

Locust Bulletin

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GENERAL SITUATION IN NOVEMBER AND OUTLOOK TO FEBRUARY 2021

Australian plague locust

Chortoicetes terminifera

The spring locust population persisted at a low to medium level over most of inland eastern Australia, with higher densities regularly detected in some parts of New South Wales and isolated parts of Queensland. Fledging, aggregation, and possible short-distance redistribution have been continuing since September. Surveys in November continued to identify consistent low numbers of nymphs, while adults were the dominant stage in the populations detected. Swarms were observed in Far Southwest New South Wales and Southwest Queensland, while locust populations are expected to remain at generally low levels in Victoria and South Australia.

November rainfall was slightly lower, but temperature was 2–3 degrees higher than average across much of inland eastern Australia. There was moderate to heavy rainfall (25–50 mm) in the Longreach-Quilpie-Tambo areas on 9 November and widespread light rainfall (<15 mm) during 11–14 and in again late November over the south and northeast sectors of the inland. As the La Niña event is likely to continue to at least February 2021, above average rainfall and temperatures are still expected in much of inland eastern Australia with a high probability of further locust breeding within favourable habitats.

In New South Wales, Low to Medium-Density Swarms of adults containing fat and almost fully developed eggs were identified on 19 November in the Darnick district. Samples collected indicated some adults may have already laid previously and were preparing for a possible second laying. Numerous-Concentration densities were frequently detected in the Cobar-Wilcannia-Menindee-Balranald-Hay-Hillston areas and occasionally in the Lightning Ridge-Quambone-Warren-Narromine-Baradine-Burren Junction areas, with Isolated-Scattered densities found in other parts of New South Wales. Numerous-Sub Band density nymphs were identified mainly in the Far Southwest. Disturbed weather systems that commonly occurred across inland New South Wales may have induced some short-distance nocturnal movements in addition to daytime flights. This may have resulted in young adults only being present consistently along road verges. Reports of egg-bearing females were also received from the Ivanhoe, Coonamble, and Moree districts.

In Queensland, Concentration and Low-Density Swarms of adults with accumulated fat reserves were detected in late November in the Retreat-Hammond Downs district, where only occasional Isolated to Low-Numerous densities were identified 9 days before. This indicates possible aggregations and short-distance redistributions from adjacent areas. Concentration density adults were also found in the Nockatunga and Forestvale districts, while other parts of Queensland carried consistent Isolated to Scattered density adults and Present density nymphs.

No surveys were conducted in Victoria, with most locust sightings reported since 10th November. Agriculture Victoria officers confirmed some adults present containing fat and developed eggs.

Only limited survey was carried out in the far northeast corner of South Australia with low population densities identified, and there was a locust damage report from PIRSA for Yakka of Clare district.

The outlook for December is for increasing locust activity, with a high likelihood of successful widespread breeding in New South Wales but limited to only localised in other States. It is likely that more nymphal bands will develop from December onwards and result in a larger summer generation.

There is a moderate likelihood of more widespread high-density populations and region-wide infestations developing during summer.

4 December 2020

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

Surveys in early November identified consistent Scattered–Numerous densities of adults in the Springsure, Emerald and Clermont districts of Queensland. Later surveys detected frequent Isolated density adults in other parts of Queensland with occasional individual adults in New South Wales.

The below average rainfall in November may have restricted any large-scale breeding, but most locust habitats remained suitable, especially with the rainfall events on 9 November and in late November. Widespread low to medium densities of nymphs are likely to appear from sporadic breeding in much of Queensland with some localised high-density populations most likely to occur in the Central Highlands region. Only limited breeding is likely in New South Wales and South Australia given the very low background population.

There is a low risk of a widespread infestation but possible region-wide infestation in subtropical Queensland developing during summer.

