A guide for skeleton weed management and control

Department of Agriculture and Food, Western Australia
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A Guide for Skeleton Weed Management and Control

• Use clean, certified seed
• Allow only clean equipment or vehicles onto your property
• Only purchase fodder and organic fertilizers from a reliable source
• Accept new sheep in a shorn state only
• Maintain stock in a holding paddock for at least 24 hours after arrival and monitor this area
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Summer search and treatment

The landholder is required to locate and treat all skeleton weed plants to prevent viable seed set in summer. The minimum requirements are:

- Paddocks infested in previous summer/winter must be searched in accordance with the ‘Full Paddock Search’ protocol. Assistance towards the cost of searching is available for qualifying paddocks.
- Infestations must be marked (e.g. with water-filled drums) and located on a paddock map to facilitate inspection/treatment. Markers should be placed in a forty metre square around isolated infestations or they should mark a twenty metre buffer around clumps of plants.
- Infestations must be treated in early summer to prevent seed set. For treatment recommendation, see Table 3.
- Where paddock infestations are widely scattered the whole paddock is to be treated so that seed-set is controlled in undetected plants. All infested squares must be marked so that accurate records of the infestation are kept.
- A farm/paddock map must be provided clearly indicating the location of infestations.
- Previously infested paddocks, and paddocks adjoining infested paddocks, must be searched using the ‘Surveillance Search’ protocol.
- Searching around infested squares must be completed in a timely manner.
- All paddock searching is recommended to be completed by 31 December 2006 and must be completed by 31 January 2007.
- Landholder must maintain a record of searching and treatments in a Skeleton Weed-Paddock Record Book.
- Copy of record and property/paddock map with locations of infestations must be provided to Department of Agriculture and Food by 15 February 2007.

Compliance guidelines for landholders on infested properties

The landholder is to prevent the active movement of seed and root fragments from the property

The landholder is required to prevent the active movement of skeleton weed from the property by ensuring that the risk of contaminated produce and equipment moving off the property is minimised. Grain movements are generally extremely low risk. The relevant protocols must be observed for the movement of machinery, livestock and produce.

The landholder is to prevent skeleton weed setting viable seeds

Strategies

- Improve landholders’ skills in finding and eradicating of skeleton weed.
- Widely publicise descriptions and pictures of skeleton weed to help landholders identify infestations.
- Inform landholders about the techniques available for the management and eradication of skeleton weed.
- Encourage local grower group (Local Action Groups) to participate in cooperative surveillance and reporting of infestations.
- Local Action Groups to assist in the management and eradication of skeleton weed in their local areas.
- Implement practical compliance regimes in affected areas.
- Provide landholders with incentives to report infestations.
- Provision of winter treatments where landholders are compliant with program requirements.

Regulation

- Declaration to remain P1/P2 Whole of State.
- Consultation with Skeleton Weed Committee and landholders to develop an appropriate and practical compliance regime to support declarations.
- Implementation of the agreed compliance regime.
- Publication and enforcement of new regulations relating to the carrying out of searching and maintaining paddock records.
- New Infested properties will not be placed in quarantine.
A fully equipped skeleton weed search rig

- Audit inspections of records and searched paddocks will be carried out in January, February, and March 2007.

* Paddocks with two clean searches must be searched following the ‘full search’ protocol to qualify for release from ‘infested’ status. Search will be audited by Department.

**Winter eradication treatment**

All infested squares and individual plants are to be treated. The costs associated with winter treatment will be borne by the program, except where a Biosecurity officer directs that a whole paddock treatment using Lontrel is preferred. Contractors will be engaged to ensure coordinated, efficient application of Tordon™ 75D or Grazon™.

- Infested squares must not be cultivated or worked through during seeding in 2007.
- Treatments must be recorded and that record provided to a Biosecurity officer when requested.
- Audit inspections will be carried out on selected infested sites during September and October 2006.

**Landholder compliance with protocols**

Failure to keep the minimum required records or failure to carry out the minimum approved treatments of infestations will result in the issuing of a direction under Section 50 of the Agriculture and Related Resources Protection Act 1976 requiring the work to be completed by the landholder/lessee within a specified time frame (usually 7 days).

Failure to comply with a Section 50 Notice will result in the work being carried out under Section 52 of the Act. Full costs of this work will be recovered from the landholder/lessee.

Prosecution will be considered in situations where there is clear evidence that a landholder has been aware of an infestation, and of their responsibilities concerning it, and has made no effort to comply with required search and treatment protocols.

It is intended that audits of all infested properties will occur at some time. High risk properties and those randomly selected may receive several audit inspections.

**Landholder responsibilities (infested properties)**

- All infestations are to be treated in summer and winter according to Table 3.
- Landholder must provide a full record of searching, plus summer and winter treatments when requested.
- Paddocks with two clean searches must be searched following the ‘full search’ protocol to qualify for release from ‘infested’ status. Search will be audited by Department. To qualify for release, at least two of the clean searches must have been done in a crop year. If no cropping occurs then five (5) clean searches must be completed in sequence at yearly intervals.
- All paddocks should be monitored throughout the summer and autumn to increase the chance of detecting plants that emerge or become more evident in the weeks following the full search and be treated appropriately.

All infestations will be mapped, using d-GPS equipment, by Local Action Group Coordinator or Department staff.

The landholder is to cooperate with the Local Action Group, the Department and spraying contractor to ensure that infestations are treated during the autumn or winter with Tordon™ 75D or Grazon™ for eradication.
Landholder responsibilities (non-infested properties)

- Ensure ability to identify Skeleton weed plants at various stages of development.
- Maintain vigilance for Skeleton weed plants during normal operations and particularly at harvest time.
- Mark and report any suspected Skeleton weed plants found to nearest Department of Agriculture and Food office.
- Follow required search and treatment protocols once identification is confirmed by Departmental staff.

Searching protocols for landholders

The protocols for **Full Paddock Searches** are described on page 18 of the **Skeleton Weed Pocket Guide**

- Cut and bag flowering plants (if more than a few plants summer treat according to Table 3).
- When paddock search is completed, move to exit point and clean-down vehicle.
- Where flowering plants have been found in paddock, it is vital that vehicle is thoroughly cleaned.
- Notify local Biosecurity officer.
- Complete Skeleton Weed Paddock Records.

