



Australian Government

Department of Agriculture, Fisheries and Forestry
Australian Plague Locust Commission

December 2009

Locust Bulletin

GENERAL SITUATION IN NOVEMBER AND OUTLOOK TO MID-JANUARY 2010

Australian plague locust

Chortoicetes terminifera

Swarms formed in Central West New South Wales during the first half of November. Swarms were first recorded in the Coonamble–Gulargambone–Baradine and Collie–Warren areas where localised high density egg laying began in early November. In mid-November swarms formed in the Trangie–Tullamore and the Peak Hill–Parkes areas. While most activity has been in the Central West Livestock Health and Pest Authority (LHPA) area, there were some swarms in adjacent parts of Central North and Lachlan LHPA areas.

The outlook is for a decline in swarm activity and adult population density in the Coonamble area, but continuing swarms in the Parkes–Tullamore area in December. A second nymphal generation with some with localised development of hopper bands is likely, but at this stage high density hatching is confirmed from only one area east of Coonamble. Surveys did not identify significant migration to other regions, but reports indicate a population increase in Southwest Queensland in late November. Widespread heavy rainfall in western and southern New South Wales, South Australia and Southwest Queensland in late November will provide suitable soil and vegetation conditions for locust breeding. Forecast dates for possible egg laying have been adjusted as a result of this rainfall. A significant population increase from the current low levels is likely in these regions during December and January. There is the potential for swarm formation in several regions in late January.

In western New South Wales there was a very low density adult population in the Far West region and low densities in most of the Far Southwest and Riverina. There were medium density young adults and several concentrations in the Ivanhoe–Mossgiel area and several small swarms near Binya–Barellan to the north of Narrandera in Riverina LHPA area. Low density late instar nymphs were widespread in the Condobolin–Hillston area and in the Lachlan and parts of the Riverina LHPA areas.

Survey identified a continued low density population level in most of inland Queensland in early November. Reports and light trap records indicate some migration activity in Southwest Queensland in mid-November and a rapid population increase is possible if breeding follows the heavy rainfall in late November.

There was no survey conducted and no locust activity reported from South Australia during November and vegetation remains very dry in the Far Northeast region. However frequent rains in the southern Flinders Ranges area over the last two months and widespread heavy rains in the Northwest, Northeast and Far North regions during 16-23 November could result in an increase from the very low spring population level.

The adult population level was very low in northern Victoria during November. Some small-scale immigration into Northwest Victoria from Far Southwest New South Wales was possible in late November.

In Western Australia nymphs were reported from the Southern Cross, Merredin and Lake Grace areas of the Central Agricultural region, and the Salmon Gums and Jerramungup areas in the Western Agricultural region during October and November. Several swarms were reported in the Southern Cross area in early November and Department of Agriculture and Food officers continue to monitor the situation.

27 November 2009

Australian Plague Locust Commission
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Spur-throated locust***Austracris guttulosa***

There were several reports of dense swarms in the Mt Isa area in Northwest Queensland during October and November. The number of locusts caught in the Julia Creek light trap fell during October and November after high numbers during August and September. Surveys identified a widespread Scattered–Numerous density adult population in Central West Queensland, and mainly Isolated density adults in the Central Highlands and South Central Queensland, and the Northwest Plains of New South Wales.

Remaining swarms will disperse with the onset of wet season storm rains in Northwest Queensland. An increase in numbers in other regions of Queensland is possible as adults migrate and disperse to commence breeding. Egg laying could begin in December in Southwest, Northwest and Central west Queensland and also in the Central Highlands and nymphs are likely to appear January. Breeding can continue throughout summer as adults can lay a number of times. High survival rate of nymphs is generally dependent on follow up rains during their development.

