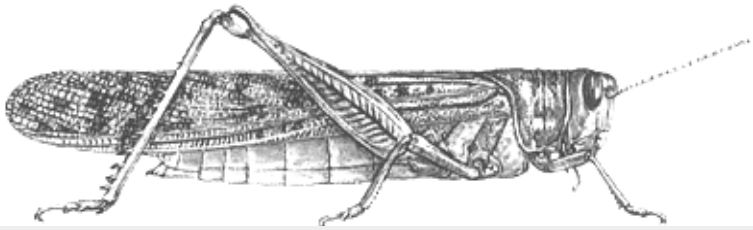

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations

No. 268
(6 Feb 2001)

General Situation during January 2001
Forecast until mid-March 2001

The Desert Locust situation improved during January with locust populations reaching only insignificant levels in Mauritania and on the western side of the Red Sea. No control operations were required in central and western Mauritania where an outbreak had occurred during the past few months. Although conditions remain favourable along both sides of the Red Sea, no breeding has been detected so far. Unless unusually heavy rains occur in northern Mauritania or along the Red Sea coast, the situation is expected to remain calm during the forecast period.

Western Region. Locust numbers declined in central and western **Mauritania** during January where only scattered adults and hoppers are now present. Although another generation of breeding is in progress as a result of favourable conditions that have persisted longer than expected, the number of adults and hoppers remain low. Scattered adults have moved into northern Mauritania from the earlier outbreak areas and limited breeding is in progress there in at least one location. Late reports from **Mali** indicate that hopper bands mixed with adults were present in December and January at several places in the north near the Algerian border. There was also an unconfirmed report of similar infestations in southern **Algeria**. Additional adults may move into northern Mauritania and southern Algeria from northern Mali during periods of warm southerly winds. No locusts were reported from other countries in the Region.

Central Region. Scattered adults are present on the Red Sea coastal plains of **Sudan** and south-eastern **Egypt** as well as in a few cropping areas near Lake Nasser, Egypt. Although those in Sudan were seen laying, so far no hoppers have been reported. Conditions are likely to be favourable in parts of the Red Sea coastal plains of **Eritrea**, **Saudi Arabia** and **Yemen** but no reports have been received and probably no surveys carried out. The absence of surveys is potentially risky but the locust situation in these countries is most likely similar to that of Sudan.

Eastern Region. No locusts were reported in **Iran**, **Pakistan** and **India**. A few adults may appear in spring breeding areas of Baluchistan, Pakistan and start to lay on a small scale in areas of recent rainfall. No significant developments are likely.

The FAO Desert Bulletin is issued monthly, supplemented by Updates during periods of increased Desert Locust activity, and is distributed by fax, e-mail, FAO pouch and airmail by the Locusts and Other Migratory Pests Group, AGP Division, FAO, 00100 Rome, Italy. It is also available on the Internet.
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Facsimile: +39 06 570.55271
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Telex: 610181 FAO 1
Internet: http://www.fao.org/news/global/locusts/locuhome.htm

Weather & Ecological Conditions in January 2001

Very little rain fell during January in the Desert Locust recession area apart from some showers on the eastern coast of the Red Sea. Nevertheless, breeding conditions remain favourable from earlier rainfall in parts of northern Mauritania and in some areas along both sides of the Red Sea.

In **West Africa**, no significant rainfall was reported during January for the second consecutive month. Several depressions moved eastward across the Mediterranean. A few of the stronger ones interrupted the prevailing northerly and north-easterly winds over locust breeding areas, causing the winds to come from the south and south-east. This was most evident over western and northern Mauritania on the 21st. Cool temperatures prevailed throughout the Region. In Mauritania, maximum and minimum temperatures were 20-30°C and 9-15°C respectively. Breeding conditions were generally unfavourable except for a few limited areas near Atar and Zouerate in central and northern Mauritania. Localized patches of green vegetation were reported in a few places of the northern Adrar des Iforas, Mali.

In **North-West Africa**, no significant rainfall was reported during January. The month was characterized by a dominant high pressure system that oscillated between Algeria and Libya. Occasionally, this was interrupted by a few strong low pressure systems over the Mediterranean causing the prevailing northerly and north-easterly winds to shift and come from the south. This was most evident over southern Algeria on 12-14 January and again on the 29th. Cool temperatures were common in most areas. In the central Sahara of Algeria, maximum and minimum temperatures were 16-27°C and 2-11°C, respectively. Conditions were dry in the Region except for a few small wadis in the northern part of Tassili N'Ajjer, Algeria, where green vegetation continued to be present.

In **Eastern Africa**, no significant rainfall was reported along the Red Sea coastal plains or in the interior. A few traces fell on the Red Sea coastal plains of Sudan at Khor Gowb at the end of the month. Nevertheless, conditions are favourable for breeding in a few areas along the coast in Sudan between Port Sudan and Tokar, in Egypt between Abu Ramad and Halaib and perhaps in Eritrea between Massawa and Karora. Dry conditions were reported in eastern Ethiopia.

In the **Near East**, light rains fell on the northern Red Sea coast of Saudi Arabia during the first week of January and on the southern coast near Jizan at the end of the month. Heavier rains were reported during the same periods on the Red Sea coastal plains of Yemen from Hodeidah to the Saudi Arabian border. As rains have fallen in these areas for the past few months, conditions continue to be favourable for breeding within a long stretch of coastal plains from Hodeidah to Jeddah. Widespread light to moderate showers fell over the Persian Gulf in early January which extended to the northern coast of Oman. In the latter, conditions may be improving but additional rainfall may be required for breeding.

In **South-West Asia**, light showers fell in northern Baluchistan, Iran (Zahedan, 13 mm) and in Karachi, Pakistan. Breeding conditions are likely to be improving in a few areas of Baluchistan, Pakistan, primarily near Turbat and Jiwani, from good rainfall received during December. Dry conditions prevailed in India.

Area Treated

No control operations were reported during January.

Desert Locust Situation and Forecast

(see also the summary on the first page)

WEST AFRICA

Mauritania

• **SITUATION**

During January, there was a decline in the number of infested areas and in the locust densities in central and western Mauritania where locusts were present during December. In early January, another generation of breeding was in progress in the interdunal areas south of Atar (2032N/1308W) where solitarious and transiens adults, at densities up to 1,500 per ha, were seen copulating and first instar hoppers were reported until the 23rd. The first instar hopper densities were low except for one location where 7 hoppers per

sq. m. were seen on 40 ha on the 18th. By the end of the month, adult densities had declined to 700 per ha. New reports from the north of scattered maturing solitarious adults at several places between Zouerate (2244N1221W) and Bir Moghrein (2510N/1135W) confirm that there was a small scale movement northwards from the infested areas near Atar. This movement almost certainly commenced in November and continued at times over the next few months during periods of warm southerly winds. Limited laying probably occurred in November with hatching in December as suggested by a single report of isolated fourth and fifth instar hoppers north-east of Zouerate on 30 January. No control operations were carried out during January.

• **Forecast**

Breeding is likely to continue on a limited basis in the north between Zouerate and Bir Moghrein and in southern Adrar near Atar. Hopper maturation is expected to be delayed by cool temperatures in these areas. Locust numbers may increase slightly in Tiris Zemmour once adults arrive from southern Adrar which should occur when temperatures increase from the end of February onwards and when there are periods of warm southerly winds. Additional adults could also appear from northern Mali at this time.

Mali

• **Situation**

A late report indicated that late instar hopper bands mixed with adults were present throughout December at five locations in the northern Adrar des Iforas near Tadjilit (1930N/0237E), Amsir (1959N/0145E), and In-Tillit (2050N/0112E).

The same situation continued during January in the extreme north of the Adrar des Iforas near the Algerian border.

• **Forecast**

Low numbers of adults are likely to persist in a few wadis of the Adrar des Iforas and perhaps in the Timetrine area. Some of these could move northwards during periods of warm southerly winds.

Niger

• **Situation**

No reports received.

• **Forecast**

A few isolated adults may be present in parts of the Air. No significant developments are expected.

Chad

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Senegal

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Burkina Faso, Cape Verde, Gambia, Guinea Bissau, and Guinea Conakry

• **Forecast**

No significant developments are likely.

NORTH-WEST AFRICA

Algeria

• **Situation**

Although no locusts were reported during January, there was one unconfirmed report of high densities of hoppers and adults in the south near Silet (2240N/0434E).

• **Forecast**

A few hoppers and adults may be present in the south near Tamanrasset and perhaps Djanet. Additional adults could appear from northern Mali during periods of warm southerly winds.

Morocco

• **Situation**

No locusts were reported during January.

• **Forecast**

Low numbers of locusts may be present in parts of the extreme south-west where small scale breeding could occur if rains recently fell.

Libyan Arab Jamahiriya

• **Situation**

No locusts were seen during surveys carried out in the extreme south-east near Jebel Uweinat (2156N/2452E) on 18-22 January.

• **Forecast**

No significant developments are likely.

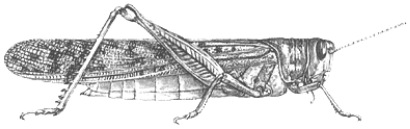
Tunisia

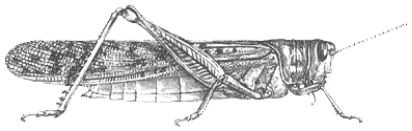
• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.





No. 268

DESERT LOCUST BULLETIN

EASTERN AFRICA

Sudan

• **Situation**

During the first half of January, scattered adults, at densities up to 150 per ha, were seen laying in cropping areas associated with the main wadis along the Red Sea coast between Suakin and Tokar Delta: K. Gowb (1902N/3721E) and K. Ashat (1844N/3728E), and from Suakin to Port Sudan at Hosheri (1918N/3717E) and Handob (1914N/2716E). No surveys were undertaken during the second half of the month.

• **Forecast**

Low numbers of hoppers and adults will persist in a few areas along the Red Sea coastal plains from Port Sudan to Karora and perhaps in subcoastal areas of Wadi Oko/Diib. Breeding is expected to come to an end by March unless further rains fall.

Eritrea

• **Situation**

No Desert Locusts were seen during aerial surveys on 4 and 6 December along the Red Sea coastal plains between Mahmimet (1740N/3832E) and Marsa Fatima (1452N/4018E). No reports were received during January.

• **Forecast**

Low numbers of solitarious adults are likely to be present and breeding on a small scale in a few areas along the Red Sea coastal plains between Tio and Karora where rains have fallen or runoff has occurred. Consequently, locust numbers will gradually increase during the forecast period but no significant developments are likely.

Somalia

• **Situation**

No reports received

• **Forecast**

Low numbers of adults are likely to be present and breeding in a few areas along the coast and on the escarpment where ecological conditions are favourable. No significant developments are likely.

Ethiopia

• **Situation**

No locusts were reported during January in the Dire Dawa and Jigjiga areas.

• **Forecast**

No significant developments are likely.

Djibouti

• **Situation**

No surveys were carried out during January.

• **Forecast**

No significant developments are likely.

Kenya, Tanzania and Uganda

• **Forecast**

No significant developments are likely.

NEAR EAST

Saudi Arabia

• **Situation**

No reports received

• **Forecast**

Low numbers of solitarious adults are likely to be present and breeding on a small scale in a few places along the Red Sea coast between Jeddah and Jizan. Consequently, locust numbers will slowly increase during the forecast period. Regular surveys are suggested to monitor the situation.

Yemen

• **Situation**

No surveys were carried out during January.

• **Forecast**

Low numbers of solitarious adults are expected to be present and breeding on a small scale in a few places of the Red Sea coastal plains in areas of recent rainfall. Consequently, locust numbers will slowly increase during the forecast period. Regular surveys are suggested to monitor the situation.

Egypt

• **Situation**

During January, isolated immature adults were reported in a few cropping areas along Lake Nasser and near Tushka (2247N/3126E) as well as in several wadis along the south-eastern Red Sea coastal plains between Abu Ramad (2224N/3624E) and Halaib (2212N/3635E) and in subcoastal areas near Wadi Diib.

• **Forecast**

Low numbers of adults will continue to persist and mature in a few places along the Red Sea coastal plains between Shalatyn and Halaib as well as in subcoastal areas. Small scale breeding is expected to occur in those areas that received rainfall in December. Scattered adults may persist in cropping areas near Lake Nasser.

Kuwait

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Oman

• **SITUATION**

No locusts were seen during surveys were carried out in January in the northern interior.

• **FORECAST**

No significant developments are likely.

United Arab Emirates

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Qatar, Syria Arab Republic and Turkey

• **FORECAST**

No significant developments are likely.

SOUTH-WEST ASIA

Iran

• **SITUATION**

No locusts were seen during surveys carried out in January near Busheir and on the south-eastern coastal plains near Chabahar.

• **FORECAST**

A few isolated adults may start to appear in coastal areas near Chabahar. No significant developments are likely.

Pakistan

• **SITUATION**

No locusts were reported during the second half of December and during the first half of January.

• **FORECAST**

A few isolated adults may appear in coastal areas of Baluchistan and start to lay on a small scale in areas of recent rainfall. No significant developments are likely.

India

• **SITUATION**

No locusts were reported during January.

• **FORECAST**

No significant developments are likely.

Afghanistan

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Announcements

Locust reporting. Affected countries are kindly reminded to make sure that locust situation reports are sent to FAO HQ by the 25th day of the month so the information can be included in the FAO bulletin for the current month; otherwise, it will not appear until the following month. Reports should be sent even if no locusts were found or if no surveys were conducted.

Reporting by email. Affected countries are encouraged to send completed *FAO Desert Locust Survey and Control Forms* with a brief interpretation of the results by email to eclo@fao.org.

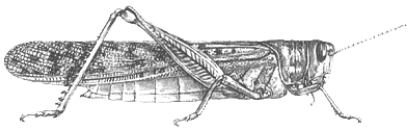
Jebel Uweinat, Libya. Photos of the recent mission to Jebel Uweinat to analyze a Desert Locust outbreak that occurred in early 1999 are available on the internet at: http://www.fao.org/news/global/locusts/libyapix/0101uwnt.htm

Western Region Desert Locust Commission. The 119th session of the FAO Council has approved in November 2000 the establishment of a new FAO Desert Locust Commission for the Western Region which will be composed of nine countries from West and North-West Africa: Algeria, Chad, Libya, Mali, Mauritania, Morocco, Niger, Senegal and Tunisia.

EMPRES (Desert Locust) Western Region Programme. A Planning Workshop: EMPRES activities in the Western Region – Phase I: Pledges and operations, will be held in Nouakchott, Mauritania from 10-15 February 2001.

The Commission for Controlling the Desert Locust in North-West Africa. The 23rd Session will be held in Algiers, Algeria from 2-7 June 2001.

Desert Locust Control Committee. The 36th Session will be held in Rome from 24-28 September 2001.



Glossary of terms

The following special terms are used in the Desert Locust Bulletin when reporting locusts:

NON-GREGARIOUS ADULTS AND HOPPERS

ISOLATED (FEW)

- very few present and no mutual reaction occurring;
- 0 - 1 adult/400 m foot transect (or less than 25/ha).

SCATTERED (SOME, LOW NUMBERS)

- enough present for mutual reaction to be possible but no ground or basking groups seen;
- 1 - 20 adults/400 m foot transect (or 25 - 500/ha).

GROUP

- forming ground or basking groups;
- 20+ adults/400 m foot transect (or 500+/ha).