The protocols for **Surveillance Searches** are described on page 19 of the **Skeleton Weed Pocket Guide**

- Take a farm/paddock map and pen with you to accurately mark finds as they are found.
- Search speed should range from 10 to 20 km/h depending on stubble density and pasture levels.
- Use only elevated cab, diesel-powered vehicles to reduce fire risk in paddocks.

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If plants are found

- Stop and search immediate area on foot.
- Clearly mark all plants found with drums, spears and/or steel posts. Markers should be placed in a forty metre square around isolated infestations or they should mark a twenty metre buffer around clumps of plants.
- Clearly mark infestation on paddock map.
- Record plant growth stage i.e, rosette, flowering, etc.

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**Full search protocol**

All Code 1 paddocks and Code 3 paddocks due for release from the infested list

- 1 person in a vehicle, maximum swath of 5m
- 2 people in a vehicle, maximum swath of 15m
- 3 people plus driver using search boom, maximum swath of 20m

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**Surveillance search protocol**

- 1 person in a vehicle, maximum swath of 20m
- 2 people in a vehicle, maximum swath of 30m
- 3 people plus driver using search boom, maximum swath of 40m

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Important things to remember before you start any Full or Surveillance search:

- Searching while harvesting or spraying does not constitute a skeleton weed search.
- All paddocks should be livestock-free at least six weeks before searching.
- Always be prepared to find skeleton weed. Ensure all vehicles used for searching are fully equipped with flagging tape, star pickets and a post driver or drums to mark finds.

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If plants are found

- Follow the steps listed above in the Full Paddock Search section.
- Complete Skeleton Weed Paddock Records.

All paddocks should be monitored throughout the summer and autumn to increase the chance of detecting plants that emerge or become more evident in the weeks following the full search and be treated appropriately.
Non-compliance management procedure

Failing to report skeleton weed to the Department of Agriculture and Food.

- For large infestations, prosecution may result.
- All treatment costs will be recovered from landholder.

Failing to keep the minimum required records and property maps of searching and treatments.

Failing to provide complete search and treatment records to an inspector by the due dates.

Failing to locate and treat all skeleton weed plants in summer.

- Section 50 Notice issued requiring landholder to complete searching, treatment and recording requirements and submit records to the inspector within 7 days.
- Failure to comply with Section 50 will result in searching, treatment and recording being arranged by the Department of Agriculture and Food at the landholder’s expense.
- The cost of searching of infested and adjoining paddocks and treatment will be set according to contract Fees and Charges rates for 2006/07.

Failing to mark infestations in paddocks.

- Section 50 Notice issued requiring landholder to complete marking and recording requirements and submit records to the inspector within 7 days.
- Failure to comply with Section 50 will result in marking and recording being arranged by the Department of Agriculture and Food at the landholder’s expense.
- The cost of marking infestations will be according to contract Fees and Charges rates for 2006/07.

Failing to treat known infestations to prevent viable seed set in summer within the required timeframe.

Failing to assist with treatment of infested areas in winter with Tordon™ 75D /Grazon™.

- Section 50 Notice issued requiring landholder to complete the minimum treatment requirements and submit records to the inspector within 7 days.
- Failure to comply with Section 50 will result in treatment being arranged by the Department of Agriculture and Food at the landholder’s expense.
- The cost of treatment will be set according to the contract Fees and Charges rates for 2006/07. The cost per hectare will be dependent on the chemicals used and the cost of contract application.

Working through known infested areas where paddocks have not had an approved Lontrel treatment.

- Gather evidence for prosecution under Section 51 of ARRPA.

Failure to prevent the active movement of skeleton weed from the property by not ensuring that the risk of skeleton weed contaminated produce and equipment moving off the property is minimised.

- Gather evidence for prosecution under Section 51 of ARRPA.

Costs of chemical treatments for skeleton weed infestations 2006-07

The Skeleton Weed Program does not provide funding for the treatment of skeleton weed infestations in summer (this will be a landholder responsibility).

Winter treatments with Tordon™ 75D /Grazon™ or approved equivalent will be paid for by the Program where the landholder has found and reported the infestation.

Definitions:

‘Approved treatments’

Treatments must be in accordance with the recommendations as outlined in Table 3.

‘Winter treatments’

Where the landholder reports the infestation the program will pay for the winter eradication treatment with Tordon™ “75D /Grazon™” or approved equivalent except in cases where the infested area exceeds 10% of the total area of the infested paddock or a discretely worked area within the paddock.

Application of Tordon™ “75D/Grazon™” or approved equivalent will be by Department accredited spraying contractors or by the Department of Agriculture and Food.

In situations where the infested area exceeds 10% of the paddock or discretely worked area then the landholder is responsible for the cost and operation of treating the infestation in accordance with Table 3. This practice is in the best financial interests of the landholder as the whole paddock can be cropped.

The area of infestation will be reduced for treatment with Tordon™ “75D/Grazon™” or approved equivalent in the following year. This method has been very successful where growers have followed the relevant herbicide application recommendations.

- This provision applies only to landholders who report skeleton weed infestations to the Department and where they have fully complied with all requirements of the Program as per ‘Landholder Compliance Requirements’.
- Treatments will be audited.
Response to new skeleton weed finds 2006/07

Response to new property finds.
This policy refers to any new infestation, whether it is a new farm or a new paddock.

Landholder responsibility
The landholder must:
• Complete timely treatment of the plants to prevent viable seed production.
• Report new finds to the nominated Department of Agriculture and Food office in a timely manner with name, property details and telephone number.
• Comply with skeleton weed searching, treatment and recording requirements.
• Find, report, contain and eradicate skeleton weed according to Table 3.

