

Locust Bulletin

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GENERAL SITUATION IN SEPTEMBER AND OUTLOOK TO DECEMBER 2020

Australian plague locust

Chortoicetes terminifera

The locust population level remained low in inland eastern Australia during 2018 and 2019, but there was a moderate increase in autumn 2020 from the previous very low numbers in parts of Queensland and New South Wales. This increase resulted from breeding in improved habitat conditions following summer rainfalls and redistributions in autumn. Surveys in September 2020 identified low numbers of adults and occasional nymphs in parts of Queensland. In New South Wales low numbers of adults with localised patches of medium to high densities of new hatchings were identified.

The Bureau of Meteorology declared that La Niña had developed in the tropical Pacific Ocean by late September, which means above average rainfall is likely for much of eastern Australia while temperatures will be about average. The widespread moderate to heavy rainfall in inland eastern Australia in the third week of September (most areas received more than 25mm with a few areas receiving more than 100mm) should produce some vegetation response, providing favourable habitat conditions for the current spring generation.

Surveys in Queensland at the end of August and early September identified only occasional adults in the Longreach–Thargomindah–Cunnamulla–Charleville areas, and a few late instar nymphs north of Charleville. In late September very low numbers of young nymphs were detected in the Miles–The Gums–Mitchell and Charleville–Augathella–Tambo–Barcaldine areas, and low-density adults in the St George–Miles areas. As overwintering diapause eggs were expected to hatch from late July to mid-August in Queensland, the unusual early spring rainfall should generate favourable habitat for localised low to medium densities of nymphs that may have started to fledge from mid-September and initiate sporadic egg laying.

In New South Wales, surveys were completed in previously reported areas where egg laying was suspected in early April. Patchy low to medium densities of early instars were identified in the Enngonia–Cobar–Ivanhoe–Tilpa areas, while low numbers of adults were detected in the Mungindi–Dubbo–Ivanhoe–Broken Hill–White Cliffs–Enngonia areas following hatching reports from Cobar, Nyngan, Brewarrina and Coonabarabran areas. Sporadic hatching may also have occurred in other areas from late August in the north and continue to early October in the south of NSW. Localised low to medium densities of adults are expected to fledge from late September to mid-November.

No surveys were conducted in South Australia, but the overall population level is expected to remain low because of the previous very low background population, even after the widespread rainfall in mid-September.

No surveys were carried out in Victoria, but the increased adult activity reported from the Carlton–Echuca area in mid-April may have resulted in some overwintering eggs. Any hatching is expected in mid-October and fledging in late November. The overall population density is expected to remain low.

The spring outlook is for low-density populations to develop in several regions of Queensland and New South Wales, with medium and locally high densities developed from overwintering eggs possible in parts of Central West, Far West, Riverina and Northwest Plains regions of New South Wales. It is unlikely that extensive swarm formation will occur in the spring generation.

There is a low likelihood of widespread high-density populations, or of region-wide infestations developing during spring or December.

8 October 2020

Spur-throated locust***Austracris guttulosa***

The population level of this species remained very low throughout 2018 and 2019. Only low-density nymphs were detected in late March 2020, mainly in the Tambo–Emerald–Clermont area of Queensland, indicating a very late and limited breeding season in 2019-20. Surveys conducted from the end of August to early September identified occasional adults in the Cunnamulla–Longreach area of Queensland, and very few adults in late September in the St George–Miles area of Queensland, and the Bourke–Brewarrina–Coolabah area of New South Wales.

The widespread moderate to heavy rainfall in the third week of September in inland eastern Australia and possible early wet season for tropical Queensland may stimulate early sporadic breeding in improved habitat. Localised low to medium densities may appear in parts of Queensland but widespread high-density populations are unlikely to develop from the preceding very low background populations.

There is a low risk of a widespread infestation developing during spring or early summer.