Migratory locust***Locusta migratoria***

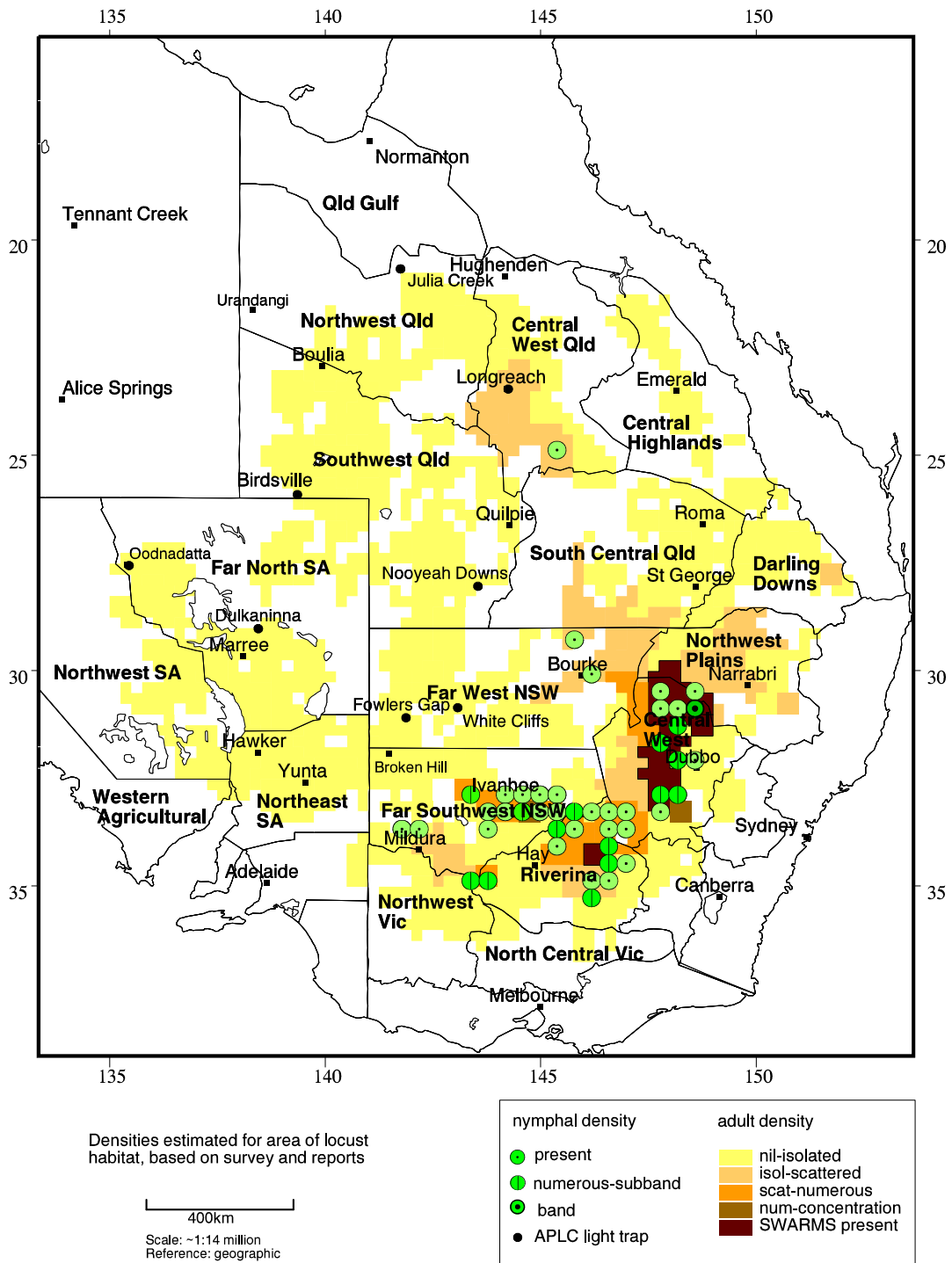
This species was not detected during surveys in November, but areas where the species is more common were not covered. Vegetation conditions were generally dry in the Central Highlands and South Central Queensland, but the start of summer rains could result in aggregation, egg laying and the possibility of a localised gregarious population increase.

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 for after-hours calls. Reports can also be e-mailed to APLC at locust.report@daff.gov.au or sent through the web page at <http://www.daff.gov.au/aplc>.

Locust distribution map

Australian Plague Locust Distribution

1 November to 30 November 2009



Forecast hatching and development times for indicative locations.

Location - NSW	Egg laying	Hatching	Mid-instar	Fledging
Coonamble-Baradine	6 November	23 November	2 December	17 December
Balranald-Deniliquin*	28 November	19 December	28 December	14 January
Peak Hill-Parkes	28 November	18 December	26 December	20 January
Broken Hill-Wentworth	28 November	14 December	22 December	4 January
Narrabri - Wee-Waa*	11 November	3 December	13 December	28 December
Location - Qld	Egg laying	Hatching	Mid-instar	Fledging
Birdsville-Thargomindah	29 November	15 December	23 December	7 January
Windorah-Boulia*	29 November	12 December	20 December	2 January
Quilpie-Tambo*	15 November	1 December	11 December	25 December
Location - SA	Egg laying	Hatching	Mid-instar	Fledging
Hawker-Orroroo*	28 November	18 December	28 December	6 January
Cooper-Pedy – Marree*	28 November	13 December	21 December	3 January

Forecast dates are based on development models for egg laying by known or possible adult populations and assume sufficient soil moisture for direct development. Dates are estimated from recorded and long term average temperatures. Dates indicate the start of the majority of the population entering the life stage. Expect variation around these dates as any actual egg laying will be different from the nominated dates and hatchings could extend for several weeks. * No known significant population.

Australian plague locust***Chortoicetes terminifera*****SITUATION FOR NOVEMBER AND FORECAST TO MID-JANUARY 2010****NEW SOUTH WALES****CENTRAL WEST****Lachlan, Central West and Central North Livestock Health & Pest Authority****Locusts and conditions**