Department responsibility
• Reports will be confirmed within three working days.
• Confirmed reports will be recorded on the Skeleton Weed Database.
• The landholder will be contacted to discuss the find, further searching requirements and to confirm treatment has been carried out.
• Where the find is on a new property, Department will visit and issue landholder, within five working days, with a Skeleton Weed Information Package outlining landholder requirements, Skeleton Weed Best Practice Management Guidelines, Skeleton Weed Paddock Record Book and contact details of responsible District Officer.
• Request landholder to notify neighbours within five working days (preferably sooner) and advise them to carry out surveillance searching if appropriate.
• Assess the need to carry out extra surveillance on nearby properties.
• If a neighbour is directly adjacent to infested paddock then provide them with paddock record book and information package and advise that surveillance searching at least must be done on paddock adjacent to neighbour’s infestation.
• The emphasis will be on the detection of new property infestations. Once an infestation is detected on a new property, further detection of skeleton weed and other management responsibilities will be immediately handed over to the landholder so that resources can be freed up to carry out surveillance searching on other properties.
• In all cases, irrespective of whether skeleton weed is found or not, the results of the surveillance searching will be communicated to the relevant landholder, as soon as practicable following completion.

All landholders should be vigilant and carry out surveillance searching for skeleton weed. Those landholders in areas with skeleton weed should carry out regular surveillance searching.

Skeleton weed local action groups
The Skeleton Weed Committee will continue to foster greater local group involvement in detection and eradication of skeleton weed infestations. They will also help landholders and Local Action Groups in preventing the spread of skeleton weed by:
• Helping to form more Local Action Groups through the Skeleton Weed Development Officer;
• Promoting landholder responsibility for detecting, reporting and treating skeleton weed;
• Receiving and responding to feedback from grain growers.

Local Action Groups should
• Tell farmers about the locations of known skeleton weed infestations;
• Discuss management and eradication techniques;
• Share knowledge on the success/failure of alternative management techniques for skeleton weed;
• Coordinate searching where appropriate;
• Discuss issues and provide information and recommendations on their future program to the Skeleton Weed Committee;
• Provide input into management of local non-compliance issues;
• Formulate a local/regional strategy to deal with skeleton weed within the framework of the statewide program.
Skeleton Weed Program
Report to Graingrowers
2005 - 2006

Foreword

The Skeleton Weed Committee consists of nine wheat growers from areas affected by skeleton weed, who meet regularly to oversee Program activities, and to develop a budget and operational plan. The Committee receives regular reports on skeleton weed activities from the fourteen Local Action Groups (LAGs) and the Department of Agriculture and Food (DAFWA).

During 2005-06 significant weed infestation reductions in several areas of the wheatbelt and in a number of cases properties are down to single plant infestations.

We believe these gains are due to a number of factors; foremost has been the dedication of farmers and the active participation of the LAGs. The groups have taken on the responsibility of planning and coordinating local search programs and spray operations.

The Committee has made funds available to the LAGs to enable these tasks to be carried out. In some cases, LAGs have been able to employ a person to coordinate the local skeleton weed activities. Although DAFWA staff will still oversee the management of the skeleton program, it has freed-up Department staff to undertake more random and targeted surveillance.

During 2005-06 the Department carried out surveillance searching on previously uninfested areas, but was unable to meet this year’s target due to significant summer rains that limited access to paddocks in some areas. The Committee strongly supports surveillance searching in high risk areas because it leads to the identification and eradication of new skeleton weed infestations.

While the Committee is encouraged by these successes, continued support and vigilance from grain growers is required. All growers are encouraged to support the Program and become involved with their Local Action Group.

During the year, research continued into investigating better chemical options and techniques that will increase control effectiveness and reduce the cost of winter spraying.

Rex Edmondson
Chairman Skeleton Weed Committee

Skeleton Weed Committee

Table 1

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of props Infested</th>
<th>Area Infested at start of season (ha)</th>
<th>Area Searched (ha)</th>
<th>No. New Finds</th>
<th>No. Props Released</th>
<th>No of Props Infested at end of season</th>
<th>Program Cost ($)</th>
<th>Levy (Cents per tonne)</th>
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<tr>
<td>97/98</td>
<td>497</td>
<td>615</td>
<td>103,000</td>
<td>23</td>
<td>18</td>
<td>502</td>
<td>2,028,000</td>
<td>15</td>
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<tr>
<td>98/99</td>
<td>530</td>
<td>746</td>
<td>112,000</td>
<td>41</td>
<td>31</td>
<td>540</td>
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<td>99/00</td>
<td>548</td>
<td>1,453</td>
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<td>31</td>
<td>571</td>
<td>2,767,000</td>
<td>15</td>
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<tr>
<td>00/01</td>
<td>597</td>
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<td>132,000</td>
<td>76</td>
<td>27</td>
<td>646</td>
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<td>01/02</td>
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<td>128,000</td>
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<td>734</td>
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<td>*02/03</td>
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<td>92</td>
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<td>03/04</td>
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<td>53</td>
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<td>390,000</td>
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<td>53</td>
<td>785</td>
<td>3,347,000</td>
<td>35</td>
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The significant jump in area is due to the forming of the skeleton Weed Committee and the Local Action Groups

Recent improvements

• Landholders have continued to assume greater responsibility for the detection, reporting and treatment of skeleton weed, embracing changes introduced in 2002.

• Affected growers continue to take greater responsibility for the eradication of the weed on their properties.

• Registration has been approved for a more cost effective winter treatment of infestations. This has reduced the cost of this activity by approximately 30 – 40 %.
Program milestones
As in the 2004-2005 season, the Program provided financial assistance to the owners of infested properties for carrying out searching in Code 1 paddocks and of new finds reported to the Department. For 2005-06 a cut-off date of 31 March 2006 for assistance payments was implemented and just over $1.3 million was paid.

Landholders searched more than 328,000 hectares during the 2005-06 summer on 775 properties, while Department of Agriculture and Food staff searched a further 62,000 ha on 233 properties as part of active surveillance of ‘clean’ properties and checks on recently released paddocks. Summer rainfall in some areas restricted the area searched.

Landholders reported 45 new skeleton weed infested properties, while Department of Agriculture and Food staff reported 18 new infested properties, resulting in a total of 63 new infested properties (Table 1). Departmental staff worked to remove properties from the infested list and skeleton weed was eradicated on 53 properties in 2005-06 making the total number of infested properties 785 at the end of May 2006.