ADULT SWARM AND HOPPER BAND SIZES

VERY SMALL

- swarm: less than 1 km^2 • band: 1 - 25 m^2

SMALL

- swarm: 1 - 10 km^2 • band: 25 - 2,500 m^2

MEDIUM

- swarm: 10 - 100 km^2 • band: 2,500 m^2 - 10 ha

LARGE

- swarm: 100 - 500 km^2 • band: 10 - 50 ha

VERY LARGE

- swarm: 500+ km^2 • band: 50+ ha

RAINFALL

LIGHT

- 1 - 20 mm of rainfall.

MODERATE

- 21 - 50 mm of rainfall.

HEAVY

- more than 50 mm of rainfall.

OTHER REPORTING TERMS

BREEDING

- the process of reproduction from copulation to fledging.

SUMMER RAINS AND BREEDING

- July - September/October

WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July

DECLINE

- a period characterised by breeding failure and/or successful control leading to the dissociation of swarming populations and the onset of recessions; can be regional or major.

OUTBREAK

- a marked increase in locust numbers due to concentration, multiplication and gregarisation which, unless checked, can lead to the formation of hopper bands and swarms.

UPSURGE

- a period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to-gregarious breeding in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions.

PLAGUE

- a period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously.

RECESSION

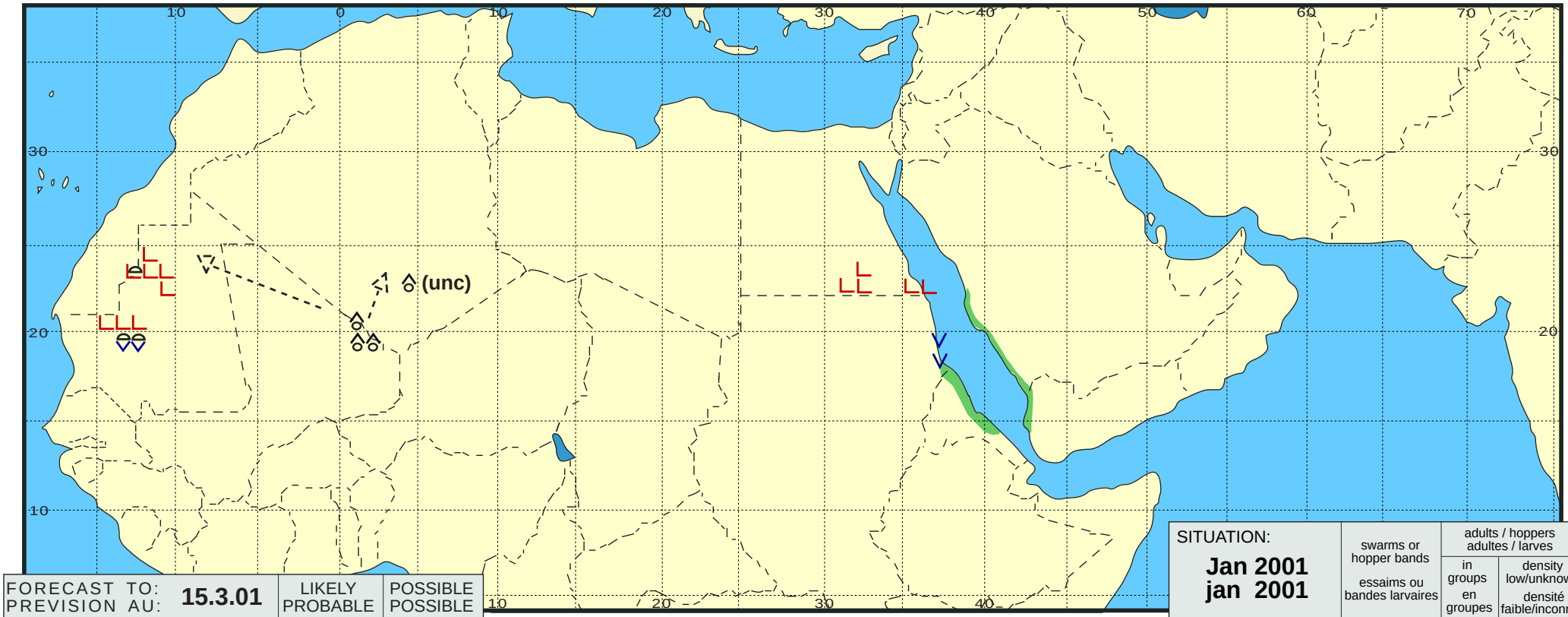
- period without widespread and heavy infestations by swarms.

REMISSION

- period of deep recession marked by the complete absence of gregarious populations.

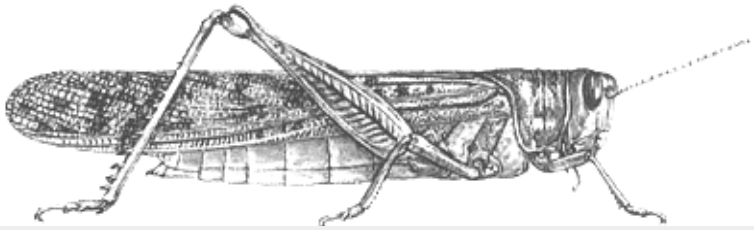
Desert Locust Summary
Criquet pèlerin - Situation résumée

268



FORECAST TO: PREVISION AU: **15.3.01**	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favourables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: **Jan 2001** **jan 2001**	swarms or hopper bands essaims ou bandes larvaires	adults / hoppers adultes / larves	
		in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures	■	□	⊔
mature or partly mature adults adultes matures ou partiellement matures	◣	◺	L
adults, maturity unknown adultes, maturité inconnue	▲	△	⋀
egg laying or eggs pontes ou œufs	▼	▽	⋁
hoppers larves	●	○	◡
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)	◘	◙	⊟



DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations

No. 269
(2 Mar 2001)

General Situation during February 2001
Forecast until mid-April 2001

The Desert Locust situation remained calm during February. Insignificant numbers of locusts were present in Mauritania, on the coastal plains of Egypt and Sudan and in northern Somalia. Very little rain was reported and dry conditions prevailed in most regions except for the Red Sea coastal plains of Yemen and Saudi Arabia where small scale breeding may be in progress. Nevertheless, no significant developments are likely and the situation is expected to remain calm in all countries during the forecast period.

Western Region. Locust numbers continued to decline in central and western **Mauritania** during February for the second consecutive month. Isolated hoppers and adults were present throughout the month in a few locations where breeding previously occurred near Atar and Zouerate. Control was carried out at one place on 18 ha. In **Mali**, there were unconfirmed reports of low densities of hoppers and adults in the northern Adrar des Iforas. No locusts were reported in **Morocco**, **Algeria** and **Libya**. No significant changes in the current situation are anticipated during the forecast period.

Central Region. Scattered adults persisted in a few places on the Red Sea coastal plains of **Sudan** and south-eastern **Egypt** as well as in a few cropping areas near Lake Nasser, Egypt. Small scale and localized breeding occurred on the coast of Sudan south of Suakin where low numbers of hoppers are present. Isolated adults were seen on the central coast of northern **Somalia**. Breeding conditions are likely still to be favourable along some parts of the Red Sea coastal plains of **Saudi Arabia** and **Yemen** but no surveys have been carried out since November. The absence of surveys is potentially risky and regular surveys are suggested to monitor the situation.

Eastern Region. Although no locusts were reported in **Iran**, **Pakistan** and **India**, a few adults may appear in spring breeding areas of Baluchistan, Pakistan and breed on a small scale in areas of recent rainfall. No significant developments are likely.

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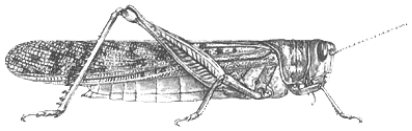


No. 269

DESERT LOCUST BULLETIN

Weather & Ecological Conditions in February 2001

No significant rain was reported during February anywhere in the Desert Locust recession area for the second consecutive month. Consequently, dry conditions prevail except for a few localized spots of green vegetation in central Mauritania, northern Mali, and along the eastern side of the Red Sea.

In **West Africa**, meteorological conditions during February were quite similar to those in the previous month. No significant rainfall has been reported in the Region since November 2000. In Mauritania, strong winds caused sand storms in the north and temperatures started to increase, reaching a maximum of 32°C by the end of the month. Vegetation continues to dry up in the central and northern areas where only localized patches of green vegetation remain in a few wadis and drainage lines. In Mali, low temperatures prevailed in the north and small patches of green vegetation were reported in a few wadis of Timetrine, Tadhak and in the central and western portion of the Adrar des Iforas.

In **North-West Africa**, several depressions formed during the month over the Atlantic and moved eastward across the Mediterranean and north of the African coast due to a dominant high pressure system over Libya. During periods when this high pressure system broke down, for example on 11-12 February, depressions moved east along the coast of Libya. The prevailing northerly and easterly winds were only temporarily interrupted by southerlies associated with the passing depressions. No significant rains fell in the Region for the second consecutive month except for light rains associated with depressions in southern Tunisia during the first half of February and in western Libya at Ghadames (21 mm) on the 26th. Consequently, vegetation is drying out in southern Morocco and Algeria. Temperatures continued to rise in Morocco, particularly in the south, but remained stable in Algeria.

In **Eastern Africa**, no significant rainfall was reported along the Red Sea coastal plains or in the interior for the second consecutive month. Dense, low clouds were present at times over the coastal plains of Sudan and Eritrea between Port Sudan and Massawa on 5-6, 18 and 25 February but no rainfall was reported except for light showers on the 5th near Khor Gowb, Sudan. Apart from a few patches of green vegetation reported near Khor Gowb and Massawa, vegetation is drying out on the coastal plains of Sudan and Eritrea and in the Tokar Delta. Drying vegetation was also reported in eastern Ethiopia and in coastal areas of northern Somalia except in a few wadis, along the foothills and on the escarpment where it was green.

In the **Near East**, dry weather prevailed throughout the Region despite a large frontal system extending from Chad across eastern Libya to north-western Egypt on 13 February and another one over northern Saudi Arabia on the 17th. Conditions continued to be unfavourable for breeding on the Red Sea coast of Egypt due to a lack of rainfall but remained favourable on the coastal plains of Saudi Arabia and Yemen from south of Jeddah to Hodeidah where good rains fell in late January. Light rain (3 mm), associated with a Mediterranean depression, fell on the 22nd at Siwa Oasis in the normally very arid Western Desert of Egypt. Dry conditions were reported on the northern coast of Oman.

In **South-West Asia**, light rain was reported at one location, Panjgur (7 mm on 12 February), in the spring breeding areas of western Pakistan where breeding conditions are likely to be improving. Dry conditions prevailed on the south-eastern coast of Iran and in western India.

Area Treated

Mauritania	18 ha	(6-8 February)

Desert Locust Situation and Forecast

(see also the summary on the first page)

WEST AFRICA

Mauritania

• **SITUATION**

Locust densities and the number of locations in which locusts were present continued to decline during February in central and northern Mauritania where they were reported in only two locations. Scattered maturing solitarious adults and a mixture of

solitarious and transiens hoppers of all instars were present in interdunal areas south of Atar (2032N/1308W) where breeding had occurred in January. By mid February, most of the hoppers were fifth instar. Densities during the first dekad reached nearly 10,000 adults and hoppers per ha while in the second dekad they dropped to about 3,000 per ha. Isolated mature adults were seen in one area about 50 km north of Zouerate (2244N1221W) while surveys of surrounding areas did not find any locusts. Ground teams treated 18 ha of hoppers and adults at one location (1932N/1259E) on 6-8 February.

• **FORECAST**

In the absence of any further rainfall in Tiris Zemmour and Adrar, locust numbers are expected to continue to decline in the north. Low numbers of hoppers and adults may persist near Atar and Zouerate and, as vegetation continues to dry out, become concentrated in those few areas that remain green. No significant developments are likely.

Mali

• **SITUATION**

During February, there were unconfirmed reports from nomads, guides and travellers of low density populations of adults and fourth to sixth instar hoppers in a few places of the northern Adrar des Iforas near Tahort (1943N/0107E) and Edjerer (1953N/0130E).

• **FORECAST**

Low numbers of adults are likely to persist in a few wadis of the Adrar des Iforas and perhaps in the Timetrine area. Some of these could move northwards during periods of warm southerly winds.

Niger

• **SITUATION**

No reports received.

• **FORECAST**

A few isolated adults may be present in parts of the Air. No significant developments are expected.

Chad

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Senegal

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Burkina Faso, Cape Verde, Gambia, Guinea Bissau, and Guinea Conakry

• **FORECAST**

No significant developments are likely.

NORTH-WEST AFRICA

Algeria

• **SITUATION**

No locusts were reported during February.

• **FORECAST**

There is a slight possibility that a few hoppers and adults may be present in the south near Tamanrasset and perhaps Djanet. Additional adults could appear from northern Mali during periods of warm southerly winds.

Morocco

• **SITUATION**

No locusts were reported during February.

• **FORECAST**

Low numbers of locusts may be present in parts of the extreme south-west. No significant developments are likely.

Libyan Arab Jamahiriya

• **SITUATION**

No locusts were reported during February.

• **FORECAST**

No significant developments are likely.

Tunisia

• **SITUATION**

No reports received.

• **FORECAST**

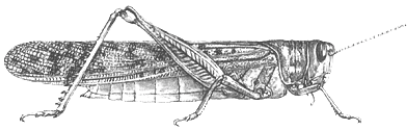
No significant developments are likely.

EASTERN AFRICA

Sudan

• **SITUATION**

During February, there was no significant change in the locust situation as compared to January. Low numbers of solitarious immature and mature adults persisted in a few cropping areas along the Red Sea coastal plains between Port Sudan and Tokar: Hosheri (1918N/3717E), Handob (1914N/3716E), and Khors Gowb (1903N/3720E) and Ashat (1844N/3727E). Small scale breeding occurred in some of these places where low numbers of solitarious hoppers were



present. No locusts were seen during surveys in the Tokar Delta.

• **Forecast**

Low numbers of hoppers and adults will persist in a few areas along the Red Sea coastal plains from Port Sudan to Karora. Unless further rains fall, locust numbers will gradually decrease during the forecast period and no significant developments are likely.

Eritrea

• **Situation**

No Desert Locusts were reported during February.

• **Forecast**

Low numbers of solitarious adults are likely to be present and breeding on a small scale in a few areas along the Red Sea coastal plains between Tio and Karora where rains have fallen or runoff has occurred. Unless further rains fall, locust numbers will gradually decrease during the forecast period and no significant developments are likely.

Somalia

• **Situation**

Isolated immature adults were present at one location on the central northern coast east of Meit in Wadi Ukrood (1101N/4733E) on 22 February. No locusts were seen elsewhere on the escarpment or coastal plains during the month.

• **Forecast**

Low numbers of adults are likely to be present and breeding in a few areas along the coast and on the escarpment where ecological conditions are favourable. No significant developments are likely.

Ethiopia

• **Situation**

No locusts were reported during February in the Dire Dawa and Jigjiga areas.

• **Forecast**

No significant developments are likely.

Djibouti

• **Situation**

No surveys were carried out during February.

• **Forecast**

No significant developments are likely.

Kenya, Tanzania and Uganda

• **Forecast**

No significant developments are likely.

NEAR EAST

Saudi Arabia

• **Situation**

No locusts were reported during January and February.

• **Forecast**

Low numbers of solitarious adults are likely to be present and breeding on a small scale in a few places along the Red Sea coast between Jeddah and Jizan. Regular surveys are suggested to monitor the situation.

Yemen

• **Situation**

No locusts were reported up to 25 February.