Migratory locust***Locusta migratoria***

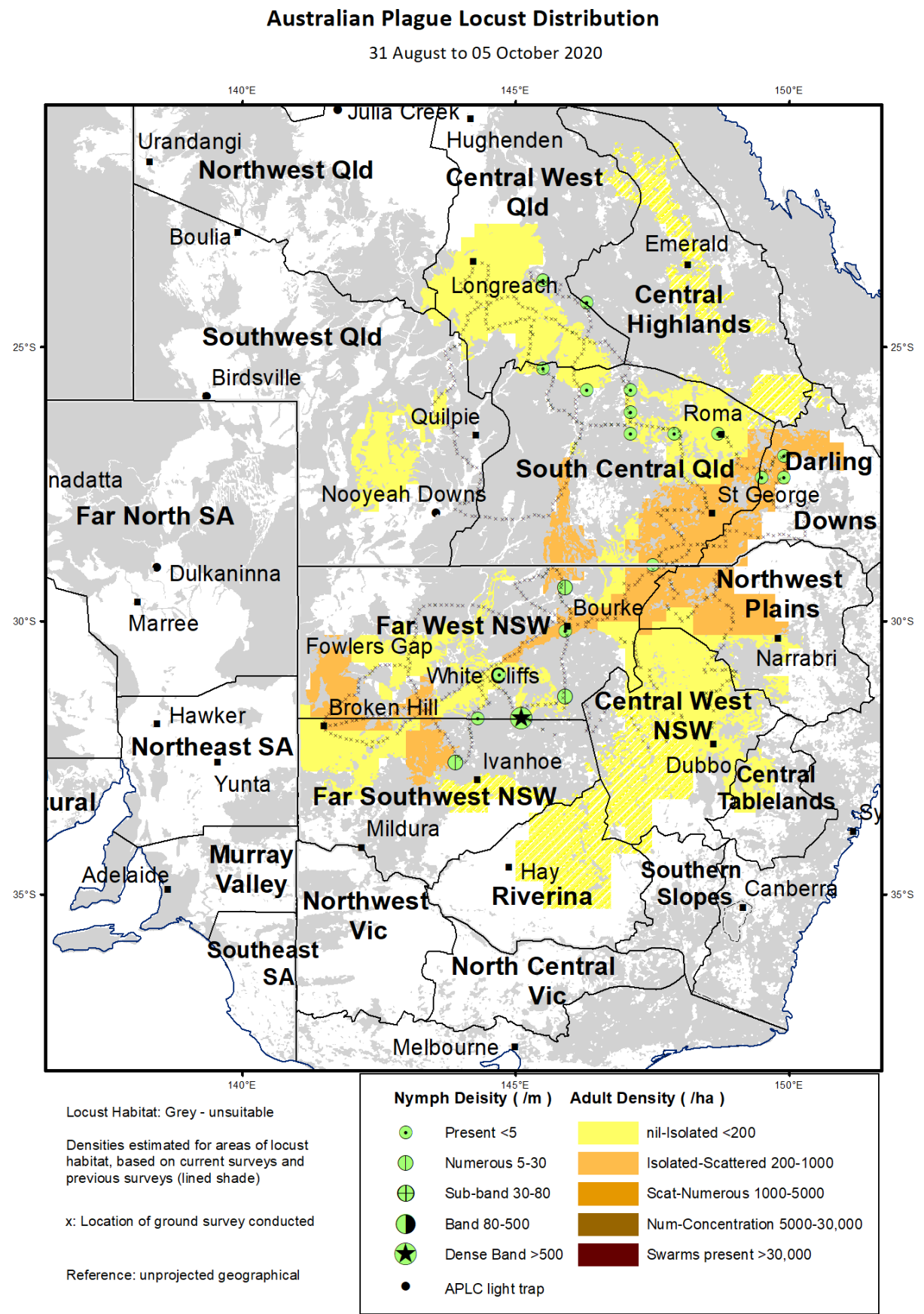
The population level of this species has remained very low over the past several years. Occasional adults were only recorded in late March 2020 in the Roma–Clermont area of Queensland, but some light-trap catches on 23-24 March 2020 in Longreach indicate that low density populations may be more widespread in Queensland. Surveys only detected two adults in the Miles–Mitchell area of Queensland at the end of September and the beginning of October 2020.

The widespread moderate to heavy rainfall in the third week of September in inland eastern Australia could initiate some limited breeding in improved habitat. Localised low-density populations may occur but high-density gregarisation is unlikely to develop from the current very low background level.

There is a low risk of a widespread infestation developing during spring or December 2020.

It is important that any locust activity be reported as soon as possible to your local biosecurity authority, primary industries department or to the commission. A toll-free call to the APLC can be made on 1800 635 962. An answering machine is attached to this phone for after-hours calls. Reports can also be emailed to APLC at aplc@agriculture.gov.au or made through the website at <http://www.agriculture.gov.au/aplc>

Locust distribution map–*Chortoicetes terminifera*



Australian plague locust**(*Chortoicetes terminifera*)****SITUATION IN SEPTEMBER AND FORECAST TO DECEMBER 2020****NEW SOUTH WALES****CENTRAL WEST and NORTHWEST PLAINS****Central West, Northwest Plains and Central Tablelands Local Land Services****Locusts and conditions**

- Locust population density increased moderately in parts of the Central West Local Land Services (LLS) area last autumn.
- Increased locust activity was reported by LLS officers from the Nyngan and Coonamble districts in early April, and egg laying was sighted near Nymagee and on several properties in the Baradine–Bugaldie area in mid-April. Hatchings were reported in the Nyngan and Coonabarabran districts from mid-September.
- Isolated to Scattered adults were recorded in late September in the Dubbo–Mungindi area, but no nymphs were detected. Other parts of this area were not surveyed.
- This area received the average amount of rainfall for winter, although the southern area received slightly more. The September rainfall was in this trend with the southern area receiving more than 50mm while the north just above 10mm. With forecast above average rainfall in the next three months, pasture vegetation will become green in most areas during the remainder of spring and December.