Over 1701 ha was marked and treated during the 2005-06 summer and will be treated again during winter 2006 to ensure effective control.

The cost of the 2005-2006 Program as at 30 June was $3,361,500, much less than the budgeted $4 million. Lower than expected chemical requirements and search assistance payments contributed to the savings.

How is your money spent?

Figure 1: Expenditure

The total cost of the 2005-06 operations of the Skeleton Weed Program was $3.36 million. Of this sum, the Department of Agriculture and Food has contributed $100,000. In addition to this the Department contributed $422,000 in other support for the Program during the year in the form of staff overhead costs and financial and operational management.

About $2.2 million of this expenditure was allocated to landholder support, in the form of search assistance, funding of Local Action Groups and winter herbicide treatments.

A further $1.17 million was directed to Program support activities such as research, education, regulation and surveillance.

Table 2 Program Summary

<table>
<thead>
<tr>
<th>Revenue</th>
<th>$7,944,749</th>
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<tr>
<td>SWETF closing balance at 30 June 2005</td>
<td>$3,359,749</td>
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<tr>
<td>Levy funds collected at 35 cents per tonne on 12.5 million tonne crop</td>
<td>$4,375,000</td>
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<tr>
<td>State government cash commitment</td>
<td>$100,000</td>
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<tr>
<td>Other income including interest</td>
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<tr>
<td>Revenue total</td>
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<table>
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<tr>
<th>Expenditure</th>
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<td>Program support activities</td>
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</tr>
<tr>
<td>Landholder audit and compliance</td>
<td>$400,000</td>
</tr>
<tr>
<td>Education and awareness</td>
<td>$300,000</td>
</tr>
<tr>
<td>Targeted surveillance searching (inc metro area)</td>
<td>$200,000</td>
</tr>
<tr>
<td>Response to new finds</td>
<td>$100,000</td>
</tr>
<tr>
<td>Field research</td>
<td>$150,000</td>
</tr>
<tr>
<td>Program support total</td>
<td>$1,170,000</td>
</tr>
</tbody>
</table>

| Direct landholder support             | $2,190,000 |
| Winter spraying contracts             | $100,000   |
| Local group support                   | $290,000   |
| Provision for landholder searching subsidies | $1,340,000 |
| Infested property support activities  | $260,000   |
| Tordon™ supply                        | $200,000   |
| Landholder support total              | $2,190,000 |

| Program Budgeted Expenditure 2005/2006 | $3,360,000 |
| Fund Balance at 30 June 2006           | $4,584,749 |
**Trends**

The Program has provided significant benefits to holders of both infested and uninfested properties during the past 30 years of operation. Without the eradication program, skeleton weed would now be widely established throughout the wheatbelt.

Over the years, operations have been adapted to provide a program which provides the best value for the money invested and it is likely that the Program will continue in its current format for some time. The current Program has given greater ownership and flexibility to landholders with infested properties, and has freed up Department staff to concentrate on the management of skeleton weed within allocated areas and to undertake targeted and random surveillance.

Results reflect a positive trend towards slowing the spread of skeleton weed, particularly in areas where skeleton weed is prevalent.

Only one new find was recorded in the two most heavily infested shires – Narembeen and Yilgarn – while a total of nine properties were removed from the infested list in these shires. This indicates that the infestation levels in these shires may have stabilised and could possibly be starting to decline.

The greatest increase in new properties was recorded in shires that have fewer infested properties. This trend is likely to continue with the further development of LAGs and greater landholder awareness in these shires and targeted surveillance by Department staff.

**Area searching**

The total area searched in 2005-06 (390,000 ha) was down considerably (23.7%) from 2004-05 (511,000 ha) (see Figure 2)

- 50,000 ha less Code 1 area searched
- 20,000 ha less Code 3 area searched
- Staff surveillance searching down by 35,000 ha

Conversely Code 2 searching was up (overall) by 23,000 ha.

Of interest the number of code 1 paddocks having a clear search was higher this year which with lower area of new finds reporting has reduced the area of code 1 paddocks as at June 30, 2006 that will need to be searched in 2006/07.

**Infested properties**

There are currently 785 properties known to be infested with skeleton weed in the WA agricultural area, a net increase of 10 on the 775 known infested properties at the start of the 2005-06 Program (Table 2). This is a small net increase in a year that was favourable for skeleton weed growth.

The total number of infested properties remained relatively stable, with increases in low infestation shires offset by the number of properties coming off the infested list in high infestation shires.

Most new infested properties recorded smaller infested areas, with the majority consisting of single plant finds.
**Infested area**

In years when control of broadleaf agricultural weeds is good, skeleton weed is less prominent during the following summer. Additionally, the level of skeleton weed infestations found is normally less after dry summers when survival of new plants is much lower.

For 2005-06, the area known to be infested with skeleton weed decreased dramatically to 1701 ha, from 3160 ha in 2004-05 (Figure 3). Most of this decrease has been on properties within the heavily infested shires, which is an encouraging trend, and bodes well for the future management of skeleton weed in these areas.

One of the main factors influencing the decrease is likely to be the increased use of in-crop herbicides (such as Lontrel® to control broadacre infestations in the cropping phase.

**Research**

The Skeleton Weed Program continues to fund field research to determine the best management options for control of skeleton weed infestations. The work shows that skeleton weed can be controlled, without affecting yields, while eradication is being achieved. Failure to control skeleton weed infestations could result in very significant yield losses.

The trials at Mt Walker and Westonia, which were run at sites infested with skeleton weed, have shown that skeleton weed can be controlled and even eradicated with continuous cropping and treatment in summer. The Westonia trial, which was first treated in 2001, has not had skeleton weed plants on some of the trial area since 2004 and all of the trial area since 2005.