• **Forecast**

Low numbers of solitarious adults are expected to be present and breeding on a small scale in a few places of the Red Sea coastal plains in areas of recent rainfall. Regular surveys are suggested to monitor the situation.

Egypt

• **Situation**

During February, low numbers of solitarious immature adults persisted in a few cropping areas along the western shore of Lake Nasser near Tushka (2247N/3126E). Similar populations persisted in several wadis on the south-eastern Red Sea coastal plains between Abu Ramad (2224N/3624E) and Halaib (2212N/3635E) and in adjacent subcoastal areas near Wadi Diib. No locusts were seen further north along the Red Sea coast or in the Western Desert.

• **Forecast**

Low numbers of adults will continue to persist and mature in a few cropping areas near Lake Nasser and along the Red Sea coastal plains between Shalatyn and Halaib as well as in subcoastal areas. Breeding is not expected to occur unless further rains fall. No significant developments are likely.

Kuwait

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Oman

• **Situation**

No locusts were seen during surveys carried out in February on the Batinah coastal plains near Muscat.

• **FORECAST**

No significant developments are likely.

United Arab Emirates

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Qatar, Syria Arab Republic and Turkey

• **FORECAST**

No significant developments are likely.

SOUTH-WEST ASIA

Iran

• **SITUATION**

No locusts were seen during surveys carried out during the first week of February in Kerman and on the south-eastern coastal plains near Chabahar.

• **FORECAST**

A few isolated adults may be present in a few places on the south-eastern coastal plains near Chabahar. Breeding could occur in those places that receive rainfall. No significant developments are likely.

Pakistan

• **SITUATION**

No locusts were reported during the second half of January and the first half of February.

• **FORECAST**

A few isolated adults may be present in coastal areas of Baluchistan where breeding may occur on a small scale in places that receive rainfall. No significant developments are likely.

India

• **SITUATION**

No locusts were reported during the first half of February in Rajasthan and Gujarat.

• **FORECAST**

No significant developments are likely.

Afghanistan

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Announcements

Locust reporting. Affected countries are kindly reminded to make sure that locust situation reports are sent to FAO HQ by the 25th day of the month so the information can be included in the FAO bulletin for the current month; otherwise, it will not appear until the following month. Reports should be sent even if no locusts were found or if no surveys were conducted.

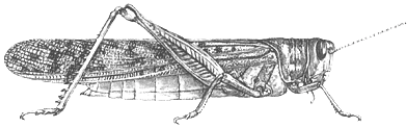
Reporting by email. Affected countries are encouraged to send completed *FAO Desert Locust Survey and Control Forms* with a brief interpretation of the results by email to eclo@fao.org.

Desert Locust training course. A regional training course in Arabic on Desert Locust survey and control, organized by the FAO Commission for Controlling the Desert Locust in North-West Africa, will be held in Ghadames, Libya on 16-30 March 2001.

The Commission for Controlling the Desert Locust in North-West Africa. The 23rd Session will be held in Algiers, Algeria from 2-7 June 2001.

Desert Locust Control Committee. The 36th Session will be held in Rome from 24-28 September 2001.

Ms. Mona Zaki. It is with deep regret to announce the passing of our dear colleague, Ms. Mona Zaki, secretary to the Central Region Locust Commission at the FAO Regional Office for the Near East (Cairo). She will be greatly missed not only for her support of locust activities in the Central Region but as a charming and energetic person. We would like to express our sincere condolences to her family and to the Regional Office.



Glossary of terms

The following special terms are used in the Desert Locust Bulletin when reporting locusts:

NON-GREGARIOUS ADULTS AND HOPPERS

ISOLATED (FEW)

- very few present and no mutual reaction occurring;
- 0 - 1 adult/400 m foot transect (or less than 25/ha).

SCATTERED (SOME, LOW NUMBERS)

- enough present for mutual reaction to be possible but no ground or basking groups seen;
- 1 - 20 adults/400 m foot transect (or 25 - 500/ha).

GROUP

- forming ground or basking groups;
- 20+ adults/400 m foot transect (or 500+/ha).

ADULT SWARM AND HOPPER BAND SIZES

VERY SMALL

- swarm: less than 1 km^2 • band: 1 - 25 m^2

SMALL

- swarm: 1 - 10 km^2 • band: 25 - 2,500 m^2

MEDIUM

- swarm: 10 - 100 km^2 • band: 2,500 m^2 - 10 ha

LARGE

- swarm: 100 - 500 km^2 • band: 10 - 50 ha

VERY LARGE

- swarm: 500+ km^2 • band: 50+ ha

RAINFALL

LIGHT

- 1 - 20 mm of rainfall.

MODERATE

- 21 - 50 mm of rainfall.

HEAVY

- more than 50 mm of rainfall.

OTHER REPORTING TERMS

BREEDING

- the process of reproduction from copulation to fledging.

SUMMER RAINS AND BREEDING

- July - September/October

WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July

DECLINE

- a period characterised by breeding failure and/or successful control leading to the dissociation of swarming populations and the onset of recessions; can be regional or major.

OUTBREAK

- a marked increase in locust numbers due to concentration, multiplication and gregarisation which, unless checked, can lead to the formation of hopper bands and swarms.

UPSURGE

- a period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to-gregarious breeding in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions.

PLAGUE

- a period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously.

RECESSION

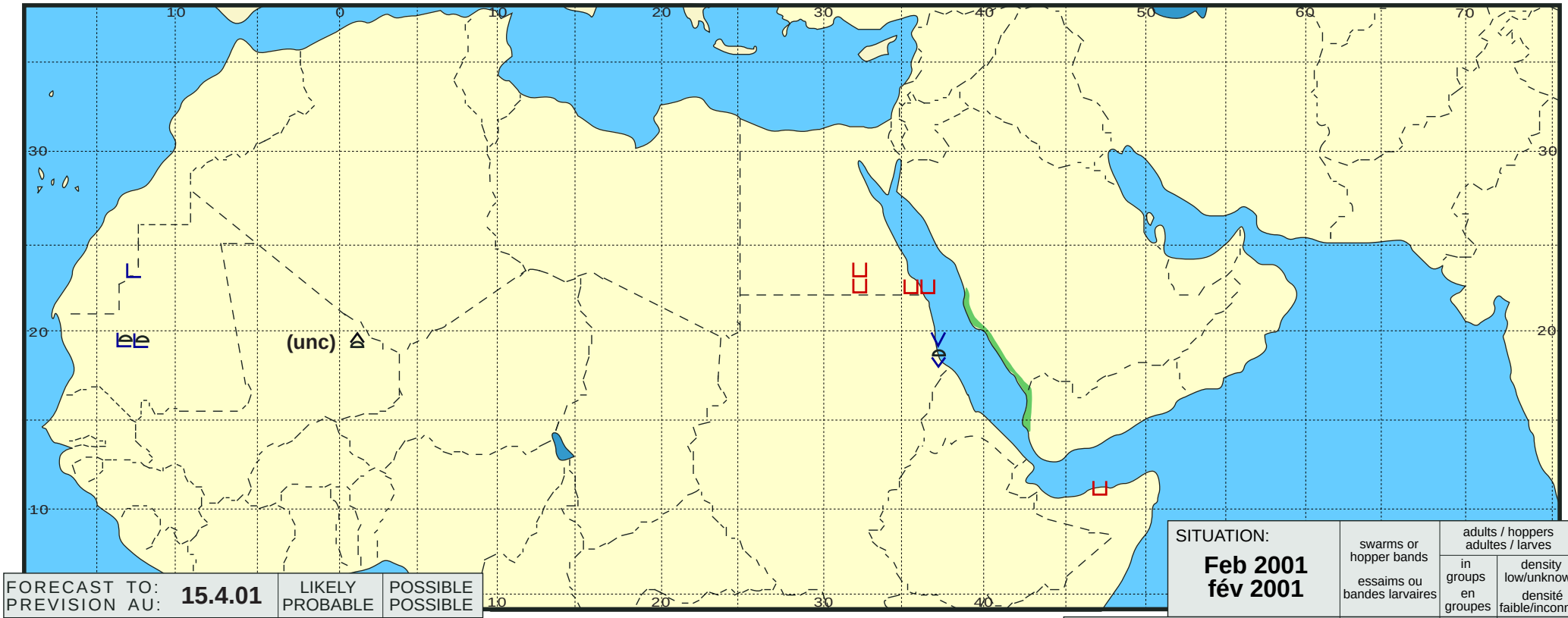
- period without widespread and heavy infestations by swarms.

REMISSION

- period of deep recession marked by the complete absence of gregarious populations.

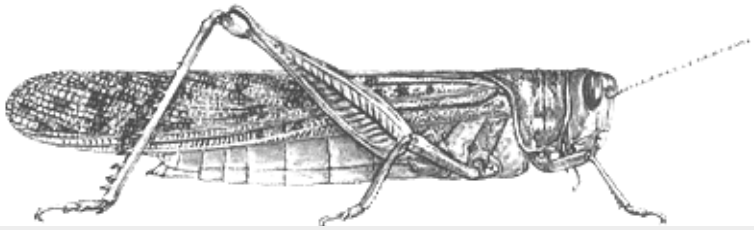
Desert Locust Summary
Criquet pèlerin - Situation résumée

269



FORECAST TO: PREVISION AU: **15.4.01**	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favourables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: **Feb 2001 fév 2001**	swarms or hopper bands essaims ou bandes larvaires	adults / hoppers adultes / larves in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures	■	□	⊔
mature or partly mature adults adultes matures ou partiellement matures	◣	◺	L
adults, maturity unknown adultes, maturité inconnue	▲	△	⋀
egg laying or eggs pontes ou œufs	▼	▽	⋁
hoppers larves	●	○	◡
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)	◘	◙	⊕



DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations

No. 270
(4 Apr 2001)

General Situation during March 2001
Forecast until mid-May 2001

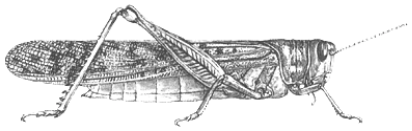
The Desert Locust situation remained calm during March. Only insignificant numbers of solitarious adults were reported in northern Mauritania, northern Mali, south-eastern Egypt, northern Somalia, and western Pakistan. Dry conditions prevailed throughout the recession area except for parts of Yemen and Saudi Arabia where good rains fell. No significant developments are expected during the forecast period.

Western Region. Locust numbers declined further in northern **Mauritania** where there has been no evidence of breeding to date due to a lack of rainfall and unfavourable conditions. A few locusts were reported to be surviving in localized patches of vegetation in northern **Mali** where conditions are not favourable for breeding. Although no locusts were reported in **Morocco**, **Algeria** and **Libya**, there is a slight possibility that a few isolated adults may be present in southern or central Algeria. Locust numbers will continue to decline during the forecast period.

Central Region. Scattered adults persisted in **Egypt** along the south-eastern coastal plains of the Red Sea but breeding has not been detected. No locusts were seen further south in **Sudan** or **Eritrea** where conditions are now dry. Isolated adults were seen in parts of northern **Somalia**. Good rains fell in coastal and interior areas of **Yemen** where low numbers of locusts are expected to be present and breeding but no surveys have been carried out since November. Regular surveys are strongly recommended in areas of recent rainfall. No locusts were reported in **Saudi Arabia**.

Eastern Region. Low numbers of solitarious adults were present in coastal areas of Baluchistan in western **Pakistan** from mid February onwards. Small scale breeding is expected to occur if rains fall during the forecast period. No locusts were reported in **Iran** or **India**.

The FAO Desert Bulletin is issued monthly, supplemented by Updates during periods of increased Desert Locust activity, and is distributed by fax, e-mail, FAO pouch and airmail by the Locusts and Other Migratory Pests Group, AGP Division, FAO, 00100 Rome, Italy. It is also available on the Internet.
Telephone: +39 06 570.52420 (7 days/week, 24 hr)
Facsimile: +39 06 570.55271
E-mail: eclo@fao.org
Telex: 610181 FAO 1
Internet: http://www.fao.org/news/global/locusts/locuhome.htm



No. 270

DESERT LOCUST BULLETIN

Weather & Ecological Conditions in March 2001

Dry and unfavourable conditions for breeding prevailed throughout the recession area except for Yemen and Saudi Arabia where rains fell over parts of the Red Sea coast and in the interior desert.

In **West Africa**, no rainfall was reported and dry conditions prevailed for the fourth consecutive month. In Mauritania, prevailing winds were from the north and north-east, and temperatures were generally quite stable with minimum temperatures between 15-22°C and maximum between 23-35°C. Green vegetation was limited to a few very localized patches in wadis and drainage areas of the north. In northern Mali, daytime temperatures were starting to increase while night temperatures remained low. Conditions were generally dry except for localized patches of green vegetation in Timetrine and the Adrar des Iforas. The indications were that these would be enough to allow the survival of locusts but not for breeding.

In **North-West Africa**, dry conditions prevailed throughout the Region. No significant rainfall was reported during March except for some traces along the Atlantic coast of Morocco between Agadir and Sidi Ifni. Minimum and maximum temperatures in the central Sahara of Algeria were 16-20°C and 26-37°C respectively. Consequently, breeding conditions continued to be unfavourable in desert areas south of the Atlas Mountains in Morocco and Algeria. Similar conditions persisted in Libya except for some localized green vegetation in the north-west near Nalut.

In **Eastern Africa**, dry weather prevailed throughout the Region. Although clouds were present at times over the Red Sea coast of Sudan and Eritrea, no rainfall was reported and, consequently, vegetation is drying out along the coastal plains of both countries. In Northern Somalia, vegetation is generally dry along the coast except in some wadis that received run-off from isolated showers on the escarpment during the second week of March. Vegetation was also starting to become green in some places on the plateau near Hargeisa, Erigavo and Burao.

In the **Near East**, rains fell at times in parts of the Region. In Saudi Arabia, light rains fell on the northern Red Sea coast at Yenbo (12 mm) in early March. Good rains fell during the third week in the spring breeding areas of the interior near Hail (93 mm) and Qassim (121 mm) and light rains fell on the north-western edge of the Empty Quarter at W. Dawasser (9 mm) and Sharurah (7 mm). No significant rainfall was reported on the Red Sea coastal plains. In Yemen, light rains fell in a few places on the Red Sea coastal plains near Hodeidah. Widespread and heavy rains fell during the first half of March along the southern coastal plains east of Aden and in the interior between Ataq, Bayhan and Marib. In Egypt, small patches of dense vegetation and moist soil were present in a few areas along the south-eastern Red Sea coastal plains even though the last rains occurred in mid December.

In **South-West Asia**, dry conditions prevailed in the spring breeding areas of Baluchistan in western Pakistan and south-eastern Iran. No rainfall was reported except for light showers at Nokkundi and Dalbandin in north-western Baluchistan, Pakistan on the 11th.

Area Treated

No control operations were reported.

Desert Locust Situation and Forecast

(see also the summary on the first page)

WEST AFRICA

Mauritania

• **SITUATION**

During the last dekad of February, a few isolated adults remained in previously infested areas south of Atar and individual mature adults were present at two locations near Zouerate (2244N1221W).

During the first two dekads of March, a few mature adults persisted at three locations near Zouerate. No locusts were seen during surveys in nearby areas or during the third dekad.

• **FORECAST**

In the absence of any further rainfall in Tiris Zemmour and Adrar, breeding is less likely to occur and locust numbers will continue to decline in the north. This suggests that there will be very few locusts to move south this year towards the summer breeding areas.

Mali

• **Situation**

During March, a few immature adults were reported in Timetrine at Tirikfen (2042N/0002W) and Ifirdjane (2030N/0013W) and in the southern Adrar between Gao and Tabankort (1749N/0019E).