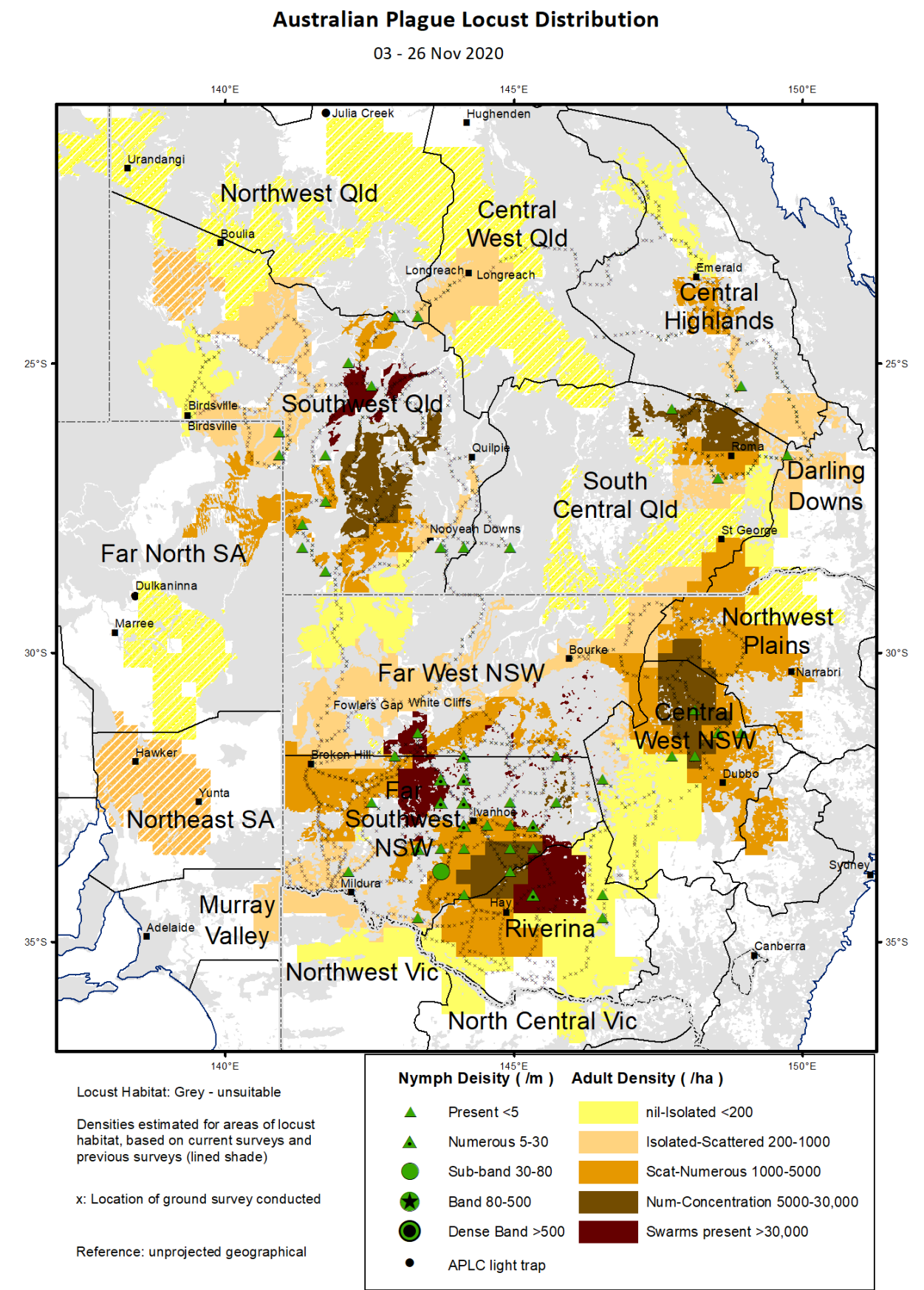
Migratory locust***Locusta migratoria***

Surveys in early November detected some adults up to Low-Numerous density in the Moura-Miles-Injune areas of Queensland, but nowhere else. The locust habitat conditions in the Central Highlands of Queensland was reasonably good after October rains, but deteriorated in November. Under the influence of the current La Niña event, localised breeding is likely to produce some low to medium density populations. High-density gregarisation is unlikely to result from the current very low background level.

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

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 and Northwest Local Land Services****Locusts and conditions**

- Surveys in early November in the southern part (Narromine-Bobadah) of this region only detected occasional isolated density adults. The adult population level was much lower than estimated from the nymphal population, indicating some emigrations may have occurred.
- Surveys in mid-November in the northern part of this region identified Scattered to Concentration densities of adults and Present density late instar nymphs in the Narromine-Gulgargambone-Baradine-Burren Junction-Collarenebri-Lightning Ridge-Quambone-Warren areas.
- LLS officers confirmed swarm activity in the Nyngan and Coonamble districts in mid-November when some mature adults with partially developed eggs, and new hatchings in the Nyngan and Trangie districts were detected in late November. Egg-laying was also confirmed the Coonamble district in late November.
- This region only received light rainfall (<15mm, below average) in November and habitat conditions deteriorated. However, with above average rainfall and temperature forecast in December and summer, pasture vegetation should become favourable for locust survival and breeding.