Two trials are in progress at Lake King and Geraldton to determine the tolerance to herbicide residues by various crops grown in rotation. Results to date indicate that there is little problem growing cereals after the 7 litre application of Tordon™ 75D; canola is less tolerant and lupins the least. Tordon™ 75D applied at 4 L/ha in 2003 reduced yields by as much as 30% in lupins grown in 2005. Grazon™ at 3 L/ha caused similar yield reductions. Similar damage was recorded at Geraldton so it appears that the herbicides are behaving in a like manner, despite regional differences in soil, rainfall and temperature. Of interest in the work at Geraldton was the tolerance of lupins (unlike other crop legumes such as peas) to the herbicide Lontrel™. This suggests that there maybe some opportunity to apply up to 0.5 L/ha before seeding and 100 mL/ha post emergent to provide some skeleton weed suppression.

Trials at Geranium, in the mallee region of South Australia, will continue this year. Treatments consisting of a single knockdown of SpraySeed® followed by post emergence sprays with Lontrel™, plus one of the phenoxy herbicides, have given a significant reduction in skeleton weed density since the start of the trial in 2002.

Skeleton weed densities at the Geranium research site are much higher than those currently found in WA. This allows herbicide impact on plant numbers to be studied more effectively studied.
Chemicals

Grazon™ Trials have shown that Grazon™ and its generics will give control of skeleton weed equivalent to that of Tordon™ 75D. At present Grazon™ is cheaper than Tordon™ 75D so the cost of treatment will be reduced. A permit has been obtained to allow the application of these products to skeleton weed infested properties in Western Australia. At present it is recommended that they be used at 5 L/ha compared to 7 L/ha for the use of Tordon™ 75D. The product could also replace Tordon™ 75D when it is being used as a summer treatment as part of a mixture to prevent seeding on skeleton weed plants.

A new product has been shown to have activity on skeleton weed in trials in South Australia, and will be further tested this season. The product has components similar to Lontrel® and to the triclopyr in Grazon™. There may be issues of residues for growth of legumes the following season so further careful testing and planning will be needed to determine how it might fit into our farming systems in WA.

Local action groups (LAGs)

Fourteen LAGs throughout the grain growing areas of the State were active to varying degrees during the 2005-06 program. These groups received a total of $215,775 during the season to assist with the implementation of local strategies to facilitate the Program in their area.

In the heavily infested shires, full time LAG coordinators have done an excellent job of coordinating and implementing skeleton weed activities on a local level and their assistance to landholders has been invaluable.

The LAGs in general have been successful in developing localised strategies and providing support for affected growers, helping them to meet their obligations. Their continued activity will be an important part of the skeleton weed control strategy into the future.

Skeleton Weed Committee

<table>
<thead>
<tr>
<th>Name</th>
<th>Surname</th>
<th>Position</th>
<th>Contact number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rex</td>
<td>Edmondson</td>
<td>Chairman</td>
<td>9354 9008</td>
</tr>
<tr>
<td>Terry</td>
<td>Cheetham</td>
<td>Member/Narembeen</td>
<td>9061 8032</td>
</tr>
<tr>
<td>David</td>
<td>Auld</td>
<td>Member/Yilgarn</td>
<td>9049 8026</td>
</tr>
<tr>
<td>Doug</td>
<td>Sewell</td>
<td>Member/Goomalling</td>
<td>9629 1190</td>
</tr>
<tr>
<td>Duncan</td>
<td>Holme</td>
<td>Member/Wongan Hills</td>
<td>9671 1135</td>
</tr>
<tr>
<td>Crees</td>
<td>Mark</td>
<td>Member/Merredin</td>
<td>9044 7034</td>
</tr>
<tr>
<td>Peter</td>
<td>Batten</td>
<td>Member/Yuna</td>
<td>9923 0695</td>
</tr>
<tr>
<td>Steve</td>
<td>Metcalf</td>
<td>Member/Lake King</td>
<td>9842 9880</td>
</tr>
<tr>
<td>Peter</td>
<td>Wahlsten</td>
<td>Member/Merredin</td>
<td>9450 6467</td>
</tr>
</tbody>
</table>
The Department will support Local Action Groups through

- Facilitation of discussions and the provision of technical information to groups;
- Facilitation of the provision of feedback to the Skeleton Weed Committee;
- Facilitation of the development of local skeleton weed strategies;
- Provision of Shire maps indicating infested properties;
- Provision of information on the levels of compliance in the area;
- Provision of information on progress in other areas;
- Provision of information on new infestations;
- Recording search data on a central database;
- Carrying out surveillance for undetected/unreported infestations;
- Enforcing compliance on non-compliant properties;
- Providing access to search rigs;
- Arranging for maintenance of search rigs;
- Arranging access to Skeleton Weed Eradication Fund owned spray units where available.

Guidelines for use of local action group support funds 2006/2007

The State Skeleton Weed Committee fosters greater grain grower involvement in detecting and eradicating skeleton weed infestations, and in preventing the spread of skeleton weed generally. To help do this, Local Action Groups support individual landholders. The 2006/2007 Skeleton Weed Program includes an allocation for Local Action Groups.

The Skeleton Weed Committee / Agriculture Protection Board have deliberately avoided placing tight restrictions on the use of the funds, in order to encourage local initiative and innovation to the maximum possible extent. Use of such funds is therefore essentially at the discretion of the action group concerned, provided the following conditions are satisfied:

- All expenditure is primarily to be focused on assisting landholders to meet the requirements of the Skeleton Weed Program.
- Group facilitation and support must be addressed as a first priority, before funding is committed for other purposes.
- Use of the funding must be in the broad community interest.

- All stakeholders need to be involved in the decision making process and any proposed use of funds needs to have their broad support so that use of the funding does not cause inequity. (This is especially important where groups are considering allocation of funds to carry out actions on individual properties such as summer spraying or searching of paddocks, as available funding will generally be insufficient to cover all infested properties in the Shire).

- The basis for decisions on the use of funding provided must be recorded in the minutes of appropriate group meetings.

- Full record of all expenditure of Program funds must be kept and made available to the Skeleton Weed Committee, together with a formal report at the end of the 2006-07 Program outlining associated achievements, issues arising, and recommendations for improvement in 2007-08.

- Groups may discuss any proposed items of expenditure with SWC if they think the proposed expenditure is justifiable, but might fall outside these guidelines.

Funding has been set for each Shire area according to assessed requirements. Further funds may be made available to groups during the year depending upon need.