• **Forecast**

Low numbers of adults are likely to persist in a few areas of Timetrine and the Adrar des Iforas. In the absence of rainfall, no significant developments are expected.

Niger

• **Situation**

No reports received.

• **Forecast**

A few isolated adults may be present in parts of the Air. No significant developments are expected.

Chad

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Senegal

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Burkina Faso, Cape Verde, Gambia, Guinea Bissau, and Guinea Conakry

• **Forecast**

No significant developments are likely.

NORTH-WEST AFRICA

Algeria

• **Situation**

No locusts were reported during March.

• **Forecast**

A few isolated adults may be present south of the Hoggar Mountains and in the central Sahara. No significant developments are likely.

Morocco

• **Situation**

No locusts were reported up to 23 March.

• **Forecast**

Low numbers of locusts may be present in parts of the extreme south-west. No significant developments are likely.

Libyan Arab Jamahiriya

• **Situation**

A single solitarious adult was seen south-west of Nalut (3141N/1053E) on 28 March.

• **Forecast**

No significant developments are likely.

Tunisia

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

EASTERN AFRICA

Sudan

• **Situation**

No locusts were seen during surveys carried out in March on the Red Sea costal plains between Tokar Delta and Arbaat, north of Port Sudan.

• **Forecast**

No significant developments are likely.

Eritrea

• **Situation**

No reports were received from the Red Sea coastal plains up to 26 March.

• **Forecast**

Low numbers of solitarious adults may be present in a few areas along the Red Sea coastal plains between Tio and Karora; however, breeding is unlikely to occur as vegetation continues to dry out in the absence of any rainfall. No significant developments are likely.

Somalia

• **Situation**

During March, a few mature adults were seen near the coast east of Berbera in Wadi Duudo (1033N/4530E) on the 5th and immature adults were present further west at Gargaara (1016N/4348E) on the 24th. Isolated immature adults were seen on the 30th at two locations in the hills and on the coast near Las Koreh (1110N/4812E). No locusts were seen elsewhere in coastal or interior areas of the north-west.

• **Forecast**

Low numbers of adults are likely to persist in a few areas along the coast and on the escarpment where ecological conditions are favourable. No significant developments are likely.

Ethiopia

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Djibouti

• **SITUATION**

No surveys were carried out during March.

• **FORECAST**

No significant developments are likely.

Kenya, Tanzania and Uganda

• **FORECAST**

No significant developments are likely.

NEAR EAST

Saudi Arabia

• **SITUATION**

No locusts were reported during March on the Red Sea coastal plains or in the interior.

• **FORECAST**

Low numbers of solitarious adults are likely to be present and breeding on a small scale in a few places along the Red Sea coast between Jeddah and Jizan. Population levels are not expected to be high enough to warrant migration to the spring breeding areas of the interior and take advantage of recent rainfall.

Yemen

• **SITUATION**

Although no locust surveys were conducted during March, there was an unconfirmed report of locusts on the southern coastal plains near Aden.

• **FORECAST**

Low numbers of solitarious adults are expected to be present and breeding on a small scale in a few places of the Red Sea coastal plains in areas of recent rainfall and perhaps on the coastal plains near Aden. Breeding conditions are expected to improve in the summer breeding areas of the interior where recent rains fell between Marib, Bayhan and Ataq. Regular surveys are suggested to monitor the situation.

Egypt

• **SITUATION**

During March, isolated immature adults continued to be present in a few places along the Red Sea coastal plains between Abu Ramad (2224N/3624E) and Halaib (2212N/3635E) and in the adjacent sub-coastal areas. No locusts were reported further north along the Red Sea coast or in the Western Desert.

• **FORECAST**

Locust numbers will decline along the Red Sea coastal plains as vegetation dries out but a few may persist in agricultural areas in the Western Desert near Tushka and Sharq Oweinat. No significant developments are likely.

Kuwait

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Oman

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

United Arab Emirates

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Qatar, Syria Arab Republic and Turkey

• **FORECAST**

No significant developments are likely.

SOUTH-WEST ASIA

Iran

• **SITUATION**

No reports received.

• **FORECAST**

A few isolated adults may be present in a few places on the south-eastern coastal plains near Chabahar. Breeding could occur in those places that receive rainfall. No significant developments are likely.

Pakistan

• **SITUATION**

During the second half of February, isolated maturing adults were reported at 10 locations in the spring breeding areas of Baluchistan between Pasni (2513N/6330E) and Panjgur (2658N/6406E), and near Las Bela (2612N/6620E).

During the first half of March, isolated and insignificant populations persisted in the above areas.

• **FORECAST**

Small scale breeding may occur in a few places of coastal Baluchistan if rains fall. No significant developments are likely.

India

• **SITUATION**

No locusts were reported during the second half of February and first half of March in Rajasthan and Gujarat.

• **FORECAST**

No significant developments are likely.

Afghanistan

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Other Locust species

Peru

In the northern part of Peru, about 50,000 to 75,000 ha were infested during March by gregarious hoppers of *Schistocerca initerrita*. Some mature adult populations were still present at densities varying from 500 to 15,000 adults/ha. The infested areas varied from some square-metres to thousands of hectares.

In the central part of the country, an outbreak of *transiens* populations of *Schistocerca piceifrons peruviana* has occurred again.

Madagascar

An outbreak of Malagasy Migratory Locust (*Locusta migratoria capito*) is again developing in the south-west of the country. February reports indicated that more than 40,000 ha were infested by *transiens* adult populations along the coastal plains in the south-west. Adults were maturing and more than 30% were copulating. Densities varied from 2,000 to 14,000 adults/ha. A total of 7,450 ha were treated during February.

Announcements

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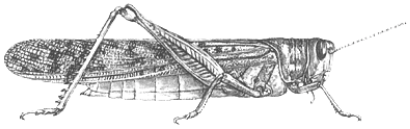
Desert Locust Control Committee. The 36th Session will be held in Rome from 24-28 September 2001.

Pesticide Referee Group. The 9th meeting will be held during the last quarter of 2001. Results of any field trials recently undertaken on the efficiency and human/environmental safety of control agents used against locusts and grasshoppers should be submitted to the Locust Group for transmission to the PRG.



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VERY LARGE

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RAINFALL

LIGHT

- 1 - 20 mm of rainfall.

MODERATE

- 21 - 50 mm of rainfall.

HEAVY

- more than 50 mm of rainfall.

OTHER REPORTING TERMS

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- the process of reproduction from copulation to fledging.

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- July - September/October

WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

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UPSURGE

- a period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to-gregarious breeding in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions.

PLAGUE

- a period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously.

RECESSION

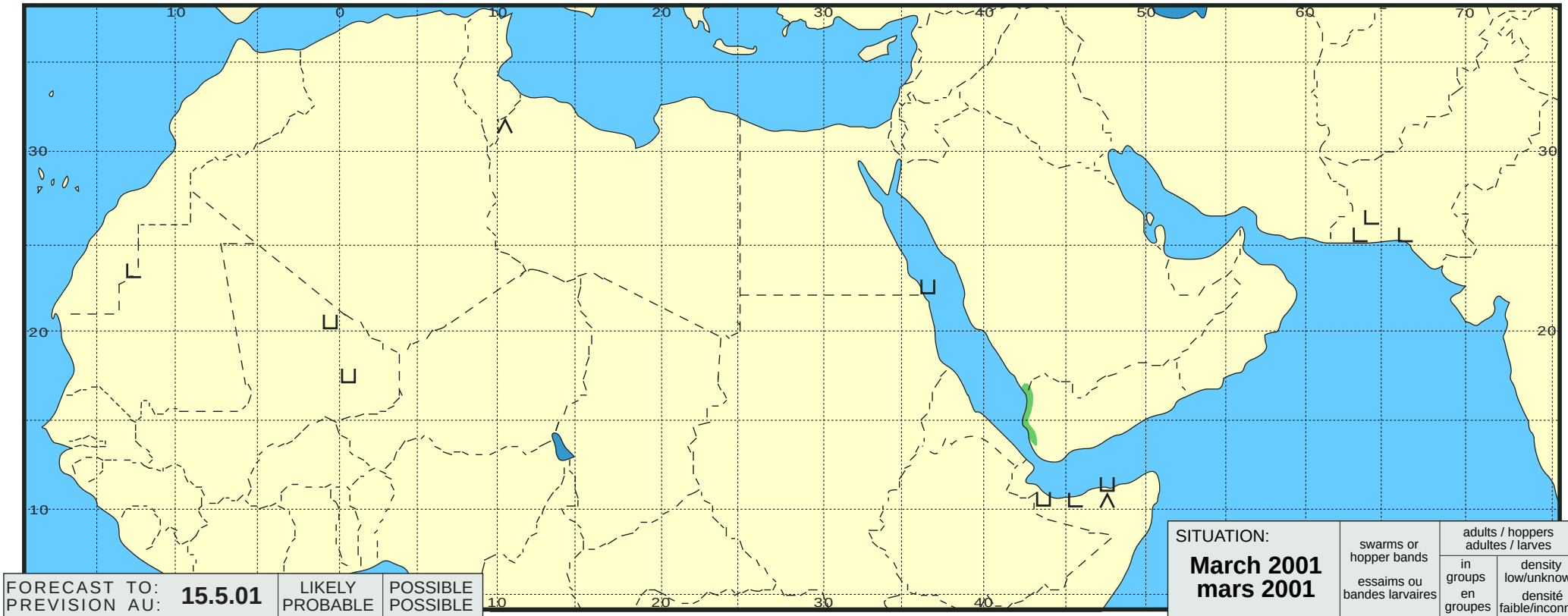
- period without widespread and heavy infestations by swarms.

REMISSION

- period of deep recession marked by the complete absence of gregarious populations.

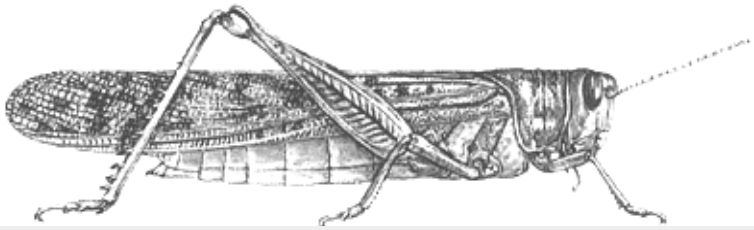
Desert Locust Summary
Criquet pèlerin - Situation résumée

270



FORECAST TO: PREVISION AU: **15.5.01**	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favourables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: **March 2001 mars 2001**	swarms or hopper bands essaims ou bandes larvaires	adults / hoppers adultes / larves in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures	■	□	⊔
mature or partly mature adults adultes matures ou partiellement matures	◣	◺	L
adults, maturity unknown adultes, maturité inconnue	▲	△	Λ
egg laying or eggs pontes ou œufs	▼	▽	V
hoppers larves	●	○	◡
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)	◘	◙	⊍



DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations

No. 271
(4 May 2001)

General Situation during April 2001
Forecast until mid-June 2001

The Desert Locust situation continued to remain calm during April. A few solitarious adults were present in north-western Libya, on the Red Sea coasts of Egypt and Saudi Arabia, and in the spring breeding areas of western Pakistan. Limited breeding could occur early in the forecast period in north-western Libya and perhaps western Pakistan but no significant developments are expected there or elsewhere in the recession area.

Western Region. No locusts were reported in the Region except for a few scattered adults in north-western **Libya** and an unconfirmed report from south-eastern **Mauritania**. Locust numbers are thought to be at an extremely low level due to the lack of winter rainfall and the persistence of dry conditions throughout the Region. It will take several generations of breeding before numbers increase to significant levels. This will require good rainfall during the summer that is well distributed throughout the breeding areas.

Central Region. Insignificant numbers of solitarious adults persisted at several places in south-eastern **Egypt** between the Red Sea coast and Lake Nasser. Similar populations were reported on the Red Sea coastal plains near Mecca, **Saudi Arabia**. No locusts were reported elsewhere in the Region and no significant developments are expected during the forecast period.

Eastern Region. Low numbers of solitarious adults were present in coastal and interior areas of Baluchistan in western **Pakistan**. Some of these areas received good rains which could allow late breeding to occur at a limited level. Nevertheless, the scale of the adult movement to the summer breeding areas along the Indo-Pakistan border is expected to be extremely small this year with, at most, only a few individual adults appearing by the onset of the monsoon rains. No locusts were reported in **Iran** or **India**.

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Internet: http://www.fao.org/news/global/locusts/locuhome.htm

No. 271

DESERT LOCUST BULLETIN

Weather & Ecological Conditions in April 2001

Generally dry and unfavourable conditions continued to be reported in the recession area despite some isolated showers in a few places.

In **West Africa**, no rainfall was reported and dry conditions prevailed for the fifth consecutive month. In Mauritania, strong north-easterly winds gave rise to dust storms at times. Temperatures were unusually hot in early April, reaching 45°C, but returned to normal by the end of the month with minimum temperatures of 18-23°C and maximum temperatures of 30-42°C. Vegetation was dry throughout the north except for some small patches of drying vegetation in Inchiri near Akjoujt and Tijirit. Elsewhere in the Region, dry and unfavourable conditions persisted except in northern Mali where a few patches of drying vegetation may be present in the Adrar des Iforas.

In **North-West Africa**, conditions remained much the same during April as they were in the previous month throughout the Region. No significant rainfall was reported except for some traces along the Atlantic coast of Morocco between Agadir and Sidi Ifni and in the central Algerian Sahara near In Salah where isolated light rains fell on the 23rd. In Algeria, maximum temperatures reached 38°C and minimum temperatures were 9-25°C in the central Sahara. Prevailing winds in the south of the country were from the east and south-east. Dry vegetation and unfavourable breeding conditions were reported in Morocco and Algeria. Light rains fell in north-western Libya near Nalut at the beginning and end of the month where breeding conditions may be improving. The latter extended into parts of southern Tunisia.

In **Eastern Africa**, dry vegetation and unsuitable breeding conditions persisted throughout the Region except near Dire Dawa, Ethiopia where light rains fell and green vegetation was reported.

In the **Near East**, conditions were generally dry and not favourable for breeding throughout the Region. Although moderate rains were reported over most of the Red Sea coast of Egypt during the first week of April, vegetation continued to dry out. Light to moderate rains fell for the second consecutive month in the interior of Saudi Arabia but there are no indications that locusts were present to take advantage of the rain. In Yemen, vegetation was becoming green in a few places in the interior of Shabwah between Bayhan and Nisab where good rains fell in March.

In **South-West Asia**, isolated showers were reported in spring breeding areas of Baluchistan in western Pakistan where 50 mm fell on the coast at Pasni on 11-12 April and light rain fell several times in the interior at Khuzdar. Consequently, breeding conditions are likely to be favourable in a few localized areas. In India, light rain fell in Rajasthan at Jodhpur and Bikaner.

Area Treated

No control operations were reported.

Desert Locust Situation and Forecast

(see also the summary on the first page)

WEST AFRICA

Mauritania

• **SITUATION**

No locusts were seen during surveys carried out in Inchiri, Adrar and Tiris Zemmour, northern Mauritania on 11-20 April. In the south-east, there were two unconfirmed reports of locusts about mid month northwest of Nema where three groups of immature *transiens* adults were seen on trees between 1656N/0756W and 1650N/0749W and other adults were seen flying near 1709N/0801W. These may have originated from earlier infestations in northern Mali or perhaps they could be a species other than Desert Locust.