Forecast

- The likelihood of breeding is moderate to high along with expected improvement in habitat conditions. Localised Numerous to Band density nymphs are likely to continue developing into late December and swarms can also be expected to form afterwards.
- There is a low probability of any significant immigration during summer but there could be some short-distance emigration to the southwest or west adjacent areas under suitable weather conditions.

Risks

- There is a moderate risk of a widespread regional infestations developing during summer.

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

- Surveys in early and mid-November detected Present–Numerous density nymphs and frequent high density (>Numerous) adults in the Cobar-Wilcannia-Menindee-Balranald-Hillston areas, with more High-Numerous and Concentration densities identified in the southeast sector of this region by mid-November.
- Medium-Density Swarms were identified with accumulated fat and carrying almost fully developed eggs in the Darnick district on 19 November. Samples collected from these swarms indicated that some females may have already laid previous batch of eggs and were in the preparation for subsequent layings. Only Isolated–Scattered density adults were observed in other parts of this region.
- Surveys in early November identified up to Numerous density adults in the Cobar-Wilcannia-Ivanhoe-Hillston areas apart from the Concentration density adults in the Nymagee district. Subsequent surveys in mid-November detected more frequent High-Numerous density adults in this region, with continuous Concentration density Adults between Hillston and Mossgiel, a Low-Density Swarm northeast of Hillston and Medium-Density Swarms to the southwest of Darnick. The densities varied over time and the frequent disturbed weather systems across this region indicated a general shift, by short-distance movements, of populations to the southwest-ward within this region and adjacent areas.
- The light trap at Fowlers Gap captured a few locust events, during 10-13, 20-22, and 28 November when either a cold front or a tropical trough passed through this region.
- White Cliffs light trap was not in operation.

- The UNSW insect monitoring radar at Bourke airport remains non-operational pending upgrade.
- More locust reports came from this region in November and LLS officers confirmed several adult activity in this region.
- Only light rainfall (<15mm, below average) was received over much of this region in November.
- Pasture vegetation has been drying off over most of this region, except for the Menindee-Ivanhoe-Mildura areas where heavy rainfall was received in October and vegetation remained green. With above average rainfall in December and summer forecast, pasture vegetation should become favourable for locust survival and breeding.

Forecast

- Locust numbers are likely to increase markedly. Numerous–Band density nymphs are expected to appear commonly over a large area under improved habitat conditions in the southeast part of this region in December with more swarm formation later.
- The survival rate of the summer generation is likely to be high.
- There is a moderate likelihood of migration activity, high likely redistribution within this region, immigration from and emigration to adjacent regions.

Risks

- There is a high risk of a widespread infestation developing during summer.

RIVERINA

Riverina and Murray Local Land Services

Locusts and conditions

- Surveys in early and mid-November identified up to High-Numerous density adults in northwest parts (Hay-Hillston-Balranald areas) of this region. It was evident that more adults were detected in subsequent surveys in mid-November. Only occasional Isolated adults were detected in other parts of this region. Only occasional Present–Numerous density nymphs were found.
- The UNSW insect monitoring radar in Hay operates 24/7 but no significant locust movement was detected in November.
- There were many locust reports confirmed by LLS officers in the northeast part of this region.
- There was only light rainfall (<15mm) in this region in November, pasture vegetation started drying off. With above average forecast rainfall in December and summer, habitat conditions should become more favourable to locust in the future.

Forecast

- Locust numbers are likely to experience a moderate increase with possible localised bands and swarms developing in summer.
- There is a moderate probability of immigration from and possible emigration to adjacent regions.

Risks

- There is a moderate risk of a widespread infestation developing during summer.

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**

- Surveys during 16-26 November established an overall low-density population across much of this region. Occasional Present density nymphs were detected among the widespread Isolated–Scattered density adults, with a few localised higher densities of adults. High-Numerous to Concentration density young adults were identified in the Nockatunga district, and continuous Concentration to Low-Density Swarm density adults were observed on 26 November in the Retreat district where only occasional Isolated to Low-Numerous density adults were detected just 9 days before. The sudden appearance of mature adults (with accumulated fat) reported arriving in the Retreat district on 24 November, indicated it was an aggregation from a short distance under the influence of disturbed weathers in the previous two nights.
- Light traps in Birdsville and Nooyeah Downs were not in operation.
- Only sporadic, below average, light rainfall (<15mm in total) was received in November.
- Pasture vegetation continued to dry-off. However as more rainfall is forecast for the coming months, vegetation conditions should become more favourable for locust survival and breeding.