Funding has been allocated on the basis of Shire boundaries, but this need not restrict the ability of groups:

- To work across Shire boundaries where appropriate.
- To pool the funding with other groups/areas for increased efficiency where this is most appropriate.

Some examples of the types of activity being considered by groups are:

- Employment of coordinators to facilitate volunteer searching or to coordinate the use of search rigs.
- Payment of costs to action group coordinators.
- Payment of hire costs of additional search vehicles.
**Skeleton Weed Record Sheet**

Business Name:  

Business Address:  

Nominated Person:  

Year:  

<table>
<thead>
<tr>
<th>Search Date</th>
<th>Search Result # Of Plants</th>
<th>Treatment Y/N</th>
<th>Status F/S</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>December</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>January</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>February</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>March</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Nominated Person Sign:  

Date:  

---

**Information for urban landholders**

_Urban includes city/metropolitan, regional townsites and horticultural areas._

This section explains urban landholder/managers’ responsibility for finding and eradicating skeleton weed on your property.

**You are required to:**

- Search, mark and treat infestations;
- Provide records of searching;
- Prevent the movement of seed and root fragments from the property;
- Prevent skeleton setting viable seed in known infested locations;
- Provide a Statutory Declaration stating that search obligation have been met, by April 1st each year.

Skeleton weed growing on a road verge
Summer search and treatment:

- Known infested areas must be searched.
- Adjoining ‘Suspect’ areas are to be inspected. Along roadways, this should extend to one kilometre either side of the infestation.
- Infestations must be marked (e.g. starpicket, flagging tape, etc and GPS coordinates recorded where possible). Markers should be placed at the exact location of plants found or around the outside of large infestations at ten metre intervals.
- Small infestations should be treated with ‘Tordon™ granules’ at 10 g per plant.
- All infestations must be treated in summer to prevent seed set. Treatment to be as per Table 3.
- A ‘Business site plan’ must be provided clearly indicating the location of infestations.
- Searching around infested locations must be completed in a timely manner.
- All searching is to be completed by 31 March (one inspection per month Dec, Jan, Feb, and Mar).
- Landholders must maintain a record of searching and treatments on the Skeleton Weed Record Sheet.
- Copy of Record Sheet and Business site map with locations of infestations must be provided to the Department of Agriculture and Food by the 1st April each year.
- Landholders must maintain a record of searching and treatments on the Skeleton Weed Record Sheet.

Winter eradication treatment

- All infested squares and known plants are to be treated with Tordon™ granules at the rate equivalent to 10 g per plant as outlined in Table 3.
- Infested locations must not be disturbed (cultivated or worked through) in any way.
- Treatments must be recorded and made available to Biosecurity officers.

Landholder compliance with protocols

Failure to comply with any of the protocols will result in the issuing of a direction under Section 50 of the Agriculture and Related Resources Protection Act 1976 requiring the work to be completed by the landholder/lessee within a specified time frame (usually seven days). Such failures include failure to keep the minimum required records or failure to carry out searching and the minimum approved treatments of infestations.

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Failure to comply with a Section 50 Notice will result in the work being carried out under Section 52 of the Act. Full costs of this work will be recovered from the landholder/lessee. Prosecution will be considered in situations where there is clear evidence that a landholder has been aware of an infestation, and their responsibilities, and has made no effort to comply.

Audits of all infested properties will occur at some time. High risk properties and those randomly selected may receive several audit inspections.

Searching protocols for urban landholders/managers

Full Inspection Search should be undertaken when searching locations which had infestations of skeleton weed in past years, and locations where new infestations were detected this year.

Technique: ‘Single’ plant or ‘Small’ infestations.

- Complete search on foot or in vehicle (whichever is most suitable).
- Commence search from infestation site and work outwards from there, searching in all directions from infestation.
- Be aware of seed contamination if plants are Flowering and Seeding.
- Search known locations once a month commencing with December.
- Complete similar searches in January, February and March
- Record search results on ‘Skeleton Record Sheet’.
- Send a ‘Statutory Declaration’, ‘Completed Record sheet’ and ‘Business site plan’ to the nominated Department office by the 1st April each year until cleared of Skeleton weed.
- Observe Occupational Health & Safety requirements while conducting search.

Technique: ‘Large’ or ‘Paddock’ infestations

- As for broadacre searching: See page 4
Compliance auditing of infested properties

Inspectors will carry out audits of all infested properties to confirm that landholders have complied with searching and skeleton weed treatment protocols. Audits of summer search and treatments will occur between 16 January and 15 April 2007.

Non-compliance management policy

Non-compliance will be managed under the provisions of the *Agriculture and Related Resources Protection Act 1976*.

Landholders must comply with the following requirements or they will be subject to regulatory management in accordance with the non-compliance management procedure.

**Landholders must:**
- Report new infestations to the Department.
- Keep the minimum required records and property maps of searching and treatment.
- Provide records to inspectors by due dates.
- Adequately mark infestations in paddocks.
- Treat infestations to prevent viable seed set.
- Not work through infestations (some exceptions may apply in cases of widespread infestations that may be treated with Lontrel).
- Treating infested areas in winter with Tordon™/Grazon™ or an equivalent at the rate of 7.0L per hectare on Tordon™ 75D or 5 L/ha of the Grazon™ or one of its generic equivalents according to Table 3.
- Prevent the active movement of skeleton weed from the property by ensuring that the risk of skeleton weed contamination of produce and equipment moving off the property is minimised.
- Locate and treat all skeleton weed plants to prevent viable seed set in summer.

IMPORTANT DISCLAIMER

The Chief Executive Officer of the Department of Agriculture and Food and the State of Western Australia accept no liability whatsoever by reason of negligence or otherwise arising from the use or release of this information or any part of it.