Forecast

- Overwintering eggs in this area should have hatched by mid-September after having experienced average winter temperatures.
- Low and medium density nymphs are likely in the Central West during spring, with some small areas of Band density likely to develop in localised areas, particularly in the Nyngan and Coonamble districts.
- The likelihood of successful breeding during November and December is high under the influence of the current La Niña event.
- There is a very low probability of any immigration during spring but there could be some emigration to the south under suitable weather conditions.

Risks

- There is a low risk of a widespread regional infestations developing during spring or December. There is a moderate risk of localised high-density nymphs and some areas of Band density nymphs developing during spring. Some small localised adult swarms may become evident later in spring.

FAR WEST & FAR SOUTHWEST**Western Local Land Services****Locusts and conditions**

- The population level remained low in most areas, but increased to Numerous in the Cobar, Wilcannia and White Cliffs districts in early April.
- Local Land Services reported high numbers of locusts near Cobar in early April. Landholder reports also indicated a small increase in adult numbers in other areas at that time. Hatching was reported from the Cobar and Brewarrina districts from mid-September.
- Surveys in the second half of September identified Isolated–Scattered density adults in the Broken Hill, Wilcannia, Louth, Bourke, and Enngonia districts, and small patches of early instars up to Band density in the Cobar district and Present-Numerous densities from Ivanhoe, Tilpa, Bourke to Enngonia areas.
- The insect monitoring radar from Bourke is still under upgrade.
- The light trap in Fowlers Gap started operation from mid-September but no locust captured.

- The winter rainfall was about average, but September was wet. There was light–moderate rainfall (<20–40 mm) in this area from the rainfall event of 19–20 September, with heavy rainfall (>40 mm) in the Wilcannia districts.
- Further growth response of pasture vegetation is expected as another significant rainfall event is forecasted in the early October.

Forecast

- Locust numbers are likely to remain at low levels in the Far West and Far Southwest regions during the remainder of spring and December.
- Overwintering eggs should have all hatched by late September. Nymphs are likely to develop at low–medium densities in most areas with small Bands possible in some locations.
- Low-density breeding is likely with more widespread rainfall.
- There is a low likelihood of immigration from other regions or redistribution within this region.

Risks

- There is a low risk of a widespread infestation developing during spring and December. There is a moderate probability of localised medium-density nymphs, possibly with some small bands, developing in the Bourke, Cobar, and Enngonia districts during spring.

RIVERINA

Riverina and Murray Local Land Services

Locusts and conditions

- The locust population was generally at low levels in autumn, with some Numerous density adults were observed in the Narrandera and Hay districts.
- No surveys were conducted in September in the Riverina.
- The upgraded insect monitoring radar in Hay operates 24/7 but did not detect any locust movement.
- There was light-moderate rainfall (20–40 mm) during the third week of September. Pasture vegetation will remain green with further rainfall forecast for the region.

Forecast

- Locust numbers are likely to remain generally low during the remainder of spring and December.
- Low-density nymphs are likely to occur from early October in the Riverina with localised higher densities in some locations.
- There is a low probability of immigration from adjacent regions during spring.

Risks

- There is a low risk of a widespread infestation developing during spring and December.

All locust activity should be reported to your Local Land Services or the Department of Primary Industries, NSW. A toll-free call to the APLC can be made on 1800 635 962. An answering machine is attached to this phone for after-hours calls. Reports can be emailed to APLC at aplc@agriculture.gov.au or sent through the web page at <http://www.agriculture.gov.au/aplc>

QUEENSLAND

SOUTHWEST AND NORTHWEST**Bulloo, Quilpie, Barcoo, Diamantina, Boulia, Winton, Cloncurry, McKinlay and Mt Isa Shires****Locusts and conditions**

- Very low population levels were evident in autumn surveys, and no light-trap capture was recorded at Nooyeah Downs.
- Limited surveys were conducted during August and early September. Isolated density adults were recorded occasionally in the Barcoo and Quilpie Shires, but not in the Bulloo Shire.
- Winter rainfall was about average, but September rainfall was above average. There was light-moderate rainfall (20-40 mm) in most areas with patchy heavy rainfall (>40 mm) in the Quilpie and Windorah Shires during the third week of September.
- Pasture vegetation should respond as more rainfall is forecasted for early October.

