



NSW DEPARTMENT OF  
**PRIMARY INDUSTRIES**

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## Procedure – Environmental considerations in a locust control response

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### REVISION HISTORY

Version	Date	Amendments	
		Section	Details
1	31 Oct 08		For approval
2	18 Aug 09	All	Update NSW DPI to I&I NSW; DECC to DECCW

## 1. Application / Scope

This procedure is issued with the concurrence of the Director-General of Industry & Investment NSW (I&I NSW) under Clause 6.2 of the Memorandum of Understanding between the Director-General of I&I NSW and State Management Council of the Livestock Health and Pest Authorities (LHPA).

This procedure has been developed to assist LHPA and I&I NSW personnel who will be involved in plague locust control in NSW. It sets out the environmental considerations that must be undertaken when planning locust control.

## 2. Abbreviations / Definitions

**Habitat:** (as per the *Threatened Species Conservation Act, 1995*) means an area or areas occupied, or periodically or occasionally occupied, by a species, population or ecological community and includes any biotic or abiotic component.

**Abiotic:** inanimate, non-living.

**APO:** Agricultural Protection Officer

**Biotic:** relating to life or living things.

**DECCW:** Department of Environment, Climate Change and Water

**Ecological community:** (as per the *Threatened Species Conservation Act, 1995*) means an assemblage of species occupying a particular area.

**GPS:** Global Positioning System

**LHPA:** Livestock Health and Pest Authority (formerly Rural Lands Protection Board)

**I&I NSW:** Industry & Investment NSW (formerly NSW Department of Primary Industries)

**PDO:** Program Development Officer

**Population:** (as per the *Threatened Species Conservation Act, 1995*) means a group of organisms, all of the same species, occupying a particular area.

**SCC:** State Coordination Centre

**Threatened species:** (as per the *Threatened Species Conservation Act, 1995*) populations and ecological communities" means species, populations and ecological communities specified in Schedules 1, 1A and 2 and "threatened species, population or ecological community" means a species, population or ecological community specified in any of those Schedules within the *Threatened Species Conservation Act, 1995*.

**TSR:** Travelling Stock Route

## 3. Resources / Equipment

- Global Positioning System (GPS), forms, anemometer/weather meter, maps
- Task risk assessment template
- If environmental factors are limiting the use of certain insecticides such as Fenitrothion, biological control may be undertaken using Metarhizium (also known as Green Guard®).
- Access to relevant legislative Acts and Regulations
- [Primefact – Pesticides - reducing damage to honey bees](#)
- [Primefact – Pesticides – a guide to their effects on honey bees](#)

## 4. Warnings

- Locust control personnel are required to protect the environment from harm from insecticides used for locust control and must meet the requirements of environmental protection and pesticides legislation.
- Under the [Rural Lands Protection Act 1998](#), the Crown, the Minister and other persons are not liable for compensation or damage arising from plague locust control unless damage or loss is caused wilfully, negligently or maliciously.

## 5. Procedure

When conducting any locust control there are a number of environmental aspects to be considered. A risk management approach, taking into account environmental considerations, must be undertaken on a case by case basis to assess the suitability to spray an area to control plague locusts. A record of the risk assessment and decision must be documented and kept.

### 5.1 Rivers, watercourses, tanks, troughs and dams (including dry watercourses)

Before spraying near **any waterbody** including dams, rivers, creeks, tanks, troughs, wetlands and dry watercourses etc ensure the relevant insecticide label has been read and followed and a thorough **risk assessment is conducted**. The insecticide label will provide specific details on rates to be applied, buffers that must be adhered too (for example, Fenitrothion has a buffer zone of at least 1,000m when applied aerially, or 100m applied by ground, upwind of sensitive areas including (but not limited to) natural streams, rivers, waterways, human dwellings or neighbouring properties). It must also be safe to spray with the prevailing wind conditions (note this is a requirement of the insecticide **label so this MUST BE READ** in conjunction with the operation). Some labels specify minimum and maximum wind speeds and if the wind does not fall within these limits, spraying cannot take place. Labels may also specify application equipment, including nozzle types to reduce drift. Buffers are NOT a substitute for other drift reduction measures, but an additional measure.

Refer to Section 4.1 of Environmental Considerations in a Locust Control Response policy for further detail on rivers, watercourses, tanks, troughs, dams and dry watercourses.

The criteria for spraying near watercourses including dry watercourses, has been agreed to in consultation with the Department of Environment, Climate Change and Water (DECCW).

Following a risk assessment, spraying the area with locust insecticide as part of a locust control program may be undertaken if all criteria can be met. If they cannot be met the use of Metarhizium (Green Guard®) may be appropriate. A record of the risk assessment and decision must be kept.