- Many small swarms formed in the Coonamble–Baradine and Collie–Warren areas at the start of November and in mid-November in the Trangie–Tottenham and Peak Hill–Tullamore areas. Most activity has been in the Central West LHPA, but there were some swarms in adjacent parts of the Central North and Lachlan LHPA areas. Swarm density egg laying was identified between Coonamble and Baradine from 4 November. Swarm activity declined in the Coonamble area in mid-November, but continued in the Parkes–Tullamore area. There were widespread Present–Numerous density nymphs at various development stages throughout the Central West and northern Lachlan LHPA, but densities declined in the second half of November.
- Aerial survey in early November identified a number of swarms covering a total area of up to 10,000 ha to the south and east of Coonamble. Swarms were too fragmented and widely separated to present suitable targets for aerial control by the APLC.
- Control by landholders, LHPA staff and APLC made a significant impact on the nymph population, resulting in fewer than expected swarms in the Central West. While swarm numbers declined in the Coonamble area in mid-November, swarm activity increased in the Trangie–Dandaloo, Tullamore–Trundle and Peak Hill–Alectown areas.
- Localised high density swarm density egg laying was identified on a single property between Coonamble and Baradine on 4 November and continued at that site for more than a week. Hatching of nymphs began on November 20. However, there were few other observations or reports of egg laying in the Coonamble district, despite many small swarms identified earlier in November.
- Locust reports from the Central West and northern Lachlan LHPA areas continued throughout November and by the end of the month Industry and Investment NSW had received over 400 locust reports.
- There were reports of low density nymphs at various development stages from the Kingstown area at the eastern edge of Central North LHPA in mid-November.
- Survey in mid-November in the Forbes–Trundle–Condobolin area identified widespread Numerous density adults and consistent counts of Present density late instar nymphs. In the Peak–Hill Tullamore area there were Concentration density and several swarms of young adults along with Numerous–Sub-band density late instar nymphs.
- There were localised storm rains in parts of the Coonamble area and light-moderate falls (20–40 mm) in the Central North LHPA during the first week of November. Pasture conditions are suitable for nymph survival with some perennial grass growth in November. There light rains in Lachlan LHPA in the last week of November.

Forecast

- Hatching commenced at a known swarm laying site east of Coonamble on 20 November and will continue during early December, as a result of two weeks of continued egg laying. Egg laying and egg pod density at that location was very dense, with estimates of up to 2000 pods/m². Bands formed at the end of November and fledging of early hatched nymphs will begin in mid-December.
- Fledging of the bulk of the population in the Peak Hill–Alectown, Tullamore–Trundle and Parkes–Forbes areas occurred in the first half of November and some swarm activity may continue in these areas in December.
- Surveys in adjacent regions in NSW found little evidence of significant migration from the Central West population. However the decline in the number of swarms was more rapid than expected and few reports of egg laying have been received, despite rainfall in early November. Some emigration from the Central West may have occurred after mid-November and could continue in early December.
- The likelihood and timing of any further egg laying events will be influenced by rainfall in December.

Risk(s)

- There is a declining risk of localised damage to remaining crops from remaining swarms during early December.
- While there is a moderate risk of some Bands developing in the Coonamble district of the Central West LHPA during December, there is a reduced likelihood of a large summer infestation in the Central West.

Landholder reporting of locust activity is important for monitoring a possible summer generation in the Central West.

All locust activity should be reported to your Livestock Health and Pest Authority or Primary Industries, Industry and Investment NSW. A toll-free call to the APLC can be made on 1800 635 962. An answering machine is attached for after-hours calls. Reports can be emailed to APLC at locust.report@daff.gov.au or sent through the web page at <http://www.daff.gov.au/aplc>.

RIVERINA**Riverina and Hume Livestock Health & Pest Authority****Locusts and conditions**

- Nymphs in the Binya–Barellan area north of Narrandera fledged in the first half of November and several swarms formed in the middle of the month. Elsewhere in the region adult densities were generally low and there were low density late instar nymphs in a number of areas.
- There were several swarms of fledglings and young adults, along with Numerous density fourth and fifth instar nymphs in 5 x 7 km area to the north of Binya and Barellan in mid-November. Sampled adults showed little fat and no egg development.
- Surveys in mid-November identified Scattered–Numerous density adults and Present–Numerous density late instar nymphs in the Balranald–Kyalite and Hillston–Booligal areas. In the Morundah–Urana area there were Isolated–Scattered density adults and occasional first and fourth instar nymphs.
- Early instar nymphs were reported from an irrigated area near Finley in mid-November.
- There were *Austroicetes cruciata* adults in the Morundah–Narrandera area with Concentration density in several locations.
- There was widespread moderate rainfall (20-40 mm) throughout the southern Riverina during 16–23 November. Pastures retained some perennial growth in November and further response will occur in southern areas that received moderate rainfall.

Forecast

- Continued fledging of remaining nymphs throughout the Riverina region at the start of December and possible redistribution of swarms at Binya will produce an overall increase of adults to Numerous density. Egg laying by this adult generation is possible in early December, particularly in those parts of the southern Riverina that received moderate–heavy rain in late November. Adults could congregate in these areas and some swarm density egg laying is possible. Any subsequent nymphs would appear in the second half of December.
- There is likely to be some migratory redistribution to areas which received rainfall late November.
- Early instar nymphs in a few locations in November indicate low density breeding followed rainfall in mid-October. Fledging of this cohort in mid-December will maintain a low density adult population.
- Some Immigration of adults from the Lachlan and Central West LHPA areas is still possible during December.

Risk(s)

- There is a moderate risk of sporadic egg laying in areas which received rains in late November and of medium density nymphs developing in some areas in December.
- There is a continuing moderate risk of immigration from the Central West during December.

NORTHWEST SLOPES & PLAINS

Northwest Livestock Health & Pest Authority

Locusts and conditions

- Surveys in early November in the Moree and Walgett districts detected only low density adults in most areas and no evidence of significant breeding.
- Survey identified occasional Isolated density adults in most areas, but Numerous density adults were found in the Carinda area and Scattered density adults near Pilliga in southern Walgett district.
- Nymphs at a range of growth stages were reported near Baan Baa, south of Narrabri, in mid-November.
- There were light rains (<20 mm) in parts of the Moree, Narrabri and Northern Slopes districts during the first week of November. Pastures are drying out in this region.