• **FORECAST**

A few isolated adults may be present in parts of Inchiri near Akjoujt and south-western Tijirit where vegetation is not completely dry. These may start to move towards summer breeding areas in the south where laying is expected with the onset of the rains. It is likely that the first generation of breeding will be difficult to detect due to the low numbers and dispersed nature of the parental population.

Mali

• **Situation**

No reports received.

• **Forecast**

Low numbers of adults are likely to be present and will persist in a few areas of Timetrine and the Adrar des Iforas. Limited breeding is expected to commence in these areas with the onset of the summer rains.

Niger

• **Situation**

No reports received.

• **Forecast**

A few isolated adults may be present in parts of the Air. Limited breeding is expected to commence in the Tamesna with the onset of the summer rains. No significant developments are expected.

Chad

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Senegal

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Burkina Faso, Cape Verde, Gambia, Guinea Bissau, and Guinea Conakry

• **Forecast**

No significant developments are likely.

NORTH-WEST AFRICA

Algeria

• **Situation**

No locusts were reported during April.

• **Forecast**

No significant developments are likely.

Morocco

• **Situation**

A few solitarious adults were seen in the north-east at Bourdime (3201N/0312W) during April.

• **Forecast**

No significant developments are likely.

Libyan Arab Jamahiriya

• **Situation**

Low densities of scattered mature adults were reported at four locations in the north-west of the country near Nalut (3153N/1059E).

• **Forecast**

Breeding on a limited scale may occur in areas of recent rainfall near Nalut early in the forecast period. No significant developments are likely.

Tunisia

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

EASTERN AFRICA

Sudan

• **Situation**

No locusts were reported.

• **Forecast**

A few adults may appear in Northern Kordofan or Northern Darfur where limited breeding will commence with the onset of the summer rains. No significant developments are likely.

Eritrea

• **Situation**

No locusts were seen on the Red Sea coastal plains during April.

• **Forecast**

No significant developments are likely.

Somalia

• **Situation**

No reports received.

• **Forecast**

Low numbers of adults are likely to be present but will slowly decline in a few areas along the coast and on the escarpment as conditions dry out. No significant developments are likely.

Ethiopia

• **Situation**

No locusts were seen near Dire Dawa during surveys on 29-30 March.

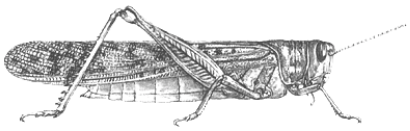
• **Forecast**

No significant developments are likely.

Djibouti

• **Situation**

No reports received.



• **Forecast**

No significant developments are likely.

Kenya, Tanzania and Uganda

• **Forecast**

No significant developments are likely.

NEAR EAST

Saudi Arabia

• **Situation**

A few isolated adults at densities of 5-100 locusts per ha were reported at two locations near Mecca in April.

• **Forecast**

Adult numbers will decline along the Red Sea coast as conditions dry out. Populations are not expected to have reached high enough levels on the Red Sea coast for migration to occur to the spring breeding areas of the interior where rains have fallen recently.

Yemen

• **Situation**

No locusts were seen during surveys undertaken on 16-22 April in the Shabwah interior of the south where heavy rains had previously fallen.

• **Forecast**

There is a slight possibility of a few locusts appearing in areas of green vegetation in Shabwah. No significant developments are likely.

Egypt

• **Situation**

During April, isolated immature adults were reported at five locations on the Red Sea coastal plains and in adjacent subcoastal areas west of Halaib (2212N/3635E). Similar populations were seen at four locations along the shores of Lake Nasser. No locusts were reported further north along the Red Sea coast or in the Western Desert.

• **Forecast**

Locusts will decline along the Red Sea coastal plains as vegetation dries out but a few may persist in agricultural areas in the Western Desert near Tushka and Sharq Oweinat. No significant developments are likely.

Kuwait

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Oman

• **Situation**

No locusts were seen during surveys on the Batinah coast of northern Oman in April.

• **Forecast**

No significant developments are likely.

United Arab Emirates

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Qatar, Syria Arab Republic and Turkey

• **Forecast**

No significant developments are likely.

SOUTH-WEST ASIA

Iran

• **Situation**

No locusts were seen during a joint survey in Sistan-Baluchistan province during the first half of April.

• **Forecast**

No significant developments are likely.

Pakistan

• **Situation**

During the first half of April, there was a slight increase in locusts reported in the interior of Baluchistan where maturing solitarious adults at densities of up to 3 per ha were present at nine locations. Similar populations were reported at six places along the coast and in sub-coastal areas.

• **Forecast**

There is a slight possibility that late breeding could occur on a limited scale in the spring breeding areas of Baluchistan near Pasni and Khuzdar where recent rains fell. Otherwise, locust numbers are expected to decline as conditions dry out. If breeding does not occur, the scale of the adult movement to the summer breeding areas along the Indo-Pakistan border is expected to be extremely limited this year with, at most, only a few individual adults appearing by the onset of the monsoon rains.

India

• **SITUATION**

No locusts were reported from 15 March to 20 April in Rajasthan and Gujarat.

• **FORECAST**

No significant developments are likely.

Afghanistan

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Other Locust species

Afghanistan

An outbreak of locusts, most probably Moroccan Locust (*Dociostaurus maroccanus*), is in progress in the north where a recent Mission reported heavy infestations of third instar hoppers attacking wheat in Baghlan, Samangan and Kunduz provinces on 18-25 April. Local communities are trying to control these and other infestations. Earlier reports had suggested that about seven provinces in the north were affected by locusts. Control is often carried out mechanically in the country, by digging ditches and then directing hoppers into them. It appears that, under funding constraints, the system of monitoring egg beds and carrying out early control has broken down. A FAO/UNDP project is in the process of assessing the situation with a view to proposing further action.

Madagascar

A survey carried out along the south-western coastal plains on 13-19 April confirmed that more than 40,000 ha were still infested by *transiens* hopper and adult populations of the Malagasy Migratory Locust (*Locusta migratoria capito*) and need to be urgently treated. Hopper densities varied from 10-100 hoppers per sq. m in the four heaviest infested locations, and adult densities were between 10,000-15,000 adults per ha. The phase structure of the population was characteristic of the end of a major plague but this does not exclude the possibility of a resurgence in locust activity especially given that, for this time of year, the ecological conditions are unusually suitable for hopper development and breeding. It is expected that more hatching will occur during the first half of May and that adult groups will start to form from the end of May onwards unless control operations are quickly implemented.

Announcements

Locust reporting. Affected countries are kindly reminded to make sure that locust situation reports are sent to FAO HQ by the 25th day of the month so the information can be included in the FAO bulletin for the current month; otherwise, it will not appear until the following month. Reports should be sent even if no locusts were found or if no surveys were conducted.

Reporting by email. Affected countries are encouraged to send completed *FAO Desert Locust Survey and Control Forms* with a brief interpretation of the results by email to eclo@fao.org.

NW Africa Regional Workshop. Pictures from a CLCPANO training workshop on locust survey and control recently held in Ghadames, Libya are available on the internet:

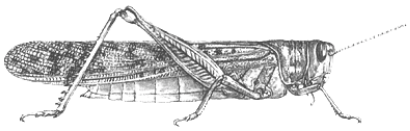
http://www.fao.org/news/global/locusts/clcpano/0103lib/0103lib.htm

Khartoum University. The Graduate College of the University of Khartoum is offering a one year postgraduate diploma course in Desert Locust Control which is expected to start in August 2001. Applications should be sent during May to: Registrar of the Graduate College, U. of K., POB 321, Khartoum, Sudan.

The Commission for Controlling the Desert Locust in North-West Africa. The 23rd Session will be held in Algiers, Algeria from 2-7 June 2001.

Desert Locust Control Committee. The 36th Session will be held in Rome from 24-28 September 2001.

Pesticide Referee Group. The 9th meeting will be held during the last quarter of 2001. Results of any field trials recently undertaken on the efficiency and human/environmental safety of control agents used against locusts and grasshoppers should be submitted to the Locust Group for transmission to the PRG.



Mr. Jama Geelle Muse. It is with deep regret that the sudden death of Mr. Jama Geelle Muse in Hargeisa, northern Somalia is announced. Mr. Muse was caretaker for DLCO-EA and had been working closely with the UNV Charles Mushi in carrying out locust surveys in northern Somalia. We would like to express our sincere condolences to his family, DLCO-EA and his government.

Glossary of terms

The following special terms are used in the Desert Locust Bulletin when reporting locusts:

NON-GREGARIOUS ADULTS AND HOPPERS

ISOLATED (FEW)

- very few present and no mutual reaction occurring;
- 0 - 1 adult/400 m foot transect (or less than 25/ha).

SCATTERED (SOME, LOW NUMBERS)

- enough present for mutual reaction to be possible but no ground or basking groups seen;
- 1 - 20 adults/400 m foot transect (or 25 - 500/ha).

GROUP

- forming ground or basking groups;
- 20+ adults/400 m foot transect (or 500+/ha).

ADULT SWARM AND HOPPER BAND SIZES

VERY SMALL

- swarm: less than 1 km^2 • band: 1 - 25 m^2

SMALL

- swarm: 1 - 10 km^2 • band: 25 - 2,500 m^2

MEDIUM

- swarm: 10 - 100 km^2 • band: 2,500 m^2 - 10 ha

LARGE

- swarm: 100 - 500 km^2 • band: 10 - 50 ha

VERY LARGE

- swarm: 500+ km^2 • band: 50+ ha

RAINFALL

LIGHT

- 1 - 20 mm of rainfall.

MODERATE

- 21 - 50 mm of rainfall.

HEAVY

- more than 50 mm of rainfall.

OTHER REPORTING TERMS

BREEDING

- the process of reproduction from copulation to fledging.

SUMMER RAINS AND BREEDING

- July - September/October

WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July

DECLINE

- a period characterised by breeding failure and/or successful control leading to the dissociation of swarming populations and the onset of recessions; can be regional or major.

OUTBREAK

- a marked increase in locust numbers due to concentration, multiplication and gregarisation which, unless checked, can lead to the formation of hopper bands and swarms.

UPSURGE

- a period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to-gregarious breeding in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions.

PLAGUE

- a period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously.

RECESSION

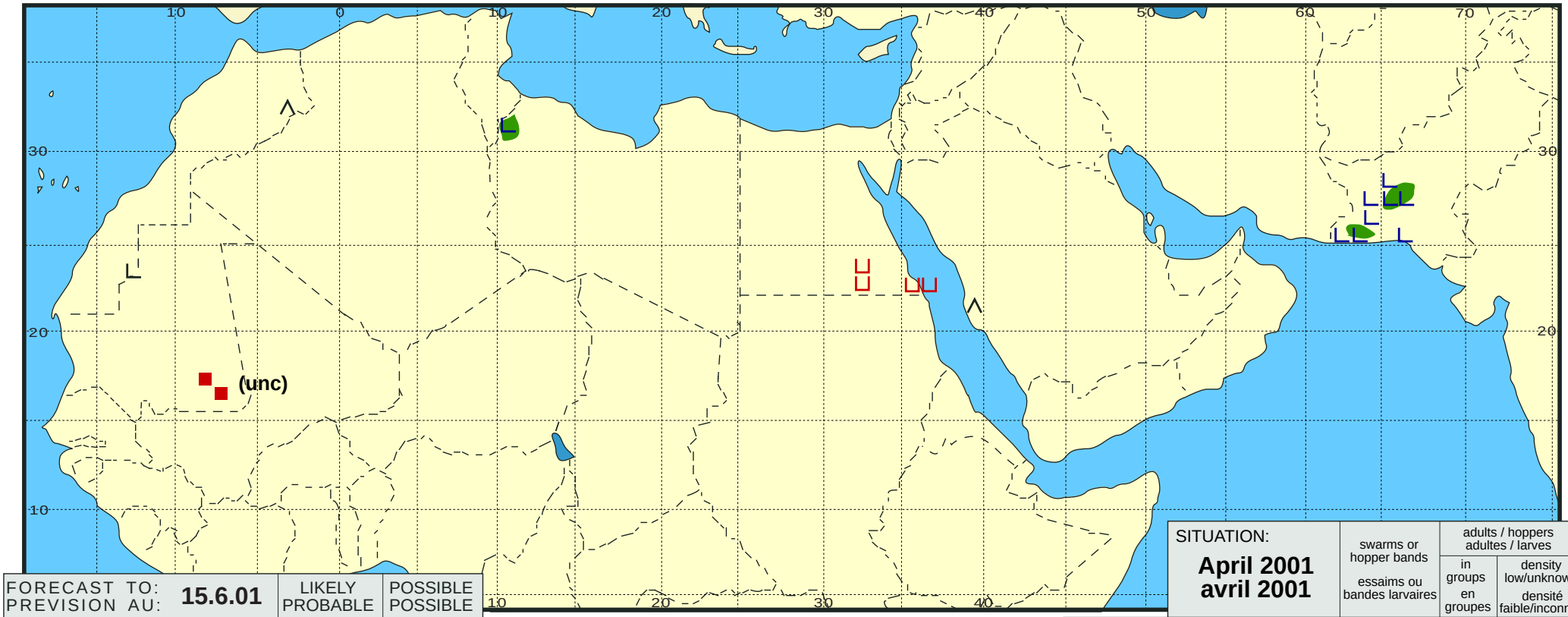
- period without widespread and heavy infestations by swarms.

REMISSION

- period of deep recession marked by the complete absence of gregarious populations.

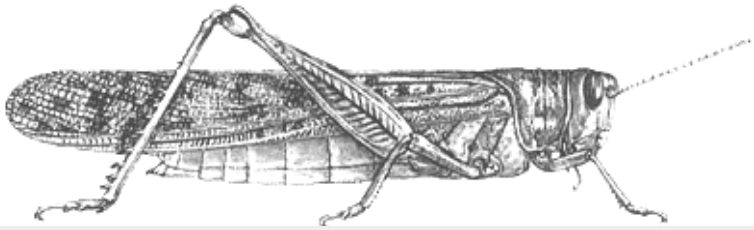
Desert Locust Summary
Criquet pèlerin - Situation résumée

271



FORECAST TO: PREVISION AU: **15.6.01**	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favourables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: **April 2001 avril 2001**	swarms or hopper bands essaims ou bandes larvaires	adults / hoppers adultes / larves in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures	■	□	⊔
mature or partly mature adults adultes matures ou partiellement matures	◣	◺	L
adults, maturity unknown adultes, maturité inconnue	▲	△	∧
egg laying or eggs pontes ou œufs	▼	▽	∨
hoppers larves	●	○	◡
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)	◘	◙	⊟



DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations

No. 272
(4 June 2001)

General Situation during May 2001
Forecast until mid-July 2001

The Desert Locust situation continued to remain calm during May. A few solitarious adults were present in southern Egypt, north-western Somalia and in the spring breeding areas of western Pakistan. Limited breeding could occur at the end of the forecast period in the areas which received rains during May or when the rainy season start. No significant developments are expected in the recession area.

Western Region. No locusts were reported in the Region. Locust numbers are thought to be at an extremely low level, though habitat conditions are likely to be acceptable for survival in Adrar des Iforas, Mali, and in Tamesna, Niger, and remained suitable for breeding in north-western Libya. No significant developments are expected during the forecast period.

Central Region. Insignificant numbers of solitarious adults persisted at several places in south-eastern **Egypt** between the Red Sea coast and Lake Nasser. Low number of hoppers and adults were reported in north-western **Somalia** where conditions improved during May. No locusts were reported elsewhere in the Region and no significant developments are expected during the forecast period.

