from one site to another. Operators should also report to the overseer areas where they have been operating and noticed watsonia in order that it may be logged for spraying that year.

Road works
When road work is undertaken and spoil is removed along roadsides and stockpiled in old gravel pits or degraded areas to assist with rehabilitation, it is important that spoil be sprayed twice during the following twelve months with a herbicide such as Roundup to ensure a minimal risk of the spread of watsonia and other exotic weeds.

Community awareness
A program to inform landholders and residents of the need to prevent the spread of watsonia and other exotic weeds along roadsides, and the importance of preserving remnant roadside vegetation needs to be introduced by the way of articles in the local newspaper and displays of specimens mounted at the Shire Office and other appropriate venues.

Conclusion
To conclude this address, it should be noted that the Shire of Plantagenet has adopted in principle a Draft Environmental Policy which at present is being revised with input from CALM, Department of Agriculture, Department of Planning and Urban Development and the Albany Waterways Management Authority. Sections of this policy deal specifically with Linear Reserves and Rural Land Management. When it is formally adopted by Council, the Environmental Policy will provide the framework to guide the Shire in dealing with environmental issues which will need to be addressed in conjunction with all developments in the years to come.

Practical experience with control of pretty watsonia (*Watsonia versfeldii)*

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Summary
***Watsonia versfeldii* is a herbaceous perennial plant with wind-dispersed seeds. It competes vigorously with native vegetation, eventually displacing it. Difficulty with management of this plant within a remnant of native vegetation in the Helena Valley is discussed and successful control by hand painting with a "watsonia glove" is described.**

Introduction
Watsonia versfeldii , 'pretty watsonia', is a handsome plant with 2 m high flowering spikes of white, pink, crimson and lilac and was introduced from South Africa as a garden plant. It is a tufted, winter-growing herbaceous perennial plant with wind-dispersed seeds. When the opportunity arises, the plant competes vigorously with native vegetation, eventually displacing it.

The introduction of *W. versfeldii* into the Helena Valley can be traced to a nurseryman, Mr C. Rhodes, who, in the early 1920s, developed a block on Clayton Road to supply cut flowers to Perth florists. His principal crop was roses but he also put in rows of perennials, one of which was *W. versfeldii.* He stated that bunches sold well, as the plant is long-stemmed, attractive, and lasts well in water (C. Rhodes 1993 personal communication).

The plant is now common along the lower Helena River, forming dense stands in areas of good soil with a fairly high moisture content such as alluvium or "Wandoo clay". It will invade undisturbed bushland, but spreads most rapidly after disturbances such as track and firebreak maintenance and frequent fires.

Life history
Clumps of *W. versfeldii* increase in size as a result of vegetative replication by the corms. New clumps arise after germination of seeds. The dense clumps die off in summer, reshooting with the first autumn rains.

The flowers are produced in November and have a faint sweet scent which attracts bees and other insects and birds such as honeyeaters. Usually about 10 capsules are set per flowering stem, with an average of 20 seeds per capsule. The seeds have a papery wing and can be blown at least 10 m, but it is more usual for them to fall within a 3 m radius of the parent plant. The seeds germinate with the first rains and will flower after five years' growth.

Predation and disease
With the exception of fallen seeds, which are taken by ants, I have seen no evidence of predation by either vertebrates or invertebrates, nor have I seen any evidence of fungal disease. The plants thus have no natural checks on their growth.

Fire
The aerial parts of the plant dry off during summer, annually creating a high fire threat. If ignited, they burn very hot. When green the plants do not burn at all well and will, in fact, stop the spread of a fire.

Summer fire destroys the dead aboveground portion of the plants, but the corms survive and shoot with the rains. The plants respond to the open conditions and increased nutrients after a fire by flowering prolifically, and the germination rate of seedlings in the following year is especially high. Frequent fires thus advantage the watsonia, and they can thrive and increase even under annual burning regimes.

Control
Watsonia versfeldii is a vigorous competitor for space and if left unchecked will displace native vegetation, suppress regeneration and form a continuous ground layer. It forms large quantities of easily ignitable fuel and therefore increases fire hazard. It should be exterminated wherever possible.

The plant can be controlled by herbicide or by physically removing whole plants. The very minimum of control is the slowing of spread by removing flowering stems before they set seed.

Herbicide
Knockdown herbicides such as glyphosate (e.g. Roundup®) are most effective when the plant is growing rapidly, after fire, or when the flowering spikes are just becoming visible. Applications may be needed in a second year.

Selective herbicides for grasses such as fluazifop (e.g. Fusilade®) are not effective at the rates recommended to control Veldt Grass (*Ehrharta calycina*).

If the watsonia is growing among native plants, the herbicide may be painted on using a "watsonia glove" (Figure 1). This is time-consuming but effective.

Where herbicides are used, the corms will remain, undecayed, in the soil for at least five years, and their physical presence will inhibit regeneration by native species. Thus they should be removed if possible.