Forecast

- The low numbers of adults detected indicate that no significant immigration had occurred by early November and there were no reports after that time. Higher numbers in the Carinda and Pilliga areas could have resulted from daytime movements. If immigration occurred after that time some sporadic egg laying may have occurred in the Walgett or Narrabri areas.
- Any egg laying in early November could produce low–medium density nymphs in December.
- Some immigration from the Central West is possible during December.

Risk(s)

- There is a declining risk of significant immigration from Central West LHPA during December, but a population increase as a result of local breeding is possible.

FAR WESTERN

Darling and part Western Livestock Health & Pest Authority

Locusts and conditions

- Survey in early November indicated a low density population, along with some mid-instar nymphs, in the Bourke area of Darling LHPA. Further survey in mid-November found very few locusts in the Western LHPA and vegetation remained very dry.
- Survey during 16–20 November identified occasional Isolated density adults in the Wanaaring, Tibooburra, White Cliffs and Wilcannia districts. There were isolated–Scattered density adults in the Bourke–Louth area. No nymphs were detected during this survey.
- There was no evidence of a population increase as a result of significant immigration into this region. The very dry vegetation was unsuitable for locust breeding in all districts except Bourke and Brewarrina during November.
- No significant locust catches were recorded in the Fowlers Gap or White Cliffs light traps during November.
- There was moderate–heavy rainfall (20–>40 mm) in the Tibooburra, White Cliffs and Wanaaring districts and light falls (<20 mm) in the Cobar and Bourke districts in the last week of November.

Forecast

- Some immigration from the Central West LHPA is still possible during early December. Any breeding will be dependent on rainfall during December.
- The heavy rains at the end of November will produce suitable for locust egg locust breeding and egg laying, which could result in a nymph generation from mid-December.

Risk(s)

- There is a declining risk of immigration of locusts from Central West NSW during November.
- There is a risk of an increase in population if sufficient adult numbers enter the Tibooburra–White Cliffs area in early December.

FAR SOUTHWEST

Western Livestock Health & Pest Authority

Locusts and conditions

- Surveys in November indicated that some nymphal mortality had occurred in the Ivanhoe–Menindee area, but survival of a widespread low density nymph population produced Numerous density young adults in the Ivanhoe area. Widespread heavy rain in November could result in a significant population increase.
- Surveys in early and mid-November detected Present density fourth and fifth instar nymphs density nymphs in many locations in the Ivanhoe and Balranald–Wentworth districts. In the Ivanhoe–Mossgiel area there were localised Numerous and Concentration density young adults, and Isolated–Scattered density adults in other areas.
- There widespread moderate–heavy rainfall (20–>40 mm) across the Wentworth-Balranald and Broken Hill districts during 16–23 November, and further moderate falls in the last week of the month. Summer perennial pasture grasses will respond in many areas in December.

Forecast

- Survival and fledging of nymphs in the Ivanhoe district and Wentworth districts will lead to an overall increase in adult population to Numerous density in early December.
- Moderate–heavy rains across this region in mid and late November will provide suitable soil and vegetation conditions for breeding and egg laying. Egg laying could occur in early December after the young adult population matures and widespread medium density nymphs are likely to appear from the middle of the month. A significant adult population increase is likely during January.
- Some redistribution is likely in late November and early December and adults may concentrate in areas of recent rainfall on suitable habitats. Small scale emigration to Northwest Victoria or Northeast SA is also possible.

Risk(s)

- There is a moderate risk of a significant second generation of nymphs developing in late December as a result of a maturing adult population and widespread heavy rains.

All locust activity should be reported to your Livestock Health and Pest Authority or Primary Industries, Industry and Investment NSW. A toll-free call to the APLC can be made on 1800 635 962. An answering machine is attached for after-hours calls. Reports can be emailed to APLC at locust.report@daff.gov.au or sent through the web page at <http://www.daff.gov.au/aplc>.

QUEENSLAND

SOUTHWEST**Barcoo, Bulloo, Quilpie and Diamantina Shire****Locusts and conditions**

- Quilpie, Barcoo and Bulloo Shires were surveyed in early November. Population density remained low in this region, but some migratory activity was reported in mid-November.
- There were consistent Isolated density adults in the Stonehenge–Windorah, Eromanga and Quilpie–Adavale areas. No locusts were recorded in northern Bulloo Shire.
- The Nooyeah Downs light trap recorded more than 60 locusts on 18, 21 and 25 November and Numerous density adults were noticed in the surrounding area from 14 November. Locusts were also reported from near Eromanga and Jackson oil fields around the same time.
- There was moderate–heavy (20–>40 mm) rainfall in parts of all Shires during the last week of November. Vegetation will respond to this rainfall in December, but sustained growth may be limited to drainage areas if there is no further rainfall.