Forecast

- Locust numbers are likely to increase moderately during summer, possibly from local and immigrated populations triggered by rainfall events to breed in favourable habitats to possibly result in localised bands and swarms.
- There is a moderate probability of some immigration from adjacent areas.

Risks

- There is a low risk of a widespread infestation developing during summer with a moderate probability of some localised infestations.

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

- Limited surveys conducted in early and mid-November identified only Isolated density adults in the Longreach and Barcaldine Regional Councils.
- The Longreach light trap was not in operation.
- Moderate rainfall (25-50mm) was received in the Longreach-Quilpie-Tambo areas, while other parts of this region received light rainfall (<15mm). The November rainfall was about average.
- Pasture vegetation dried off considerably except for the Longreach-Quilpie-Tambo region, but subsequent fresh growth is expected as more rain is forecast in the coming months.

Forecast

- Locust numbers are likely to remain generally low but with possible localised higher densities from immigration and sporadic breeding in suitable habitats.
- There is a low to moderate probability of redistribution and migration in summer.

Risks

- There is a low risk of a widespread infestation but development of some localised infestations is possible in summer.

CENTRAL HIGHLANDS, Darling Downs and SOUTH CENTRAL

Isaac, Central Highlands, Maranoa, Western Downs, and Goondiwindi Regional Councils; Balonne, Murweh and Paroo Shires

Locusts and conditions

- Surveys in early November identified occasional Present density nymphs and consistent Isolated–Scattered density adults with some localised higher densities up to a Concentration density near Forestvale, and a few Numerous density adults.
- Several reports were received from the Chinchilla and Tara areas of the Darling Downs in mid-November, indicating short-distance redistributions occurred.
- Only light rainfall (<15mm) was received in this region, which was well below average.
- Pasture vegetation was drying off, but habitat conditions are expected to improve with above average rainfall forecast in summer.

Forecast

- The locust population is likely to remain at generally low levels in summer.
- Sporadic low to medium-density breeding could occur in some areas after significant rainfall events.
- There is a low probability of any significant immigration but a moderate chance of emigration in summer.

Risks

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

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 were only conducted in the northeast corner of the Far North SA in late November. Isolated density adults and one count of Present density nymphs were identified.
- The Dulkaninna and Oodnadatta light traps were not in operation.
- There was a locust damage report from Yakka in the Clare district relayed by PIRSA.
- November rainfall was less than 10mm over much of the region, below average.
- Vegetation was mostly drying off but some areas remained green. With above average rainfall forecast in coming months, habitat conditions should improve from December.

Forecast

- The locust population is likely to remain at a low-level during summer.
- Some sporadic low-density breeding is likely and localised low to medium density nymphs can be expected to develop.
- There is a low to moderate probability of some immigration from New South Wales and Victoria in summer.

Risks

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

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

- No surveys were conducted during this reporting period and no locust reports were received from this region.
- November rainfall was light to moderate (<25mm), below average.
- Vegetation remained green in the south part of this region, and with above average rainfall forecast for coming months habitat conditions should become favourable for locust survival and breeding.

Forecast

- The locust population is likely to remain at very low densities but some localised low to medium density populations are possible from sporadic breeding or immigration.
- There is a low to moderate probability of immigration during summer.

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**

- No surveys were conducted in Victoria, with most locust sightings reported since 10th November. Agriculture Victoria officers confirmed that some adults present contained accumulated fat and developed eggs.
- There was a public sighting of dead locusts on the Rye Beach of Mornington Peninsula in the morning of 18 November. These dead locusts may have been washed ashore after unsuccessful migration from the Northwest Victoria region on the night of 15 November.
- November rainfall was light to moderate (<25mm), below average in the northwest but just about average in the southeast part of this region.
- Some habitats remained green but much of this region has started drying off.

Forecast

- Locust numbers are likely to increase moderately in summer.
- There is a low to moderate probability of some immigration from adjacent areas in early summer and possible emigration later.

Risks

- There is a low to moderate risk of a widespread infestation developing during summer.

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>