Forecast

- Locust numbers are expected to remain generally low during the remainder of spring and December, but sporadic breeding in favourable habitats may be triggered by rainfall events.
- There is a low probability of any significant immigration during the remainder of spring and December.

Risks

- There is a low risk of a widespread infestation developing during spring and December.

CENTRAL WEST**Longreach, Barcaldine and Blackall-Tambo Regional Council. Flinders and Richmond Shire.****Locusts and conditions**

- The population was at low densities in those areas surveyed during March, but high-density populations of various grasshopper species were recorded at many locations.
- Low numbers were recorded at the Longreach light trap during 11–14 March, indicating some active background populations.
- Surveys in late August and early September identified occasional Isolated density adults in the Longreach and Blackall-Tambo Regional Councils. In late September and early October, more Isolated adults were detected in the Blackall-Tambo and Barcaldine Regional Councils in addition to a few areas of Present density early instar nymphs.
- Winter rainfall was below average in this area, but September rainfall was substantially above average (moderate-heavy, patchy rainfall was almost up to 100mm) in the northwest part of this area from the rainfall event in the third week.
- Further pasture vegetation growth is expected as further rain is forecast in October.

Forecast

- Locust numbers are likely to remain generally low during the remainder of spring and December.
- Nymphs are likely to develop at low densities in some habitat areas and improved vegetation conditions may encourage some localised breeding.
- There is a low probability of significant immigration during spring and December.

Risks

- There is a low risk of a widespread infestation developing during the remainder of spring or December.

CENTRAL HIGHLANDS and SOUTH CENTRAL**Isaac, Central Highlands, Maranoa, Western Downs and Goondiwindi Regional Councils. Balonne, Murweh and Paroo Shires****Locusts and conditions**

- There was a moderate increase in locust population levels in autumn, but overall population densities were low.

- Surveys during late September and early October identified Isolated–Scattered density adults and Present density early instar nymphs in Maranoa, Western Downs and Goondiwindi Regional Council areas, and Murweh and Balonne Shires. Generally, the southern part of this region had more Scattered density adults.
- Winter was dry in most parts of this region, and September continued this trend. There was only light-moderate rainfall (<40 mm) in some regions in September.
- Pasture vegetation remains dry in most areas.

Forecast

- The locust population is likely to remain at generally low levels in these regions during spring and December.
- Sporadic low-density breeding could occur in some areas after significant rainfall events during spring.
- There is a low probability of any significant immigration during spring or December.

Risks

- There is a low risk of a widespread infestation developing during spring and December.

Locust activity should be reported to Biosecurity Queensland (Queensland Department of Agriculture and Fisheries) on 132523. A toll-free call to the APLC can be made on 1800 635 962. An answering machine is attached to this phone for after-hours calls. Reports can be emailed to APLC at aplc@agriculture.gov.au or sent through the website at <http://www.agriculture.gov.au/aplc>.

SOUTH AUSTRALIA

FAR NORTH, NORTHEAST, NORTHWEST & WESTERN AGRICULTURAL REGION**Locusts and conditions**

- Limited surveys of the Far North and Northeast regions in mid-February did not detect any locusts.
- The Dulkaninna and Oodnadatta light traps did not record any locusts in autumn.
- No surveys were conducted due to COVID travel restrictions.
- Winter rainfall was below average, especially in the southern part of this region, but returned to average by August and September due to a few significant rainfall events during 5-7 August and 19-20 September. There was patchy heavy rainfalls (>40 mm) in the Milers Creek and Maree areas during the third week of September (100mm in Maree). There is another widespread rainfall expected for this region in early October.
- There will be localised vegetation responses in areas that received heavy rainfall.

Forecast

- The locust population is likely to remain at very low levels during the remainder of spring and December given the background population level was so low and habitats were very dry.
- Some sporadic low-density breeding could have occurred following heavy rainfall, and only localised, low-density nymphs are likely to develop.
- There is a low probability of immigration into these regions during spring and December.

Risks

- There is a low risk of a widespread infestation developing during spring and December.

MURRAY VALLEY, MT LOFTY RANGES & SOUTHEAST REGION**Locusts and conditions**

- There were no reports of locust activity from last autumn.
- No surveys were conducted due to COVID travel restrictions.
- Winter and September rainfall are below average. Only a few light rainfall (<20mm) events occurred during September, but low-moderate rainfall (<40mm) was received on 5 October.
- Vegetation is expected to remain dry without significant rain.

