://www.weeds.org.au>

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**The advice contained in this publication is intended as a source of information only. Always read the label before using any of the products mentioned. The State of Victoria and its officers do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication.**

**Early treatment of new infestations will give you the best value for your weed control dollar.**