Eastern Region. Low numbers of solitarious adults were present in interior areas of Baluchistan in western **Pakistan**, where the conditions were reported to be dry during the month. The scale of the adult movement to the summer breeding areas along the Indo-Pakistan border is expected to be extremely small this year with, at most, only a few individual adults appearing by the onset of the monsoon rains. No locusts were reported in **Iran** or **India**.

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Weather & Ecological Conditions in May 2001

Dry weather prevailed in most locust areas during May. Conditions were generally dry and remained unfavourable for breeding except in northern Somalia and western India where light to moderate rains fell during the month.

In **West Africa**, the Inter-Tropical Convergence Zone (ITCZ) was located around 15°N during the month, reaching 20° on 28th May, and moving southwards on 7th, 14th and 30th May. As a result, only light rains were reported in some areas of the northern Sahelian belt, in Mauritania, Mali and Niger. In Mauritania, moderate to locally strong easterly to north-easterly winds prevailed during the first half of May. North to north-easterly prevailing winds were weak to moderate during the second half. Temperatures increased and the maximum varied between 23 and 35°C. Annual vegetation is now totally dry in the northern part of the country. In northern Niger, light rains were reported from eastern Aïr (6 and 8 May) and the Ighazer area (12 May), and an aerial survey on 24 May indicated that patches of green vegetation were present in Tamesna. Elsewhere in the Region, dry and unfavourable conditions persisted except in northern Mali where patches of drying vegetation may still be present.

In **North-West Africa**, as a result of depressions located over the Mediterranean basin, light rain fell over Tunisia on 5-12 May and again on 23-26 May. In Morocco, traces were reported from two locations on the Atlantic coast, and light rain occurred on the eastern side of the Atlas Mountains. Traces and light rain were reported in Western and Central Sahara and in the Hoggar Mountains, in Algeria, where temperatures continued to increase during the month. Maximum temperatures reached 41°C in the Central Sahara and minimum temperatures varied from 9 to 26°C over the Algerian Sahara as a whole. Prevailing winds were light over the southern part of the country. It was reported that conditions were unfavourable for any locust activity in the traditional breeding areas. Traces were reported over north-western Libya where the vegetation remained green and an heavy rain (70 mm) fell in the south-east, at Kufra, on 27 May. Except for north-western Libya, conditions remained unsuitable for breeding in the Region.

In **Eastern Africa**, light rains fell in the summer breeding areas of Sudan south of 15°N, in North Kordofan and West Darfur, during the last dekad of May. An heavy rain was reported on the Red Sea coast, in the Suakin area. In Somalia, light to moderate rains fell during the first two dekads of May over the north-west where a low to moderate cover of green vegetation was reported after mid-May surveys. During the same period, light to moderate rains were also reported from Dire Dawa, Ethiopia, where suitable conditions may persist. In Djibouti, light rains were reported around the capital on 5 May. Conditions started to improve in some parts of the summer breeding area of the Region during the month.

In the **Near East**, green vegetation was reported in the southern Red Sea coast of Egypt. Light rains fell for the third consecutive month in the interior of Saudi Arabia. Nevertheless, dry conditions, unsuitable for any locust activity, are reported, because temperature have increased. Traces to light rain were reported in the Asir Mountains, in the South, where the vegetation is locally green. In Yemen, moderate to heavy rains fell over some places in the interior of Marib and Shabwah during the first dekad of May and green vegetation was reported near Harib. Moderate rains fell over southern parts of the Tihama during mid-May. Light rains were also reported in Oman and Qatar. Consequently, conditions are slowly improving in the Region.

In **South-West Asia**, south-westerly prevailing winds were established by mid-May. Moderate rain was reported in Baluchistan, in Iran. In Pakistan, only isolated showers fell over the summer breeding areas. Consequently, the conditions deteriorated during the month in the spring breeding area. In India, light rain was reported throughout the month in Rajasthan, at Jaisalmer, Jodhpur, Bikaner and Jaipur. Breeding conditions were improving in the summer breeding areas as confirmed by surveys carried out during the second half of April and during May.

Area Treated

No control operations were reported.

Desert Locust Situation and Forecast

(see also the summary on the first page)

WEST AFRICA

Mauritania

• **SITUATION**

No locust was reported in May.

• **FORECAST**

The adult groups observed mid-April north of Aïoun as well as scattered populations may move towards the summer breeding areas in the south. They are expected to mature and lay at the end of the forecast period with the onset of the rainy season. It is likely that the first generation of breeding will be difficult to detect due to the low numbers and dispersed nature of the parental population.

Mali

• **SITUATION**

No reports received.

• **FORECAST**

Low numbers of adults are likely to be present and will persist in a few areas of Timetrine and the Adrar des Iforas. Limited breeding could start in these areas at the end of the forecast period if rainfall occurs.

Niger

• **SITUATION**

No locust was reported during the month.

• **FORECAST**

A few isolated adults may be present in parts of Aïr and Tamesna where conditions are suitable for survival and locally improving. Limited breeding is expected to commence in the Tamesna with the onset of the summer rains. No significant developments are expected.

Chad

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Senegal

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Burkina Faso, Cape Verde, Gambia, Guinea Bissau, and Guinea Conakry

• **FORECAST**

No significant developments are likely.

NORTH-WEST AFRICA

Algeria

• **SITUATION**

No locusts were reported during May.

• **FORECAST**

No significant developments are expected during the forecast period.

Morocco

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are expected during the forecast period.

Libyan Arab Jamahiriya

• **SITUATION**

No reports received.

• **FORECAST**

Breeding and hopper development can pursue under suitable conditions in the north-west, near Nalut. No significant developments are likely.

Tunisia

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

EASTERN AFRICA

Sudan

• **SITUATION**

No locusts were reported.

• **FORECAST**

Breeding may occur on a limited scale during the forecast period in areas of recent rainfall in Northern Kordofan. No significant developments are likely.

Eritrea

• **SITUATION**

No reports received.

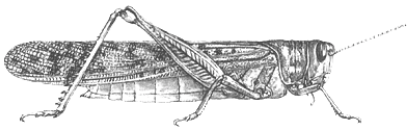
• **FORECAST**

No significant developments are likely.

Somalia

• **SITUATION**

Isolated immature adults were seen at Hosweyne (1023N/4322E) and at Sanaag (0945N/4521E), and 5th instar isolated hoppers were found at Biji (1018N/



4403E) during a ground survey carried out on 14-19 May. The densities were of 25 to 100 adults per ha and 1 hopper per square meter.

• **FORECAST**

Small scale summer breeding may start on the escarpment where the conditions improved during the month.

Ethiopia

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Djibouti

• **SITUATION**

No locusts were reported.

• **FORECAST**

No significant developments are likely.

Kenya, Tanzania and Uganda

• **FORECAST**

No significant developments are likely.

NEAR EAST

Saudi Arabia

• **SITUATION**

No locusts were reported during surveys carried out in the first half of May in the Interior, in the Asir mountains and near Mecca, where a few adults were present last month.

• **FORECAST**

Adult movements are expected to be restricted along the southern Red Sea coast due to the low locust number present and increasing temperatures in the spring breeding areas.

Yemen

• **SITUATION**

No locust was reported in May.

• **FORECAST**

A few adults may appear in the southern part of the Tihama where conditions recently improved. No significant developments are likely.

Egypt

• **SITUATION**

On 20 May, isolated immature adults, at a density of 2 adults per ha, were reported at seven locations on the Red Sea coastal plains and in adjacent subcoastal areas south and west of Halaib (2212N/3635E). Similar populations were observed at four locations in cultivated areas around Lake Nasser.

• **FORECAST**

Locusts may persist in the areas of green vegetation along the Red Sea coastal plains as well as in the cultivated areas. No significant developments are likely.

Kuwait

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Oman

• **SITUATION**

No locust was reported in May.

• **FORECAST**

No significant developments are likely.

United Arab Emirates

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Qatar, Syria Arab Republic and Turkey

• **FORECAST**

No significant developments are likely.

SOUTH-WEST ASIA

Iran

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Pakistan

• **SITUATION**

A late report indicates that no locusts were observed during survey carried out the second half of April along the Iran border. During the first half of May, a few solitary mature adults at densities varying from 1 to 3 per ha, were observed at four locations in eastern Baluchistan in the Karachi (2542N/6637E and 2535N/6640E) and Quetta (2705N/6605E and 2819N/6507E) regions.

• **Forecast**

The populations still present in Baluchistan could breed on a limited scale in the remaining patches of green vegetation but will more likely move towards the summer breeding areas along the Indo-Pakistan border. In any case, the scale of the events will be extremely low with, at most, only a few individual adults appearing by the onset of the monsoon rains.

India

• **Situation**

No locusts were reported during surveys carried out in Rajasthan during the second half of April and from 1st to 23 May.

• **Forecast**

A few isolated adults are likely to appear in Rajasthan where the conditions recently improved and lay on a small scale with the onset of the monsoon rains. No significant developments are likely.

Afghanistan

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Other Locust species

Madagascar

Based on the results of the survey carried out in mid-April in the south-western coastal plains, an emergency FAO project was prepared and became operational in May. On 23-26 May, more than 30,000 ha of late instar hoppers and adults of Malagasy Migratory Locust (*Locusta migratoria capito*) were successfully treated under the supervision of an FAO consultant and with the full involvement of the National Anti-Locust Centre (CNA) . In the five treated sites, the average locust densities were of 2 hoppers/m2 and 5,000 adults/ha. The balance of *transiens* populations varied from 60 to 90%. 24 hours after the treatment, 75 to 90% of the hoppers were dead or dying and 20 to 70% of the adults were dead. The mortality reached 90 to 100% for the hoppers an 90 to 95% for the adults 72 hours after treatment. The locust situation is now under control in the south-western part of Madagascar and the treatments were stopped.

Announcements

Locust reporting. Affected countries are kindly reminded to make sure that locust situation reports are sent to FAO HQ by the 25th day of the month so the information can be included in the FAO bulletin for the current month; otherwise, it will not appear until the following month. Reports should be sent even if no locusts were found or if no surveys were conducted.

Reporting by email. Affected countries are encouraged to send completed *FAO Desert Locust Survey and Control Forms* with a brief interpretation of the results by email to eclo@fao.org.

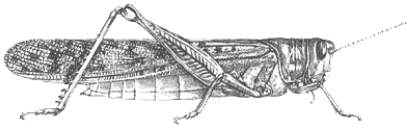
NW Africa Regional Workshop. Pictures from a CLCPANO training workshop on locust survey and control recently held in Ghadames, Libya are available on the internet:

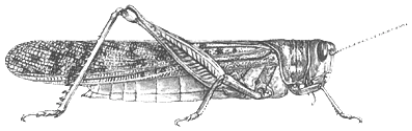
http://www.fao.org/news/global/locusts/clcpano/0103lib/0103lib.htm

Khartoum University. The Graduate College of the University of Khartoum is offering a one year postgraduate diploma course in Desert Locust Control which is expected to start in August 2001. Applications should be sent during May to: Registrar of the Graduate College, University of Khartoum, P.O. Box 321, Khartoum, Sudan.

Desert Locust Control Committee. The 36th Session will be held in Rome from 24-28 September 2001. It has been noted that this occasion will fall on the 50th Anniversary of FAO's official involvement in Desert Locust management. In 1951, an Advisory Committee on Locust Control was established by a decision taken at the Sixth FAO Conference.

Pesticide Referee Group. The 9th meeting will be held during the last quarter of 2001. Results of any field trials recently undertaken on the efficiency and human/environmental safety of control agents used against locusts and grasshoppers should be submitted as soon as possible o the Locust Group for transmission to the PRG.





No. 272

DESERT LOCUST BULLETIN

Glossary of terms

The following special terms are used in the Desert Locust Bulletin when reporting locusts:

NON-GREGARIOUS ADULTS AND HOPPERS

ISOLATED (FEW)

- very few present and no mutual reaction occurring;
- 0 - 1 adult/400 m foot transect (or less than 25/ha).

SCATTERED (SOME, LOW NUMBERS)

- enough present for mutual reaction to be possible but no ground or basking groups seen;
- 1 - 20 adults/400 m foot transect (or 25 - 500/ha).

GROUP

- forming ground or basking groups;
- 20+ adults/400 m foot transect (or 500+/ha).

ADULT SWARM AND HOPPER BAND SIZES

VERY SMALL

- swarm: less than 1 km^2 • band: 1 - 25 m^2

SMALL

- swarm: 1 - 10 km^2 • band: 25 - 2,500 m^2

MEDIUM

- swarm: 10 - 100 km^2 • band: 2,500 m^2 - 10 ha

LARGE

- swarm: 100 - 500 km^2 • band: 10 - 50 ha

VERY LARGE

- swarm: 500+ km^2 • band: 50+ ha

RAINFALL

LIGHT

- 1 - 20 mm of rainfall.

MODERATE

- 21 - 50 mm of rainfall.

HEAVY

- more than 50 mm of rainfall.

OTHER REPORTING TERMS

BREEDING

- the process of reproduction from copulation to fledging.

SUMMER RAINS AND BREEDING

- July - September/October

WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July

DECLINE

- a period characterised by breeding failure and/or successful control leading to the dissociation of swarming populations and the onset of recessions; can be regional or major.

OUTBREAK

- a marked increase in locust numbers due to concentration, multiplication and gregarisation which, unless checked, can lead to the formation of hopper bands and swarms.

UPSURGE

- a period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to-gregarious breeding in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions.

PLAGUE

- a period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously.

RECESSION

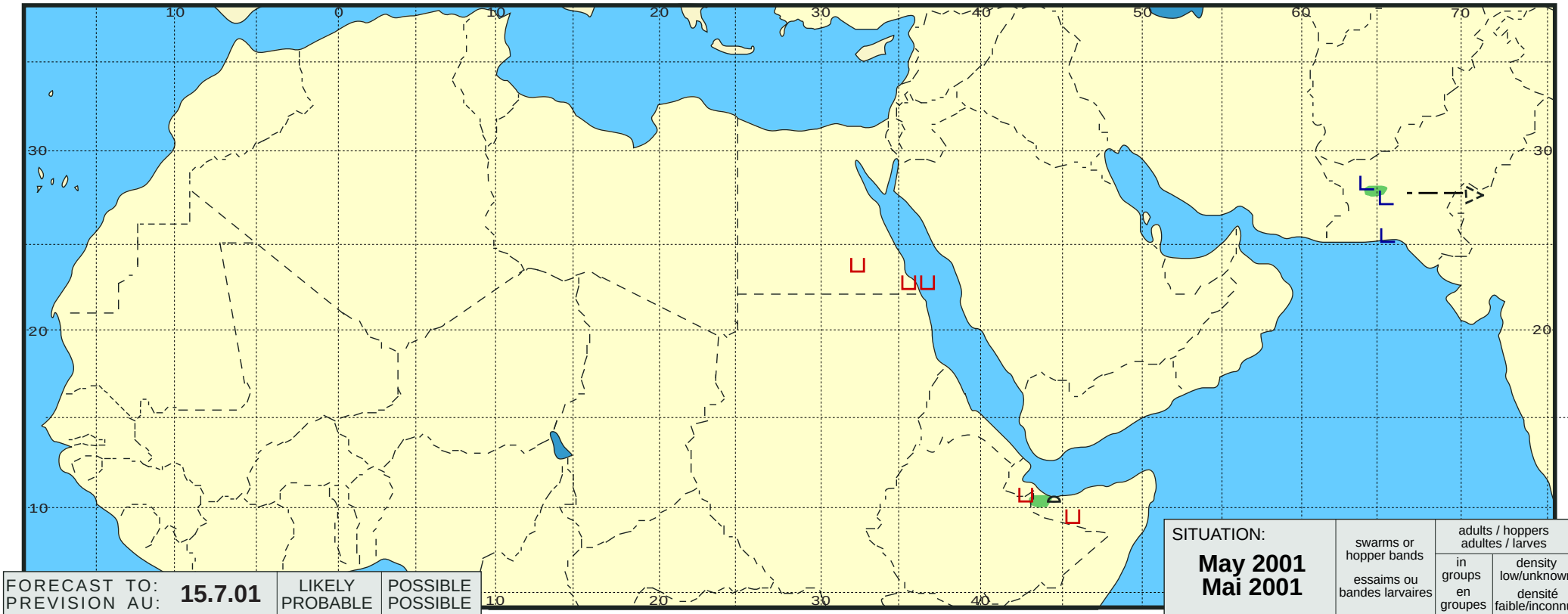
- period without widespread and heavy infestations by swarms.