Forecast

- The locust population is likely to remain at very low densities during the remainder of spring and December.
- There could be localised sporadic low-density breeding following any significant rainfall events.
- There is a low probability of any immigration during spring and December.

Risks

There is a very low risk of a widespread infestation developing during spring.

Locust activity should be reported to Biosecurity SA (Primary Industries and Regions South Australia) on the Plant Health Hotline on 1300 666 010. A toll-free call to the APLC can be made on 1800 635 962. An answering machine is attached to this phone for after-hours calls. Reports can be emailed to APLC at apl@agriculture.gov.au or sent through the website at <http://www.agriculture.gov.au/aplc>.

VICTORIA

NORTHWEST & NORTH CENTRAL VICTORIA**Locusts and conditions**

- Medium-density adults were reported from the Carlton–Echuca area on 14 April.
- No surveys were undertaken in last autumn or September.
- Winter and September rainfall was below average with conditions especially in the eastern part of North Central Victoria. There were a few light rainfall (<20 mm) events in mid-September, but light-moderate rainfall (20-40 mm) in the southern part and heavy rainfall (>40 mm) in the eastern part in late September and early October.
- A favourable vegetation response is expected to be above average, especially in the North Central Victoria.

Forecast

- Locust numbers are likely to remain generally low in Victoria during the remainder of spring and December.
- Any overwintering eggs are expected to hatch from mid-October, and localised low–medium densities of nymphs could be expected in parts of North Central Victoria, with some small bands possible in areas.
- There is a low probability of immigration during spring and December.

Risks

- There is a low risk of a widespread infestation developing during spring.

Locust activity should be reported to the Agriculture Victoria Customer Service Centre on 136 186. Alternatively, you can make a report via our online form: <https://forms.bio.vic.gov.au/public-reporting>. Please include photos where possible.

A toll-free call to the APLC can be made on 1800 635 962. An answering machine is attached to this phone for after-hours calls. Reports can be emailed to APLC at aplc@agriculture.gov.au or sent through the website at <http://www.agriculture.gov.au/aplc>.

Glossary of locust terms and density categories used in the Locust Bulletin

Locust biology and behaviour

Term	Definition
adult	A fully winged, mature locust capable of breeding and migrating
band	Dense aggregation of nymphs, usually moving forward together
diapause	Period of dormancy induced in anticipation of unfavourable environmental conditions
egg bed	An area of soil containing many egg pods (hundreds per square metre)
fledge	Final nymphal moult to a soft-bodied adult incapable of long-distance flight
instar	Discrete stages of nymphal development each separated by a moult
laying	Female locusts depositing clutches of 20-60 eggs into the ground in froth-lined egg pods
nymph	Juvenile wingless locust. Often referred to as the hopper stage
swarm	Dense aggregation of adults, milling at the same spot or flying closely together

Locust density categories

Where higher densities occur, a large proportion of the regional population is concentrated in very small areas with lower densities elsewhere, so the higher densities cannot be extrapolated over the area of an entire region. A range of density classes is usually found within a surveyed region.

Nymph Densities	Number per m ²		
Present	1	-	5
Numerous	6	-	30
Sub-band	31	-	80
Band	80	-	500
Dense Band		>	500

Adult Densities	Number per m ²		Number per hectare
Isolated	-	0.02	< 200
Scattered	0.03	-	0.1
Numerous	0.2	-	0.5
Concentration	0.6	-	3.0
Low Density Swarm	4.0	-	10
Medium Density Swarm	11	-	50
High Density Swarm		>	50

General density classes	Nymph densities	Adult densities
very low, occasional	Nil-Present	Nil-Isolated
low	Present	Isolated-Scattered
medium	Numerous-Sub-band	Scattered-Numerous
high	Bands	Concentration-Swarms

Reporting locust infestations

It is important that all locust activity is reported as soon as possible to your nearest state agriculture agency office or to the Australian Plague Locust Commission.

State	Authority for reporting locusts
New South Wales	Local Land Services (LLS) or Department of Primary Industries
Queensland	Biosecurity Queensland, Department of Agriculture and Fisheries
South Australia	Biosecurity SA, Primary Industries & Regions South Australia (PIRSA)
Victoria	Biosecurity Agriculture, Department of Economic Development, Jobs, Transport and Resources

Reports to the **Australian Plague Locust Commission** can be made by:

Free call (Canberra): 1800 635 962 (24 hours)
 Fax (Canberra): (02) 6272 5074
 Email: aplc@agriculture.gov.au
 Website: <http://www.agriculture.gov.au/aplc>