Forecast

- Vegetation conditions in most of this region were unsuitable for locust breeding during spring. The area around Quilpie did receive sufficient rainfall to allow egg laying in late October and there has been a consistent background population there for several months. Some breeding was therefore possible in early November and late instar nymphs may be found in December.
- The Nooyeah Downs light trap catches and reports of locusts indicate increased activity from mid-November in the region. Population level was very low around Thargomindah in early November, so redistribution and immigration is likely to have occurred. The sources of any migrants to Bulloo Shire are uncertain.
- Heavy storm rains in parts of the region in the last week of November will provide suitable soil and vegetation conditions for a population increase. Egg laying is likely in early December and nymphs could develop in locust habitat areas after mid-December. Fledging of nymphs would follow in the second half of January.
- There is high probability of a population increase during December, but the widespread survival of nymphs may be restricted to habitats near drainage areas.

Risk(s)

- There is a moderate risk of a population increase as a result immigration and egg laying in areas which received heavy rainfall during the last week of November.

CENTRAL WEST & NORTHWEST**Longreach, Barcaldine and Blackall-Tambo Regional Council. Boulia, Cloncurry, Flinders, McKinlay, Mt Isa, Richmond and Winton Shire****Locusts and conditions**

- Parts of the Longreach and Blackall-Tambo Regional Council areas were surveyed in early November. Population density remained low in these areas.
- To the south of Blackall there was a consistent background population of Isolated–Scattered density adults and Present density third and fourth instar nymphs. Only occasional Isolated density adults were detected in the Longreach–Stonehenge area.
- No significant numbers of this species were caught in the Longreach or Julia Creek light trap during November.
- The consistent adult counts and nymphs in the area south of Blackall suggest the population has been maintained by spring breeding. There may also have been some migration from this area to the Southwest region during November.
- The Tambo area received moderate rainfall (20–40 mm) in the first and second week of November. There were heavy storm rains in the last week of November in Boulia, Mt Isa and Cloncurry Shires, with moderate falls in Winton Shire.

Forecast

- Consistent adult counts and nymphs in the area south of Blackall suggest the population has been maintained by spring breeding. There may also have been some migration from this area to the Southwest region during November.
- There was only light rainfall in the southern half of the Central West during November, which may have restricted opportunities for further locust breeding, but several falls in the Tambo area could allow some population development.
- Heavy storm rains in the Northwest region could result in locust breeding and a population increase during December and January.

Risk(s)

- There is a low risk of a moderate increase in population from breeding following summer storm rains.

CENTRAL HIGHLANDS**Central Highlands and Isaac Regional Council****Locusts and conditions**

- Survey was not conducted in this region during November and there were no reports of locust activity. Population density is expected to have remained low.
- There were patchy moderate–heavy (20–>40 mm) storm rains in this region during 8–15 November.

Forecast

- Given the very low population level in the region, even with some breeding in December there is unlikely to be a large increase in population.

Risk(s)

- No significant risks are identified for this region during the forecast period.

SOUTH CENTRAL QUEENSLAND & DARLING DOWNS**Balonne, Murweh and Paroo Shire. Roma, Dalby and Goondiwindi Regional Council.****Locusts and conditions**

- Limited survey in November identified a continuing low density population.
- Isolated density adults were identified south of Cunnamulla in Paroo Shire and there were occasional isolated density adults in Balonne Shire and Goondiwindi Regional Council area. No nymphs were detected on survey.
- Locusts were reported from the Pittsworth area near Toowoomba in mid-November.
- There was heavy rainfall (>40 mm) in parts of Dalby Regional Council area in the first week of November, and light falls in the Roma area. Further light rains fell in the Roma, Balonne and Dalby districts during 16–23 November. Pasture vegetation is drying out over most of this region.

Forecast

- Survey was conducted after heavy rainfall in late October, but no increase in adult density from potential immigration was detected. It is possible that some immigration or local egg laying occurred in early November and any resulting nymphs would be at mid-instar stage in the first half of December.
- Some localised breeding may have occurred in the Dalby Regional Council area in November.
- There is a low probability of immigration from NSW, but the population in the Coonamble area declined during November.

Risk(s)

- There is a declining risk of immigration from NSW during December, but local breeding in parts Darling Downs could result in a population increase in December and January.

Locust activity should be reported to Biosecurity Queensland (Queensland Primary Industries & Fisheries). A toll free call to the APLC can be made on 1800 635 962. An answering machine is attached for after-hours calls. Reports can be emailed to APLC at locust.report@daff.gov.au or sent through the web page at <http://www.daff.gov.au/aplc>.

SOUTH AUSTRALIA

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

- There were no surveys during November and no reports of locust activity.
- The Dulkaninna and Oodnadatta light traps recorded no locust activity during November.
- There was moderate-heavy rainfall (20→40 mm) in the Northeast and Northwest regions during 16-23 November. In the last week of November further moderate-heavy rain fell in the Far North region.

Forecast

- Vegetation conditions will be favourable for locust breeding and egg laying in the Northeast, Murray Valley and Northwest and Far North regions during early December. An increase in population from very low levels is likely, but complete development of nymphs could be restricted to drainage areas where, in the absence of further rainfall, vegetation response would be sustained. If egg laying occurs, nymphs would appear from mid-December, followed by and an increase in adult density in January.
- Some Immigration from NSW or Qld is possible in early December, as there are only low density populations in adjacent regions of these states. However, immigration to Southwest Qld and Far West NSW in late November could result in widespread egg laying and a large adult population in January
- The southern Flinders Ranges area received frequent rains over the last two months and it is possible that the population may have increased above background levels in some areas. The widespread moderate and heavy rainfall throughout that region during 16–23 November will provide a further opportunity for egg laying by any resident population.