### 5.2 Apiary sites and beehives

Bees are particularly sensitive to insecticides used to control locusts. It is important that a risk assessment is conducted to avoid contamination of apiary sites and foraging areas and advising apiarists of the potential for losses due to ground or aerial spraying for locusts. Insecticides such as Fenitrothion are extremely harmful to bees. The relevant label of any insecticide being used must be read prior to application. For example, the fenitrothion label states that the insecticide is 'dangerous to bees and **DO NOT** spray any plants in flower while bees are foraging'. Refer to Section 4.2 of Environmental Considerations in a Locust Control Response policy.

#### 5.2.1 Role of I&I NSW and LHPAs

It is vitally important that apiarists who are operating an area where potential locust spraying may occur are notified. There are several ways in which this process can occur:

- I&I NSW Agricultural Protection Officer (APOs), Program Development Officers (PDOs) or LHPA Rangers can advise the I&I NSW Regulatory Officers (Apiary) who in turn will notify contacts within the Bee Industry Consultative Committee. These association representatives can then inform their members.
- LHPAs also have registers of apiarists using sites on Travelling Stock Reserves (TSRs), who in-turn notify apiarists.
- General media information will also warn apiarists of areas and dangers.
- I&I NSW Regulatory Officers (Apiary) can also provide warning information for publication in beekeeping journals and newsletters in NSW.
- If spraying is occurring on a TSR the LHPA is responsible for ensuring that all known apiarists are informed of the potential for spraying in the area and the potential hazard to bees. This should occur through whatever channels the LHPA feels are appropriate.

- Apiarists should take notice of advice issued by the LHPA, government agencies or other means on how to reduce bee losses from spray which may be used in campaigns against both nymph and adult plague locusts. Without heeding this advice, bee losses can be expected. LHPAs may require apiarists to notify them when they bring beehives into the Authority district and place them on a TSR. Many apiarists move bees in the night, and though a pre-spray inspection the day before indicated no hives were present, this can change unexpectedly.
- If practical, known apiarists should be given at least 48 hours notification of aerial spraying operations in areas where they have hives located to allow them to move their hives. If unable, 24 hours notification must be given. Where hives are not moved, it may be possible to adopt other precautions such as delaying spraying until late afternoon when the majority of working bees will have returned to their hives.
- **It is important to remember that bees have a foraging range of up to 5km.** Where practicable, aerial spraying should not be undertaken within 5km of hives or crops, trees etc being pollinated by foraging bees.
- When consulting with landholders prior to spraying or issuing of insecticide ensure they are reminded or questioned about the presence of apiary sites and the possible impacts. This process forms part of the Landholder Consultation Form.

The following I&I NSW Primefacts are also available as another source of information:

[Primefact - Reducing damage to honey bees](#)

[Primefact - Guide to pesticides on honey bees](#)

### 5.2.2 Role of Apiarists

In the event of major locust activity across NSW or in the area where their hives are located, apiarist should take the following actions:

- Write to the LHPA General Manager responsible for the district in which their hives are located. Beekeepers should include a small map showing where the hives are located, even if located on private property, State forests, Western Land lease, national parks or LHPA sites. This will enable the hive locations to be placed on a master map of the district.
- Clearly state their name, address and contact phone numbers in case of an emergency. This information should also be located in the apiary so that I&I NSW and LHPA personnel can clearly identify the apiary and obtain the information.
- Note that the *Apiaries Act 1985* requires beekeepers to place the registered number on bottom boxes of all beehives. LHPA personnel can identify the apiary from the registered numbers.
- Advise the LHPA if they have moved the hives in or out of the LHPA area.
- Notify the LHPA **prior to** moving hives in areas likely to be sprayed.
- Place hives as deep as possible into heavy-timbered or forested areas to help reduce losses of bees due to spray. Where hives are in heavy timber and cannot be seen from the air, a V-shaped marker about 7m in length by 66cm wide should be laid out on the ground in the nearest clearing. The apex of the 'V' should point towards the apiary. A suitable marker is several sheets of roofing iron painted orange. These markers will assist pilots to locate apiaries from the air, should the need arise.
- Avoid concentrating loads of bees in any one place. This will also lessen the risk of spray damage. Avoid placing hives next to green crops that are likely to attract locusts and where farmers are likely to spray locusts.
- Ensure hives are ready to move at all times. Cover drums, supers and other equipment left on-site to prevent insecticide contamination.
- Be alert for warnings on expected spray activity, particularly in spring through to autumn. The Australian Plague Locust Commission (APLC) and I&I NSW will have regular radio and press statements to indicate locust activity and areas likely to be sprayed. They will also inform beekeepers through relevant associations, journals and newsletters.

The above suggestions should minimise bee losses from either locust nymph or swarm control programs. Reducing bee losses from spray damage is a co-operative effort between the beekeeper and the LHPA. Any program is only as good as the information available and the level of cooperation between all concerned.

### 5.3 Threatened species/habitats (e.g. Plains-wanderer, Bush Stone-curlew)

It is important that a **risk assessment is conducted** to avoid contamination of threatened species habitats, communities and foraging areas (e.g. Ibis). When conducting a risk assessment for control of locusts near threatened species habitats and communities, factor in the buffers and the requirements of the relevant insecticide label.