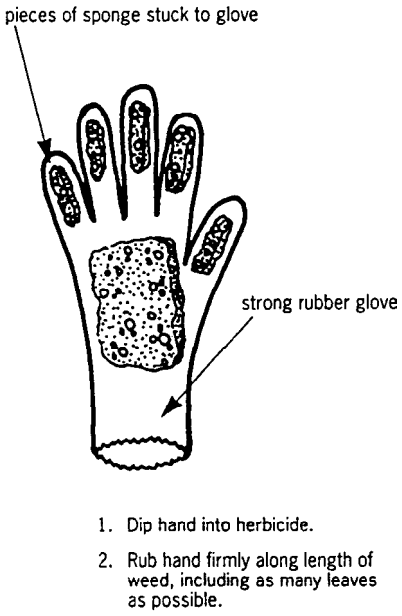

Figure 1. Watsonia glove.

Manual pulling

The best method of control for small infestations is to physically remove the whole plant. Where plants occur in open areas this is relatively easy, especially if it is done immediately after heavy rains have saturated the soil. The corms must be destroyed, as they will shoot again if merely discarded. Bonfires must be carefully supervised and thoroughly burnt as corms can survive incomplete burning.

Seeds often fall and subsequently germinate in the midst of desirable shrubs, such as *Hibbertia hypericoides*. Pulling them up may damage the shrub. Painting the leaves with herbicide may be the preferred treatment in this situation.

After a bushfire, the opportunity should be taken to attack the watsonia which will be highly visible as it resprouts immediately after the fire. Within a week of the fire, broadscale herbicide may be used with little damage to the native vegetation, which is slower to begin new growth. If, however, new growth has appeared, treatment of individual watsonia plants will be required, but they are readily accessible and a whole area may be cleaned up with the certainty that nothing has been missed.

Once this has been done, a careful check every July–August will be needed to eliminate seedlings that have germinated from windblown seed.

Outcomes from the Watsonia Workshop

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The afternoon session was devoted to a workshop**.** Michael Elliott of the Community Landcare Branch of the Department of Agriculture was the facilitator for about 50 participants. The workshop allowed all those present to contribute their own ideas and experiences about watsonia, and to learn directly from others in the group. On a broader scale it identified the perceived magnitude of the watsonia problem, possible control strategies, and made general recommendations to initiate appropriate actions towards achieving identified goals.

Participants were divided into four groups each comprising a mixture of people including professional scientists, representatives from shire councils, various State government agencies, community conservation groups, bush regenerators, and others. Each group, was asked to address four questions.

The questions were:

i. If the current trends identified today continue, what will the future scenario be in relation to watsonia?
ii. What would you like the future to look like in relation to watsonia?
iii. What strategies are required to take us from our current situation to the future position we have identified?
iv. What recommendations would this group like to put forward and to whom?

Each recorded their findings on butchers paper and presented a summary to all participants at the end of the session.

Many common findings emerged although there was some variety in the approach used. This paper presents a brief summary of the outcomes from each question. A record of the findings made by each group is available on request from the editors.

Summary of answers

Q1. If the current trends continue today, what will the future scenario be in relation to watsonia?

Each group had a similar view that watsonia infestations would spread displacing native vegetation especially along roadsides, railway reserves, and watercourses resulting in loss of bushland habitat, loss of species, invasion of new habitats, increased summer fire hazard, and loss in landscape amenity value and tourism value. There is also the possibility of new hybrids forming and new horticultural species escaping into bushland. Tolerance to herbicides might become a problem. After successful control of watsonia, there will be increased difficulty in regeneration of local species due to a loss of the natural seed bank.

As infestations spread into new and inaccessible habitats, costs and difficulty of control will both increase. All groups agreed that there was no hope of the watsonia situation improving unaided and every possibility of it getting worse. There is likely to be an increased community recognition of the damage to bushland caused by environmental weeds in general.

Q2. What would you like the future to look like in relation to watsonia?

All groups wanted to see effective control of watsonia and ultimately eradication from bushland areas and public areas of WA. Two of the groups wanted to see watsonia totally eradicated from the State. All agreed there will be a need to regenerate bushland areas previously infested with local native species, not allowing other weed species to colonize.

Declaration of watsonia as an 'environmental weed' and all local authorities declaring watsonia as a 'pest plant' under existing provisions were also part of the vision.

An increased public awareness and understanding of the problem, banning of nursery sales of watsonia, and effective control measures are all needed in the future.

Q3. What strategies are required to take us from our current situation to the future position we have identified?

Many strategies were similarly identified by each group and these fell under the following headings:

i. Education

Raising of public awareness amongst landholders, all relevant government agencies, and local Shires so that watsonia is a recognized weed to be controlled. An information brochure illustrating *Watsonia, Chasmanthe* and