Risk(s)

- There is a moderate risk that heavy storms in November could result in a population increase as a result of breeding by local populations.
- There is a low risk of immigration of immigration into parts of the Far North and Northeast regions in early December, but a risk could increase in January if there is a large nymph population in Southwest Qld and western NSW in December.

Locust activity should be reported to Primary Industries & Resources SA (PIRSA) or to the Commission. A toll-free call to the APLC can be made on 1800 635 962. An answering machine is attached for after-hours calls. Reports can be emailed to APLC at locust.report@daff.gov.au or sent through the web page at <http://www.daff.gov.au/aplc>.

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

- Surveys by DPI Victoria in the area north of Shepparton in November identified very few locusts.
- There was widespread light–moderate rainfall (<20–40 mm) across northern Victoria during 16–23 November and again in the last week of the month.

Forecast

- Some low density breeding of the resident population in North Central Victoria is possible in early December, which could produce nymphs in late December.
- There is the potential of some low density immigration into Northwest Victoria from Far Southwest NSW in early December and egg laying could produce some nymphs in some areas.

Risk(s)

- There is a low risk of some immigration into Northwest Victoria in early December.
- The risk of immigration will increase in January if there is a significant nymph population in western NSW in late December.

Locust activity should be reported to the Department of Primary Industries, Victoria on 1300 135559. A toll-free call to the APLC can be made on 1800 635 962. An answering machine is attached for after-hours calls. Reports can be emailed to APLC at locust.report@daff.gov.au or sent through the web page at <http://www.daff.gov.au/aplc>.

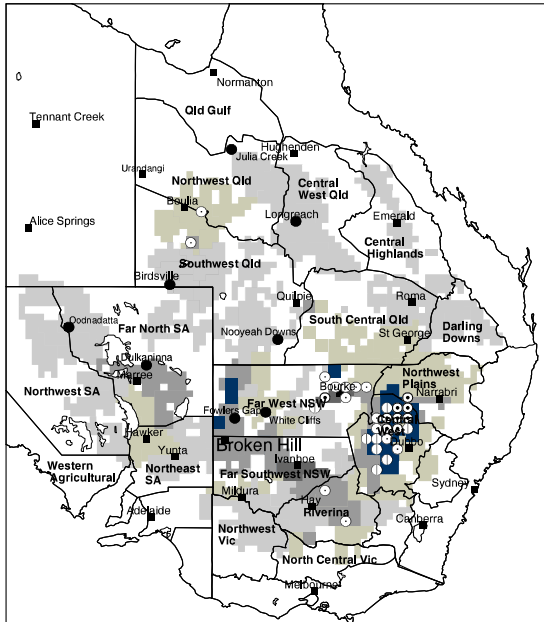
WESTERN AUSTRALIA**CENTRAL AND WESTERN AGRICULTURAL REGIONS**

- Updates and details of the locust situation are available from the Western Australian Department of Agriculture and Food. The Department website has locust information pages at <http://www.agric.wa.gov.au>