REMISSION

- period of deep recession marked by the complete absence of gregarious populations.

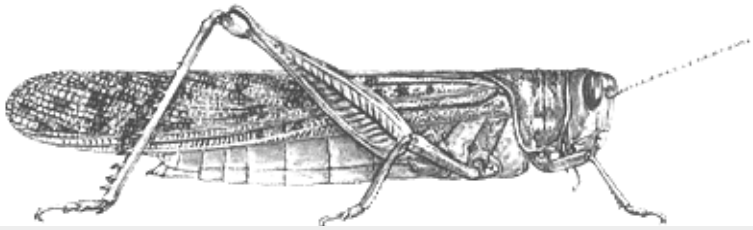
Desert Locust Summary
Criquet pèlerin - Situation résumée

272



FORECAST TO: PREVISION AU: **15.7.01**	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favourables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: **May 2001 Mai 2001**	swarms or hopper bands essaims ou bandes larvaires	adults / hoppers adultes / larves	
		in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures	■	□	⊔
mature or partly mature adults adultes matures ou partiellement matures	◣	◺	L
adults, maturity unknown adultes, maturité inconnue	▲	△	∧
egg laying or eggs pontes ou œufs	▼	▽	∨
hoppers larves	●	○	⌓
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)	◘	◙	⍥



DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations

No. 273
(6 July 2001)

General Situation during June 2001
Forecast until mid-August 2001

There were no significant developments in the Desert Locust situation which continued to remain calm during June. Solitarious adults were present in Egypt and low numbers of adults appeared in the summer breeding areas along the Indo-Pakistan border where the monsoon rains began at mid month. Ecological conditions have become favourable in parts of the Sahel in West Africa and Sudan where seasonal rains have started. Small scale breeding is expected during the forecast period in West Africa, Sudan and on both sides of the Indo-Pakistan border.

Western Region. No locusts were reported in the Region. Seasonal rains have started in the summer breeding areas of West Africa from south-eastern **Mauritania** to Tamesna, **Niger**. The rains that fell during June are thought to be sufficient for conditions to be favourable for breeding in most of these areas. As locust numbers are extremely low, it will take several generations before they build up to significant levels. This will depend on the continuation of rains during the summer in the breeding areas.

Central Region. A mixture of African Migratory Locust, grasshoppers and a few Desert Locusts were treated in agricultural areas in the Western Desert of **Egypt** during June. Elsewhere, good rains fell in the summer breeding areas of **Sudan** where conditions are becoming favourable. There is a slight possibility that locusts are present and breeding on a small scale in the interior of **Yemen** where heavy rains fell in May. In northern **Somalia**, breeding conditions remained favourable.

Eastern Region. Low numbers of solitarious adults appeared in the summer breeding areas of **Pakistan** near the Indian border during the second week of June which coincided with the arrival of the monsoon in Rajasthan, **India** and in adjacent desert areas in Pakistan. Breeding conditions are favourable earlier than usual this year due to pre-monsoon rains in May and the monsoon rains that fell during June. As a result, small scale breeding is expected to occur over a large area but it will take several generations before locust numbers increase to significant levels.

The FAO Desert Bulletin is issued monthly, supplemented by Updates during periods of increased Desert Locust activity, and is distributed by fax, e-mail, FAO pouch and airmail by the Locusts and Other Migratory Pests Group, AGP Division, FAO, 00100 Rome, Italy. It is also available on the Internet.
Telephone: +39 06 570.52420 (7 days/week, 24 hr)
Facsimile: +39 06 570.55271
E-mail: eclo@fao.org
Telex: 610181 FAO 1
Internet: http://www.fao.org/news/global/locusts/locuhome.htm

No. 273

DESERT LOCUST BULLETIN

Weather & Ecological Conditions in June 2001

Summer rains have started in the southern Sahel of West Africa and Sudan where conditions are favourable for breeding. In South-West Asia, the monsoon arrived along the Indo-Pakistan border where breeding conditions are favourable earlier than usual.

In **West Africa**, the Inter-Tropical Convergence Zone (ITCZ) oscillated around 15°N over Mauritania and between 15-20°N over Mali and Niger during June. As a result, the first rains of the summer began in the southern Sahel. In Mauritania, light rainfall started during the second week in the two Hodhs, extending to parts of Brakna, Assaba and Tagant during the last week of June. Sufficient rainfall was received in the southern parts of the two Hodhs for conditions to become favourable for breeding. In Mali, limited cold cloud activity started during the first dekad over central Mali between Tombouctou and Gao, extending to the Adrar des Iforas at mid month. Enough rains probably fell to allow breeding near Gao and in parts of the Adrar des Iforas. In Niger, cold clouds started to be present over southern Tamesna during the first dekad, reaching parts of the Air towards the end of the month. Light rains were reported at Tahoua and Agadez, and conditions are expected to be favourable for breeding in southern Tamesna. In Chad, cold cloud activity started in Biltine during the third dekad.

In **North-West Africa**, hot and dry conditions prevailed throughout the region except for isolated light showers in a few places of central and southern Algeria where temperatures reached 47°C. Ecological conditions were not favourable for breeding.

Correction: The report in Bulletin 272 that 70 mm of rain had fallen in Kufra, Libya was an error. No rain has fallen in this area at all.

In **Eastern Africa**, light rains continued to fall in the summer breeding areas of Sudan south of 15°N in Northern Kordofan and Northern Darfur where ecological conditions are expected to be improving. In the western lowlands of Eritrea, ecological conditions could start to improve in a few places as a result of run-off from the highlands where summer rains commenced during the last week of June. In Ethiopia, moderate rains fell at Dire Dawa during the last dekad of June while dry conditions persisted in the Ogaden. In Northern Somalia, light showers fell in a few places on the escarpment where conditions continued to remain favourable for breeding.

In the **Near East**, dry and hot conditions persisted throughout the Region. Only light rains fell in a few places in the interior of Saudi Arabia, in northern Oman, and on the southern coastal plains of the Red Sea in Yemen. Consequently, ecological conditions remained unfavourable for breeding in most areas with the possible exception of the interior in Yemen between Marib and Shabwah where heavy rains fell in May.

In **South-West Asia**, the monsoon reached Rajasthan, India during the second week of June bringing good rains to Phalodi (86 mm), Jodhpur (70 mm), and Shergarh (15 mm) while less rainfall was reported from Bikaner. Combined with the pre-monsoon showers in May, ecological conditions have become favourable for breeding earlier than usual over a large area of Rajasthan. In Pakistan, the monsoon arrived by mid June in the desert areas bordering India where Mirpurkhas reported 26 mm. Breeding conditions from Tharparkar to Cholistan are favourable earlier this year than in most due to monsoon rains as well as pre- monsoon showers during May.

Area Treated

Egypt	1,500 ha [1]	(June)

[1] *mainly Migratory Locust and grasshoppers mixed with some Desert Locust*

Desert Locust Situation and Forecast

(see also the summary on the first page)

WEST AFRICA

Mauritania

• **SITUATION**

No locusts were reported and no surveys were carried out in June.

• **FORECAST**

Isolated adults are likely to be present in parts of southern and south-eastern Mauritania where small

scale breeding will occur in areas of recent rainfall. It is expected that it will take several generations of breeding before locust numbers increase to significant levels.

Mali

• **SITUATION**

No reports received.

• **FORECAST**

Low numbers of adults are likely to be present in a few areas of the Adrar des Iforas where breeding could commence in places that have recently received rainfall.

Niger

• **SITUATION**

No locusts were seen during an aerial survey of Tamesna on 24 May and during a ground survey in southern Tamesna on 8 June.

• **FORECAST**

A few isolated adults are likely to be present in parts of Aïr and Tamesna. Small scale breeding could occur in parts of southern Tamesna. No significant developments are expected.

Chad

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Senegal

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Burkina Faso, Cape Verde, Gambia, Guinea Bissau, and Guinea Conakry

• **FORECAST**

No significant developments are likely.

NORTH-WEST AFRICA

Algeria

• **SITUATION**

No locusts were reported during June.

• **FORECAST**

No significant developments are likely.

Morocco

• **SITUATION**

No locusts were reported during June.

• **FORECAST**

No significant developments are likely.

Libyan Arab Jamahiriya

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Tunisia

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

EASTERN AFRICA

Sudan

• **SITUATION**

No locusts were reported and no surveys were carried out in June.

• **FORECAST**

Low numbers of adults may be present in parts of Northern Kordofan and Northern Darfur where small scale breeding could occur in areas of recent rainfall.

Eritrea

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Somalia

• **SITUATION**

A few immature adults were seen south of Hargeisa at Bahadamal (0900N/4415E) on 30 May. No other locusts were seen during surveys carried out on the escarpment near Hargeisa and Borama on 27-31 May.

• **FORECAST**

Scattered locusts may persist in a few areas of the escarpment and breed in those places that have recently received rainfall. No significant developments are likely.

Ethiopia

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Djibouti

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Kenya, Tanzania and Uganda

• **FORECAST**

No significant developments are likely.

NEAR EAST

Saudi Arabia

• **SITUATION**

No locusts were reported during June in the interior and along the Red Sea coastal plains.

• **FORECAST**

No significant developments are likely.

Yemen

• **SITUATION**

No locusts were reported and no surveys were carried out in June.

• **FORECAST**

A few adults may be present and could breed on a limited scale in the interior between Marib and Shabwah.

Egypt

• **SITUATION**

During June, isolated immature adults persisted at seven locations on the Red Sea coastal plains and subcoastal areas near Halaib. Control operations treated 1500 ha of hoppers and immature adults in crops at Sh. Oweinat (2240N/2845E) as well as at one farm in Bahariya Oasis at El Heiz (2802N/2838E). It is likely that the El Heiz infestations consisted primarily of grasshoppers while those at Sh. Oweinat were probably Migratory Locust and grasshoppers mixed with a few Desert Locust.

• **FORECAST**

Low numbers of Desert Locust are likely to persist and become mixed with other species in agricultural areas of Sh. Oweinat and may appear in Tushka. Locust numbers will decline on the Red Sea coast.

Kuwait

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Oman

• **SITUATION**

No locusts were reported and no surveys were carried out in June.

• **FORECAST**

No significant developments are likely.

United Arab Emirates

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Qatar, Syria Arab Republic and Turkey

• **FORECAST**

No significant developments are likely.

SOUTH-WEST ASIA

Iran

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Pakistan

• **SITUATION**

During the first half of June, low numbers of solitary adults moved from the spring breeding areas of Baluchistan east towards the summer breeding areas along the Indo-Pakistan border where immature adults were first reported on the 7th at Tamachi Tower (2804N/7133E). During the second week of the month, more adults were reported scattered throughout the summer breeding areas between Tharparkar and Cholistan at a total of 12 locations with densities of 1-5 per ha. In addition, isolated adults were present in the Las Bela area west of Karachi.

• **FORECAST**

Small scale breeding will occur in areas of recent rainfall from Tharparkar to Cholistan. Consequently, locust numbers are expected gradually to increase but remain at non-threatening levels during the forecast period.

India

• **SITUATION**

No locusts were reported during surveys carried out in Rajasthan from 23 May to 18 June.

• **FORECAST**

Low numbers of adults may already be present or will appear in Rajasthan near the Pakistan border be-

tween Barmer, Jaisalmer and Bikaner and lay on a small scale in areas of recent rainfall.

Afghanistan

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Other Locust species

Madagascar

Malagasy Migratory Locust (*Locusta migratoria capito*). Despite a late report confirming that the situation was under control at the end of May, scattered residual populations of solitarious and *transiens degregans* locusts still exist in some parts of the central and eastern regions of the outbreak area at densities of 50-500 locusts per ha. Laying during June may lead to an increase in locust numbers by the beginning of the next rainy season in November and further control operations could be required.

Red Locust (*Nomadacris septemfasciata*). At the end of May, adults were already in diapause in the south while, in the north where temperatures and humidity were higher, adults were not yet in diapause and were forming groups in the valleys. These groups represent a direct threat to cultivated areas.

The populations of these two locusts species will be carefully monitored during the upcoming dry season.

China

For the fourth consecutive year, an outbreak of Migratory Locust (*Locusta migratoria migratoria*) has developed in Xinjiang Region, western China. An outbreak of Tibetan locust (*Locusta migratoria burmana*) was reported in Tibet. Both outbreaks are said to have caused some damage to agricultural production. Grasshopper infestations were reported from 11 provinces in Inner Mongolia, Xinjiang, Heilongjiang, Qinghai and other areas of northern China. The highest densities were present in Yellow River, Huai River and Hai River valleys.

The Government has organized a control campaign, establishing a Grasshopper and Locust Prevention Office. Since early June, action has been taken to prevent crop damage. Over US$ 3 million has been allocated to support the campaign and more funds will be further mobilized.

Russia

A locust outbreak developed in northern Dagesthan during June in the flood plain of the Kuma River. An estimated 72,000 ha have been affected in Tarumsky district and an additional 260,000 ha are threatened in the Stravropol region. Most of the infestations consist of high numbers of hoppers. Ground and aerial control operations are in progress.

Peru

Two northern departments, Lambayeque and Cajamarca, continue to be infested by gregarious populations of *Schistocerca interrita*. The extension of the plague is particularly important in the latter area where primarily fifth instar hoppers, at densities up to 500 hoppers/m^2, fledglings and young adults were present in 14 districts of three provinces by the end of June. Damage by hopper bands was reported on maize, wheat and peas. Physical and chemical control, limited by the terrain, are in progress.

Compared to last year, the areas infested have progressed 60 km further east, and laying and hatching occurred two months earlier while hopper emergence was only 10 days earlier. This year's laying occurred at higher elevations, up to 1,200 m ASL, and in a wider range of habitats when compared to last year. FAO is providing TCP support to the national plant protection service.

Announcements

Locust reporting. Affected countries are kindly reminded to make sure that locust situation reports are sent to FAO HQ by the 25th day of the month so the information can be included in the FAO bulletin for the current month; otherwise, it will not appear until the following month. Reports should be sent even if no locusts were found or if no surveys were conducted.

Reporting by email. Affected countries are encouraged to send completed *FAO Desert Locust Survey and Control Forms* with a brief interpretation of the results by email to eclo@fao.org.

No. 273

DESERT LOCUST BULLETIN

eLocust. Details of a new system under evaluation for recording and transmitting locust survey and control data collected in the field can be found on the internet at:

http://www.fao.org/news/2001/010601-e.htm

Upcoming meetings. The following meetings are scheduled:

- 36th session of the DLCC, 24-28 September 2001 (Rome) which coincides with the 50th anniversary of FAO's involvement in Desert Locust management
- 9th EMPRES Liaison Officers Meeting, 13-18 October 2001 (Khartoum)
- 4th EMPRES Consultative Committee Meeting, 15-17 January 2002 (Cairo)
- 23rd session of the FAO Commission for Desert Locust Control in the Central Region (CRC), 26-30 January 2002 (Damascus)

Pesticide Referee Group. As no submissions have been received, the 9th meeting is postponed to next year.