In consultation with the DECCW (refer to Section 4.3 of Environmental Considerations in a Locust Control Response policy) agreed buffers have been established for aerial and ground control in areas where threatened species or threatened species habitats have been recorded.

- Refer to the maps available through Front Gate showing Bush Stone-curlew and Plains-wanderer primary and secondary habitats;
- When using control agents other than Metarhizium around mapped Plains-wanderer primary and secondary habitat areas, ensure a 300m ground spray buffer and a 1km (1000m) aerial spraying buffer; and
- When using control agents other than Metarhizium around mapped Bush Stone-curlew sites, ensure the buffers around these point locations are 2.3 km (2,300m) for ground control and 3 km (3,000m) for aerial control.

### 5.4 Biological control sites

Refer to Section 4.4 of Environmental Considerations in a Locust Control Response policy. A **risk assessment** must be conducted for all locust control near biological nursery sites. When planning locust control in or near identified biological control nursery sites adhere to the following requirements:

- Refer to the maps showing identified critical biological control nursery sites in Front Gate;
- I&I NSW supports the use of Metarhizium **within** mapped nursery sites buffer areas; and
- When using control agents other than Metarhizium, ensure a 300m buffer for ground spraying and a 1km (1000m) aerial spraying buffer.

### 5.5 Organic farms

It is important to complete the Landholder Consultation Form prior to issuing any insecticide or when conducting a pre-spraying risk assessment. Metarhizium is a biological control agent of choice for these situations. Refer to Section 4.5 of Environmental Considerations in a Locust Control Response policy

#### 5.5.1 Spray contractors approval on certified organic farms

When a contractor is required to spray on a registered organic property, the contractor will need to undertake a thorough APPROVED decontamination procedure.

- a) Determine the approved contractor
- b) Determine the most recent chemical used by the contractor
- c) Obtain a list of all [certifying organisations](#) the producer is certified with and their respective certification numbers
- d) Provide details to SCC
- e) SCC will provide a proposed decontamination plan to the relevant certification organisations (see example in Appendix 1)
- f) Once approval is received from the certification organisations, the LHPA/FCP will be notified of requirements

### 5.6 Aquaculture

Many farm dams and large water bodies are likely to be stocked with fish, crustaceans or established aquaculture farms. The restrictions around aquaculture or any other dam are the same as those in section 5.1. Before spraying, ensure a risk assessment is conducted to identify any

dams and abide by the buffer requirements of the label. Refer to Section 4.5 of Environmental Considerations in a Locust Control Response policy

### 5.7 Other areas identified (e.g. dwelling, an area identified by the occupier or neighbouring occupier)

There may be other incidences where an area is identified as being environmentally sensitive and this must be considered. This can be done when filling out the Landholder Consultation Form and prior to issuing any insecticide or when conducting a pre-spraying risk assessment. Such areas may include school bus runs, residential dwellings or to allow a crop to be harvested. It may also include properties housing persons who are chemically sensitive.

NO aerial application can be made within 150m of an occupied dwelling without the occupiers consent.

Metarhizium may also be issued for control on properties where the people living/working on the property are sensitive to other insecticides.

## 6. References

Policy

- [Environmental Considerations in a Locust Control Response](#)

[Material Safety Data Sheets and labels](#)

Forms

- [Landholder Consultation Form](#)
- [Task risk assessment template](#)

Information

- [Primefact – Pesticides - reducing damage to honey bees](#)
- [Primefact – Pesticides – a guide to their effects on honey bees](#)
- [Certifying organisations for organic farms](#)

Legislative Acts and Regulations

- [Apiaries Act 1985](#)
- [Pesticides Act, 1999](#)
- [Pesticides Regulation, 2009](#)
- [Rural Lands Protection Act, 1998](#)
- [National Parks and Wildlife Act, 1974](#)
- [Threatened Species Conservation Act, 1995](#)
- [Protection of the Environment Operations Act, 1997](#)

## 7. Appendices

**Appendix One** – Example of decontamination plan for spray contractors for organic properties

Name & address of certifying organisation

Date

Dear XXXX

Please find below details of proposed spray rig decontamination procedure for the application of Metarhizium (Green Guard) for plague locust control. Approval is sought for the [name of certifying organisations] certified property (below) to maintain their status.

Owner Name: [insert owner name]  
Property: [insert property name]  
Certification #: [insert certification number]

Chemical Certified: AQF4  
Contractor recent chemical used: [insert most recent chemical – active ingredients]  
Equipment: [insert eg Hardy brand, 20 m boom, 2400 L plastic tanks]

Proposed management plan for decontamination of spray equipment. All flush rates will be in accordance with ChemCert recommendations:

1. 1<sup>st</sup> flush with either detergent or caustic soda. An additional flush may be required if detergent is used.
2. Then 3 flushes (of approx 100L per flush) with 1:10 acetic acid solution (using 20% horticultural vinegar)
3. Then 2 flushes with clean water

Yours sincerely

[insert name]  
Operations Manager  
I&I NSW State Coordination Centre