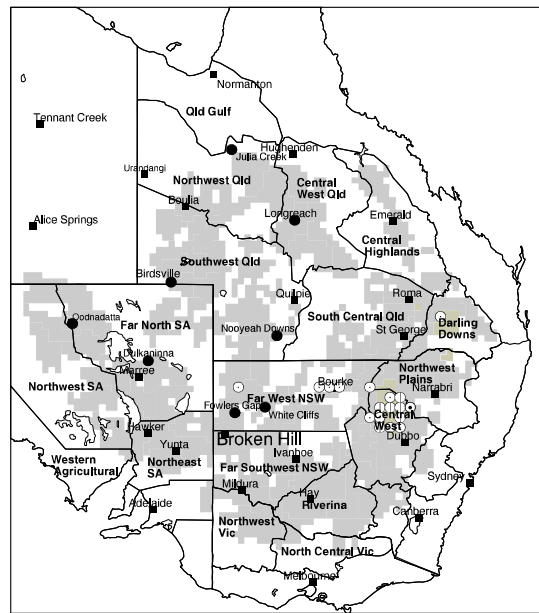
Previous distribution maps

Previous Australian Plague Locust Distributions

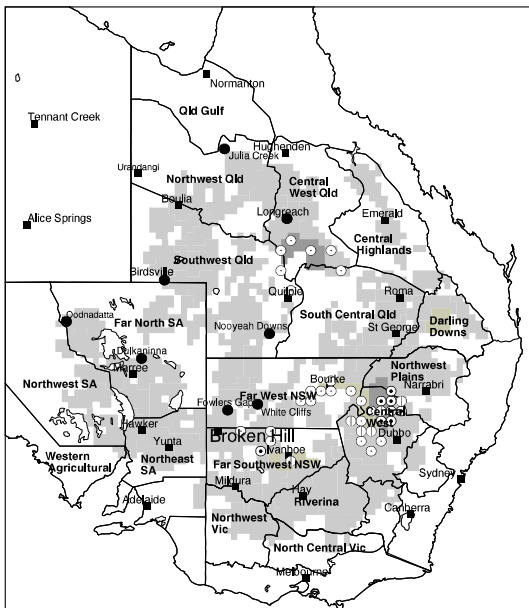
April 2009



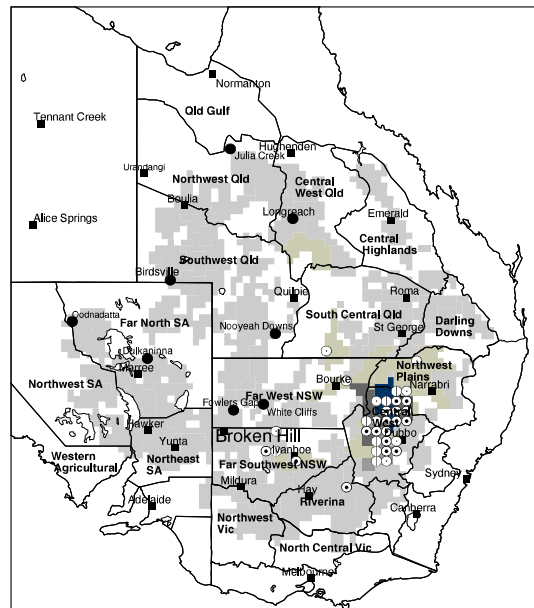
August 2009



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Densities estimated for areas of locust habitat, based on survey and reports

nymphal density

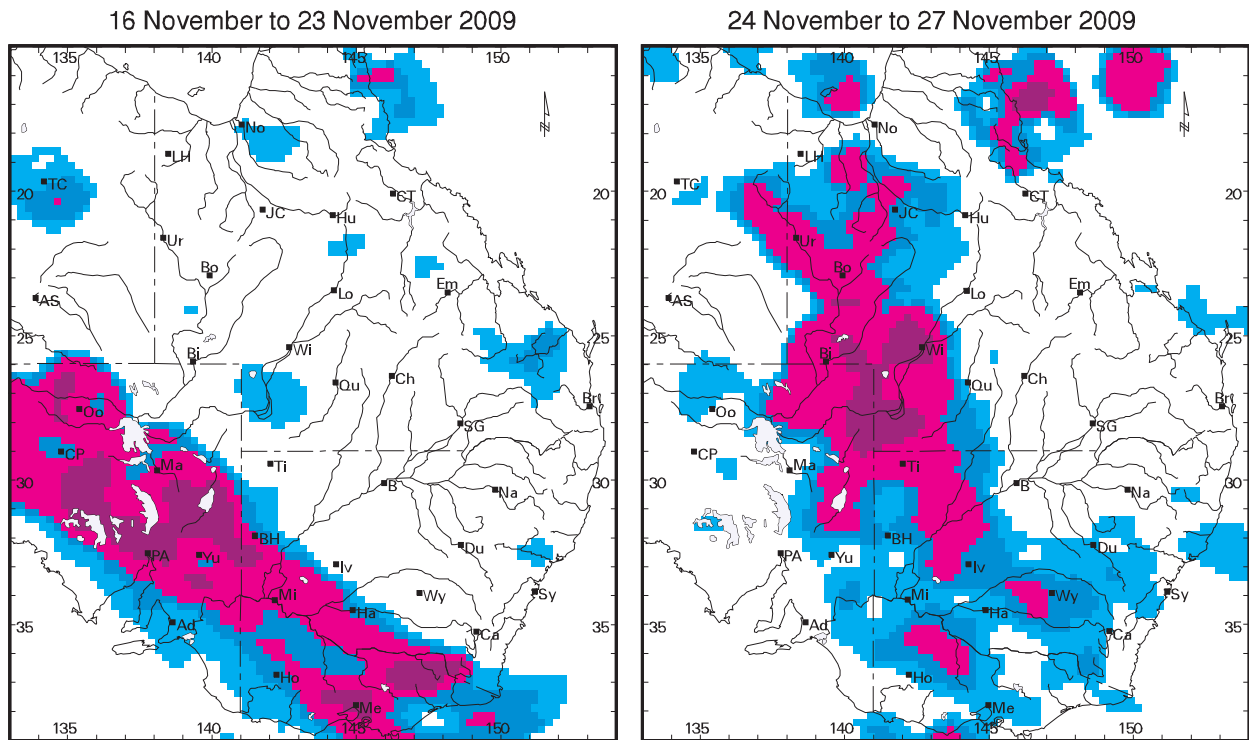
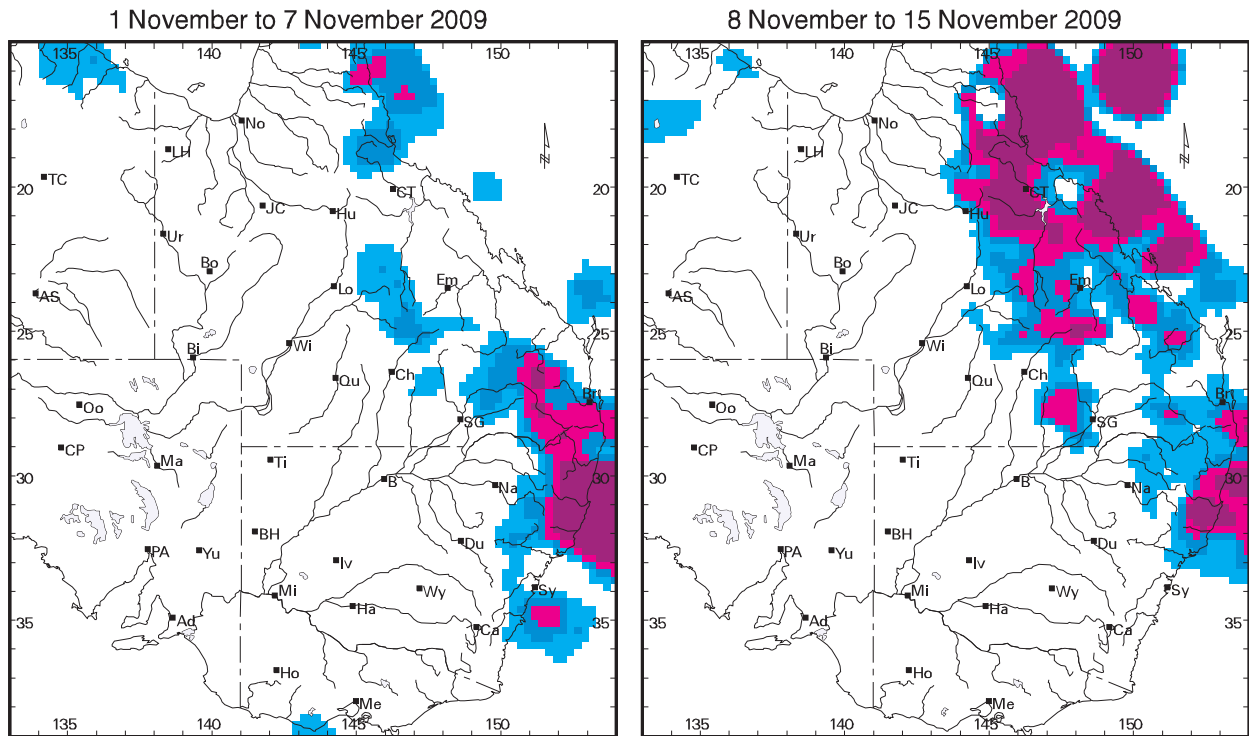
adult density