ALWAYS READ 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 the conditions of any Permit. Users are not absolved from compliance with the directions on the label or the conditions of the permit by reason of any statement made or not made in this publication.
## Table 3: Best Practice Skeleton Weed Herbicide Guide
From Department of Agriculture and Food Bulletin 4557

*Temporary suppression of growth  **Long term suppression of growth  ***Death of seedlings and above ground part of adult plants  ****Death of many adult plants  *****Death of most adult plants

<table>
<thead>
<tr>
<th>Crop</th>
<th>Pre-seeding</th>
<th>Early post emergence</th>
<th>Late post emergence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wheat</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In crop</td>
<td>glyphosate (360 g/L)</td>
<td>0.5 L to 1.0 L</td>
<td>up to 90% control</td>
</tr>
<tr>
<td></td>
<td>Spray Seed 25</td>
<td>1.0 L to 2.0 L</td>
<td></td>
</tr>
<tr>
<td></td>
<td>and/or triasulfuron (750 g/L)</td>
<td>35g</td>
<td></td>
</tr>
<tr>
<td></td>
<td>clopyralid (300 g/L)</td>
<td>300 mL (or use 120 g of 750 g/kg clopyralid)</td>
<td>*****</td>
</tr>
<tr>
<td></td>
<td>+ metsulfuron methyl (600 g/kg)</td>
<td>+ 3g</td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ MCPA amine (500 g/L)</td>
<td>+ 500 mL</td>
<td></td>
</tr>
<tr>
<td>Late post emergence</td>
<td>clopyralid (300 g/L)</td>
<td>500 mL (or use 200 g of 750 g/kg clopyralid)</td>
<td>*****</td>
</tr>
<tr>
<td></td>
<td>+ MCPA amine/ester (500 g/L)</td>
<td>+ 1 L</td>
<td></td>
</tr>
<tr>
<td>or</td>
<td>Tordon™ 242 (420 g/L MCPA + 26 g/L picloram)</td>
<td>1 L</td>
<td>*****</td>
</tr>
<tr>
<td>or</td>
<td>MCPA amine (500 g/L)</td>
<td>2 L</td>
<td>***</td>
</tr>
<tr>
<td>or</td>
<td>metsulfuron methyl (600 g/kg)</td>
<td>5 g</td>
<td>***</td>
</tr>
<tr>
<td>or</td>
<td>MCPA amine/ester (500 g/L)</td>
<td>+ 1 L</td>
<td>***</td>
</tr>
<tr>
<td>or</td>
<td>2,4-D amine (500 g/L)</td>
<td>1.4 L</td>
<td>***</td>
</tr>
<tr>
<td>or</td>
<td>2,4-D ester (800 g/L)</td>
<td>0.7 L/ha</td>
<td>***</td>
</tr>
<tr>
<td><strong>Barley</strong></td>
<td>glyphosate (360 g/L)</td>
<td>0.5 to 1.0 L</td>
<td>up to 90% control</td>
</tr>
<tr>
<td>In crop</td>
<td>clopyralid (300 g/L)</td>
<td>300 mL (or use 120 g of 750 g/kg clopyralid)</td>
<td>*****</td>
</tr>
<tr>
<td></td>
<td>+ metsulfuron methyl (600 g/kg)</td>
<td>+ 3g</td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ MCPA amine (500 g/L)</td>
<td>+ 500 mL</td>
<td></td>
</tr>
<tr>
<td>Late post emergence</td>
<td>clopyralid (300 g/L)</td>
<td>500 mL (or use 200 g of 750 g/kg clopyralid)</td>
<td>*****</td>
</tr>
<tr>
<td>or</td>
<td>MCPA amine/ester (500 g/L)</td>
<td>+ 1 L</td>
<td></td>
</tr>
<tr>
<td>or</td>
<td>Tordon™ 242 (420 g/L MCPA + 26 g/L picloram)</td>
<td>1 L</td>
<td>*****</td>
</tr>
<tr>
<td>or</td>
<td>MCPA amine (500 g/L)</td>
<td>2 L</td>
<td>***</td>
</tr>
<tr>
<td>or</td>
<td>2,4-D amine (500 g/L)</td>
<td>1.4 L</td>
<td>***</td>
</tr>
<tr>
<td>or</td>
<td>2,4-D ester (800 g/L)</td>
<td>0.7 L/ha</td>
<td>***</td>
</tr>
<tr>
<td><strong>Oats</strong></td>
<td>glyphosate (360 g/L)</td>
<td>0.5 to 1.0 L</td>
<td>up to 90% control</td>
</tr>
<tr>
<td>In crop</td>
<td>clopyralid (300 g/L)</td>
<td>300 mL (or use 120 g of 750 g/kg clopyralid)</td>
<td>*****</td>
</tr>
<tr>
<td></td>
<td>+ metsulfuron methyl (600 g/kg)</td>
<td>+ 3g</td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ MCPA amine (500 g/L)</td>
<td>+ 500 mL</td>
<td></td>
</tr>
<tr>
<td>Late post emergence</td>
<td>clopyralid (300 g/L)</td>
<td>500 mL (or use 200 g of 750 g/kg clopyralid)</td>
<td>*****</td>
</tr>
<tr>
<td>or</td>
<td>MCPA amine/ester (500 g/L)</td>
<td>+ 1 L</td>
<td></td>
</tr>
<tr>
<td>or</td>
<td>Tordon™ 242 (420 g/L MCPA + 26 g/L picloram)</td>
<td>1 L</td>
<td>*****</td>
</tr>
<tr>
<td>or</td>
<td>MCPA amine (500 g/L)</td>
<td>2 L</td>
<td>***</td>
</tr>
<tr>
<td>or</td>
<td>2,4-D amine (500 g/L)</td>
<td>1.4 L</td>
<td>***</td>
</tr>
<tr>
<td>or</td>
<td>2,4-D ester (800 g/L)</td>
<td>0.7 L/ha</td>
<td>***</td>
</tr>
<tr>
<td><strong>Canola</strong></td>
<td>glyphosate (360 g/L)</td>
<td>0.5 to 1.0 L</td>
<td>up to 90% control</td>
</tr>
<tr>
<td>In crop</td>
<td>clopyralid (300 g/L)</td>
<td>300 mL (or use 120 g of 750 g/kg clopyralid)</td>
<td>*****</td>
</tr>
<tr>
<td></td>
<td>+ MCPA amine (500 g/L)</td>
<td>+ 500 mL</td>
<td></td>
</tr>
<tr>
<td>Late post emergence</td>
<td>clopyralid (300 g/L)</td>
<td>500 mL (or use 200 g of 750 g/kg clopyralid)</td>
<td>*****</td>
</tr>
<tr>
<td>or</td>
<td>MCPA amine/ester (500 g/L)</td>
<td>+ 1 L</td>
<td></td>
</tr>
<tr>
<td>or</td>
<td>Tordon™ 242 (420 g/L MCPA + 26 g/L picloram)</td>
<td>1 L</td>
<td>*****</td>
</tr>
<tr>
<td>or</td>
<td>MCPA amine (500 g/L)</td>
<td>2 L</td>
<td>***</td>
</tr>
<tr>
<td>or</td>
<td>2,4-D amine (500 g/L)</td>
<td>1.4 L</td>
<td>***</td>
</tr>
<tr>
<td>or</td>
<td>2,4-D ester (800 g/L)</td>
<td>0.7 L/ha</td>
<td>***</td>
</tr>
<tr>
<td><strong>Lupins</strong></td>
<td>glyphosate (360 g/L)</td>
<td>0.5 to 1.0 L</td>
<td>up to 90% control</td>
</tr>
<tr>
<td>In crop</td>
<td>Spray Seed™ 250 (135 g/L paraquat + 115 g/L diquat)</td>
<td>1 to 2 L</td>
<td>up to 90% control</td>
</tr>
<tr>
<td>Late post emergence</td>
<td>MCPA (420 g/L) + diflufenican (25 g/L)</td>
<td>1 L</td>
<td>up to 90% control</td>
</tr>
<tr>
<td></td>
<td>eg. Tigrex or Giant</td>
<td>1.8 L</td>
<td>up to 90% control</td>
</tr>
<tr>
<td></td>
<td>Brodal (500 g/L, diflufenican)</td>
<td>200 mL</td>
<td>up to 90% control</td>
</tr>
<tr>
<td><strong>Pasture</strong></td>
<td>Spray Seed™ 250 (135 g/L paraquat + 115 g/L diquat)</td>
<td>1 to 2 L</td>
<td>up to 90% control</td>
</tr>
<tr>
<td>Winter</td>
<td>MCPA (420 g/L) + diflufenican (25 g/L)</td>
<td>1 L</td>
<td>up to 90% control</td>
</tr>
<tr>
<td></td>
<td>eg. Tigrex or Giant</td>
<td>1.8 L</td>
<td>up to 90% control</td>
</tr>
<tr>
<td>Late treatment</td>
<td>Brodal (500 g/L, diflufenican)</td>
<td>200 mL</td>
<td>up to 90% control</td>
</tr>
<tr>
<td>(clover at least 3 leaf stage)</td>
<td>2,4-D amine (500 g/L)</td>
<td>1.8 L</td>
<td>up to 90% control</td>
</tr>
<tr>
<td>(two to six leaves &amp; plants 4 to 10 cm high)</td>
<td>Spray Seed™ 250 (135 g/L paraquat + 115 g/L diquat)</td>
<td>1 to 2 L</td>
<td>up to 90% control</td>
</tr>
<tr>
<td>(clover with more than 6 leaves and skeleton weed still as rosettes)</td>
<td>MCPA (420 g/L) + diflufenican (25 g/L)</td>
<td>1 L</td>
<td>up to 90% control</td>
</tr>
<tr>
<td>Will damage clovers</td>
<td>Brodal (500 g/L, diflufenican)</td>
<td>200 mL</td>
<td>up to 90% control</td>
</tr>
<tr>
<td><strong>Summer</strong></td>
<td>Spray Seed™ 250 (135 g/L paraquat + 115 g/L diquat)</td>
<td>1 to 2 L</td>
<td>up to 90% control</td>
</tr>
<tr>
<td>(for prevention of seed set in all crops and pasture)</td>
<td>MCPA (420 g/L) + diflufenican (25 g/L)</td>
<td>1 L</td>
<td>up to 90% control</td>
</tr>
<tr>
<td>or</td>
<td>glyphosate (450 g/L + 2,4-D ester (800 g/L)</td>
<td>0.5 L to 1.5 L</td>
<td>up to 90% control</td>
</tr>
<tr>
<td></td>
<td>+0.5 L</td>
<td>up to 90% control</td>
<td>**for up to 6-7 weeks</td>
</tr>
</tbody>
</table>
Appendix 2: Checklist For Rural Areas