- present
- ⊙ numerous-subband
- ⦿ band

- nil-isolated
- isol-scattered
- scat-numerous
- num-concentration
- SWARMS present

Rainfall maps

Rainfall Distribution

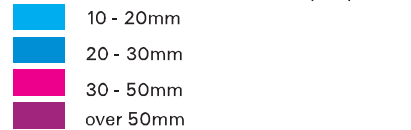


Shows major rainfall events during previous forecasting period

Source: Bureau of Meteorology- National Climate Centre (SILO)

Base: Geoscience Australia TOPO-10M Reference: geographic

Rainfall total to 9:00am on last day of period



Place name key for rainfall distribution map

Queensland

Bo	Boulia
Br	Brisbane
Bi	Birdsville
Ch	Charleville
CT	Charters Towers
Em	Emerald
Hu	Hughenden
JC	Julia Creek
LH	Lawn Hill
Lo	Longreach
No	Normanton
Qu	Quilpie
SG	St. George
Ur	Urandangi
Wi	Windorah

Northern Territory

AS	Alice Springs
TC	Tennant Creek

South Australia

Ad	Adelaide
CP	Coober Pedy
Ma	Marree
Oo	Oodnadatta
PA	Port Augusta
Yu	Yunta

Victoria

Ho	Horsham
Me	Melbourne
Mi	Mildura

New South Wales

B	Bourke
BH	Broken Hill
Du	Dubbo
Ha	Hay
Iv	Ivanhoe
Na	Narrabri
Sy	Sydney
Ti	Tibooburra
Wy	West Wyalong

Aust. Capital Territory

Ca	Canberra
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Glossary of locust density terms and abbreviations used in the Locust Bulletin

Where higher densities occur, a large proportion of the regional population is concentrated in 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

Adult Densities

	Number per m ²		Number per hectare
Isolated	-	0.02	< 200
Scattered	0.03	- 0.1	>200 – 1000
Numerous	0.2	- 0.5	>1000 – 5000
Concentration	0.6	- 3.0	>5000 – 30,000
Low Density Swarm	4.0	- 10	>30,000 – 100,000
Medium Density Swarm	11	- 50	>100,000 – 500,000
High Density Swarm	>	50	>500,000

General density classes

very low, occasional
low
medium
high

Nymph densities

Nil-Present
Present-Numerous
Numerous-Sub-band
Bands

Adult densities

Nil-Isolated
Isolated-Scattered
Scattered-Numerous
Concentration-Swarms

Reporting locust infestations

It is important that all locust activity is reported as soon as possible to your nearest Department of Primary Industries office or to the Australian Plague Locust Commission.

State	Authority to report locust infestations to
New South Wales	Livestock Health & Pest Authority (LHPA) or Primary Industries, Industry and Investment NSW.
Queensland	Biosecurity Queensland (Primary Industries & Fisheries).
South Australia	Primary Industries & Resources South Australia (PIRSA) (Plant Health: 1300 666 010)
Victoria	Department of Primary Industries, Victoria.

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

Free call (Canberra): 1800 635 962 (24 hours)
 Fax (Canberra): (02) 6272 5074
 E-mail: locust.report@daff.gov.au
 Internet: <http://www.daff.gov.au/aplc>

Map of forecasting districts used in the Bulletin