Rural landholders/managers should complete this in March each year.

Have you:
- Checked infested paddocks for any skeleton weed germinations over summer?
- Controlled any summer plants found?
- Followed up monitoring of infested and non-infested paddocks monthly from December to March?
- Marked infested areas properly?
- Made sure all equipment is clean after being in infested paddocks?
- Notified your local department officer of any new infestations?
- Returned your paddock record sheet to your local biosecurity officer by February 15th?

Report all unfamiliar or suspect plants to your district Department of Agriculture and Food office listed below

<table>
<thead>
<tr>
<th>Location</th>
<th>Phone Number 1</th>
<th>Location</th>
<th>Phone Number 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albany</td>
<td>9892 8444</td>
<td>Merredin</td>
<td>9081 3111</td>
</tr>
<tr>
<td>Esperance</td>
<td>9083 1111</td>
<td>Narrogin</td>
<td>9881 0222</td>
</tr>
<tr>
<td>Geraldton</td>
<td>9956 8555</td>
<td>Northam</td>
<td>9690 2000</td>
</tr>
<tr>
<td>Katanning</td>
<td>9821 3333</td>
<td>Moora</td>
<td>9651 1302</td>
</tr>
<tr>
<td>Lake Grace</td>
<td>9865 1205</td>
<td>Three Springs</td>
<td>9954 3333</td>
</tr>
</tbody>
</table>

Or to your local Department of Agriculture and Food Office.
Metropolitan reports should be directed to the Pest and Disease Information Service
South Perth: 9368 3666
Country Callers: 1800 084 881
www.agric.wa.gov.au (Search for “Skeleton Weed”)
Housekeeping code: 1796-09/06-ID6492