New appointments. We are pleased to announce the selection of Mr. Christian Pantenius as the new EMPRES Field Coordinator for the Central Region and Mr. Munir Boutrous as the new Secretary of the Commission for Controlling the Desert Locust in the Central Region. Both of these persons will be based in Cairo.

Central Region Commission. The Government of Djibouti has confirmed their acceptance to become the 13th member of the Central Region Commission.

North-West Africa Commission. The report of the 23rd session recently held in Algers is available on the internet at:

http://www.fao.org/news/global/locusts/pdfs/meetings/CLCPANO23f.pdf

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VERY LARGE

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LIGHT

- 1 - 20 mm of rainfall.

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- more than 50 mm of rainfall.

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- the process of reproduction from copulation to fledging.

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WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July

DECLINE

- a period characterised by breeding failure and/or successful control leading to the dissociation of swarming populations and the onset of recessions; can be regional or major.

OUTBREAK

- a marked increase in locust numbers due to concentration, multiplication and gregarisation which, unless checked, can lead to the formation of hopper bands and swarms.

UPSURGE

- a period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to-gregarious breeding in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions.

PLAGUE

- a period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously.

RECESSION

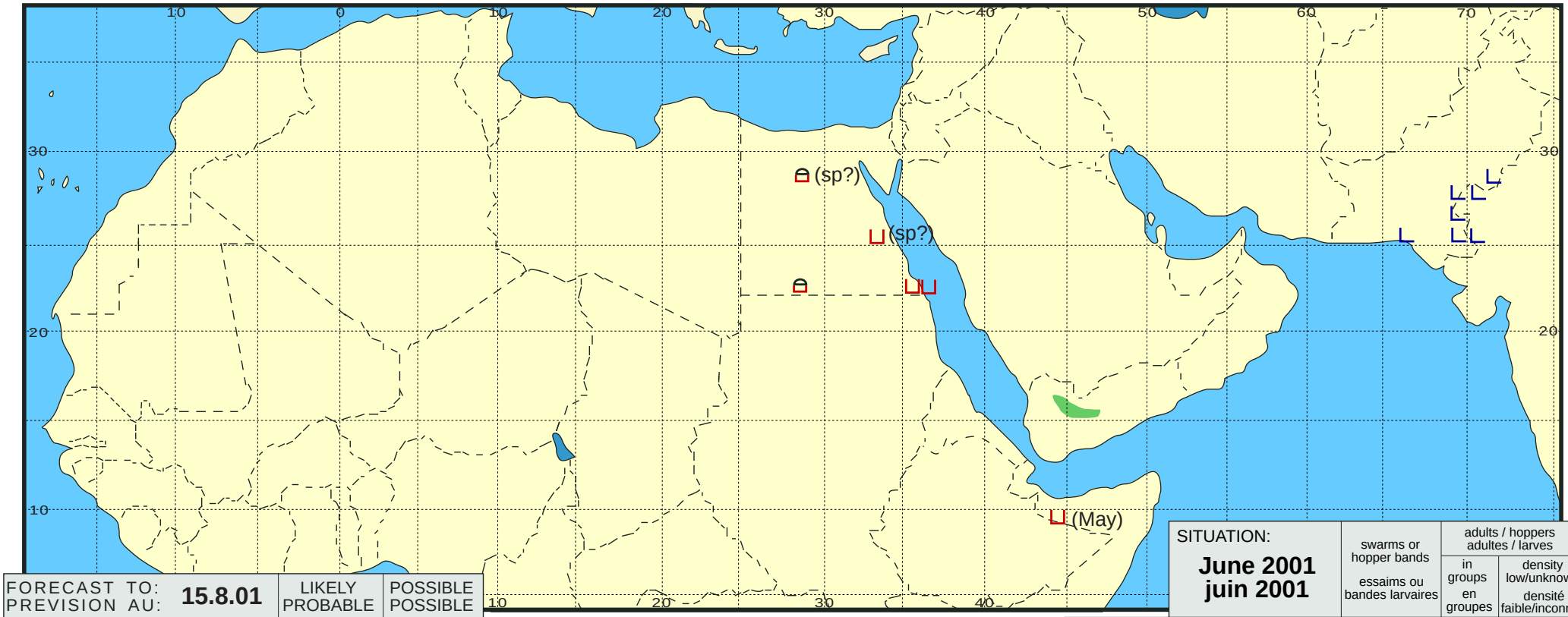
- period without widespread and heavy infestations by swarms.

REMISSION

- period of deep recession marked by the complete absence of gregarious populations.

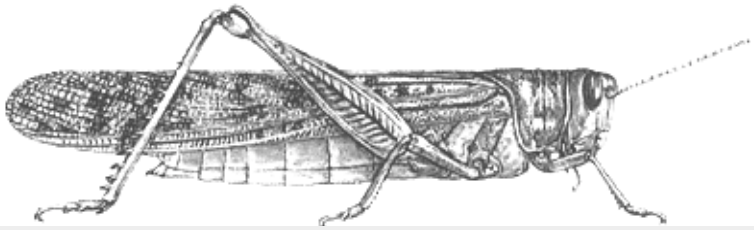
Desert Locust Summary
Criquet pèlerin - Situation résumée

273



FORECAST TO: PREVISION AU: **15.8.01**	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favourables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: **June 2001 juin 2001**	swarms or hopper bands essaims ou bandes larvaires	adults / hoppers adultes / larves in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures	■	□	⊔
mature or partly mature adults adultes matures ou partiellement matures	◣	◺	L
adults, maturity unknown adultes, maturité inconnue	▲	△	⋀
egg laying or eggs pontes ou œufs	▼	▽	⋁
hoppers larves	●	○	◡
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)	◘	◙	⊟



DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations

No. 274
(3 Aug 2001)

General Situation during July 2001
Forecast until mid-September 2001

The locust situation continued to remain calm during July. Despite widespread rains and good breeding conditions in West Africa, Sudan and along the Indo-Pakistan border, only insignificant numbers of solitarious adults have been reported in Sudan and Pakistan. Locust numbers are expected to increase gradually, but remain at non-threatening levels, in these areas as a result of breeding during the forecast period

Western Region. Although no locusts were reported in the Region, low numbers of solitarious adults are likely to be present in breeding in areas in southern **Mauritania**, northern **Mali**, northwestern **Niger** and perhaps in eastern **Chad** where rains fell during July. Locust numbers are expected to increase gradually in these areas during the forecast period. Surveys are recommended during August to monitor the situation.

Central Region. Isolated adults are present in a few places of the summer breeding areas in the interior of **Sudan** where small scale breeding is expected to occur during the forecast period because of the good rains that fell in July. A few locusts may be present and breeding in the interior desert and perhaps on the Red Sea coastal plains of **Yemen** where good rains fell during July. A mixture of what is thought to be African Migratory Locust, grasshoppers and a few Desert Locusts persisted in agricultural areas in the Western Desert of **Egypt** where control was undertaken.

Eastern Region. Exceptionally good rains fell for the second consecutive month over most of the summer breeding area along both sides of the Indo-Pakistan border. So far, only insignificant numbers of adults have been detected in **Pakistan** while similar populations are also likely to be present in adjacent areas of Rajasthan, **India**. Numbers will increase gradually as a result of breeding during the forecast period.

The FAO Desert Bulletin is issued monthly, supplemented by Updates during periods of increased Desert Locust activity, and is distributed by fax, e-mail, FAO pouch and airmail by the Locusts and Other Migratory Pests Group, AGP Division, FAO, 00100 Rome, Italy. It is also available on the Internet.
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Internet: http://www.fao.org/news/global/locusts/locuhome.htm

No. 274

DESERT LOCUST BULLETIN

Weather & Ecological Conditions in July 2001

Good rains continued to fall in the summer breeding areas of the Sahel in West Africa and Sudan and along the Indo-Pakistan border for the second consecutive month. Consequently, conditions are favourable or becoming favourable for breeding in most areas.

In **West Africa**, the Inter-Tropical Convergence Zone (ITCZ) oscillated between 18-20°N over West Africa and at times reached as far north as 25°N bringing rain to central Mauritania, northern Mali and Niger. During July, seasonal rains began in many areas of southern Mauritania and by the end of the month most areas of the two Hodhs and southern Trarza had received enough rain to allow conditions to become favourable for locust breeding. Elsewhere, rains were irregular in parts of Brakna and Assaba and isolated showers fell at the end of the month in central (Tidjikja) and northern (Bir Moghrein) regions. In Mali, heavy rains were reported in the Adrar des Iforas on the 26th (Tessalit, 69 mm) and good rains fell further south to Gao. Good rains also fell along the Niger River to Tombouctou. Consequently, ecological conditions are improving and are expected to be favourable for breeding in these areas. In Niger, breeding conditions have become favourable in most of southern and central Tamesna and in parts of Air because of light to moderate rainfall during July. In northeastern Chad, conditions are expected to be improving in Ouaddai, Biltine and near Fada in BET where lights rain fell.

In **North-West Africa**, hot and dry conditions prevailed throughout the region and no significant rainfall was reported. Consequently, ecological conditions were not favourable for breeding.

In **Eastern Africa**, good rains continued to fall in the summer breeding areas of Sudan extending from the Chad border and Northern Darfur to Northern Kordofan and the Nile River. Heavy flooding was reported in the Kassala area. Consequently, breeding conditions are favourable in most of these areas. Elsewhere, light to moderate rains were reported near Dire Dawa, Ethiopia and in a few coastal and interior areas of northwestern Somalia. Conditions in these areas are less favourable than in Sudan.

In the **Near East**, mostly dry and hot conditions prevailed throughout the Region except in Yemen where light to moderate showers were reported in the Shabwah region of the interior and heavier rains fell on the Red Sea coastal plains. Breeding conditions are likely to be already favourable or improving in these areas. In Saudi Arabia, light rain was reported on the Red Sea coast at Jizan. In Oman, light rain fell in the northern interior where it is hot and dry, and misty conditions prevailed in the south at Salalah because of the monsoon.

In **South-West Asia**, unusually heavy and widespread rainfall associated with the monsoon fell for the second consecutive month over the entire summer breeding area along both sides of the Indo-Pakistan border. Consequently, breeding conditions are exceptionally favourable this year in both countries and should remain so for several months. Elsewhere, light to heavy rains fell in coastal and some interior areas of Baluchistan, western Pakistan.

Area Treated

Egypt	70 ha [1]	(July)

[1] mainly Migratory Locust and grasshoppers mixed with some Desert Locust

Desert Locust Situation and Forecast

(see also the summary on the first page)

WEST AFRICA

Mauritania

• **SITUATION**

No locusts were reported and no surveys were carried out during July.

• **FORECAST**

Isolated adults are likely to be present and scattered throughout parts of the south from Trarza to the two Hodhs. Small scale breeding is likely to be in progress in areas of recent rainfall or will occur during the forecast period. Initial hopper numbers will be low and probably difficult to detect. It is expected that it will take several generations of breeding before numbers increase to significant levels.

Mali

• **Situation**

No reports received.

• **Forecast**

Locust numbers are expected to gradually increase in the Adrar des Iforas where scattered adults are likely to be present and breeding in areas of recent rainfall.

Niger

• **Situation**

No locusts were reported and no surveys were carried out up to 18 July.

• **Forecast**

Locust numbers are expected to gradually increase in Tamesna and parts of Air where scattered adults are likely to be present and breeding in areas of recent rainfall.

Chad

• **Situation**

No reports received.

• **Forecast**

A few isolated adults may be present in parts of Biltine and near Fada in BET where small scale breeding could occur in areas of recent rainfall.

Senegal

• **Situation**

No locusts were reported in the Senegal River Valley up to 31 July.

• **Forecast**

No significant developments are likely.

Burkina Faso, Cape Verde, Gambia, Guinea Bissau, and Guinea Conakry

• **Forecast**

No significant developments are likely.

NORTH-WEST AFRICA

Algeria

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Morocco

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Libyan Arab Jamahiriya

• **Situation**

No locusts were reported during June and July.

• **Forecast**

No significant developments are likely.

Tunisia

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

EASTERN AFRICA

Sudan

• **Situation**

A late report stated that isolated mature solitarious adults were present at two locations in the summer breeding areas of White Nile and Northern Kordofan provinces between Ed Dueim (1400N/3220E) and Umm Saiyala (1426N/3112E) on 28-29 June.

During July, no locusts were seen during surveys throughout most of Northern Kordofan except for isolated mature adults at one location near Sodiri (1423N/2906E) on the 19th.

• **Forecast**

Locust numbers are expected to gradually increase, but remain at non-threatening levels, in parts of Northern Kordofan and Northern Darfur as a result of small scale breeding during the forecast period. Isolated adults may appear in areas of recent flooding near Kassala.

Eritrea

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Somalia

• **Situation**

No reports received.

• **Forecast**

Scattered locusts may be present in a few areas of the northwestern escarpment. No significant developments are likely.

Ethiopia

• **Situation**

No locusts were seen during surveys on 3-12 July in the eastern region.

• **Forecast**

No significant developments are likely.

Djibouti

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Kenya, Tanzania and Uganda

• **Forecast**

No significant developments are likely.

NEAR EAST

Saudi Arabia

• **Situation**

No locusts were reported during July in the interior and along the Red Sea coastal plains.

• **Forecast**

A few isolated adults may be present on the Red Sea coastal plains near Jizan. No significant developments are likely.

Yemen

• **Situation**

No locusts were reported and no surveys were carried out in July.

• **Forecast**

A few adults may be present and breeding on a limited scale in areas of recent rainfall in the Shabwah region of the interior and perhaps on the Red Sea coastal plains. Surveys are recommended in these areas to check the situation.

Egypt

• **Situation**

During July, mixed infestations of grasshoppers, Migratory Locust and probably a few Desert Locusts persisted in cropping areas at Sh. Oweinat (2240N/2845E) where 30 ha were treated on the 20th. Elsewhere, isolated immature adults were reported in a few cropping areas along the shoreline of Lake Nasser.

• **Forecast**

Low numbers of Desert Locust are likely to persist and become mixed with other locust and grasshopper species in agricultural areas at Sh. Oweinat and Tushka. No significant developments are likely.

Kuwait

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Oman

• **Situation**

No locusts were reported and no surveys were carried out in July.

• **Forecast**

No significant developments are likely.

United Arab Emirates

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Qatar, Syria Arab Republic and Turkey

• **Forecast**

No significant developments are likely.

SOUTH-WEST ASIA

Iran

• **Situation**

No locusts were seen during surveys in Kerman and Hormozgan provinces in July.

• **Forecast**

No significant developments are likely.

Pakistan

• **Situation**

During the second half of June, low numbers of mature solitarious adults, at densities of 1-6 per ha, were present at 18 locations scattered throughout the summer breeding areas between Tharparkar and Cholistan and two west of Karachi near Las Bela.

During the first half of July, the number of locations reporting locusts increased slightly to 21 along the Indo-Pakistan border and three at Las Bela. There was no significant change in locust densities.

• **Forecast**

Small scale breeding is likely to be in progress within a large portion of the summer breeding areas between Tharparkar and Cholistan where good monsoon rains have fallen. Consequently, hoppers should appear and locust numbers are expected gradually to increase but remain at non-threatening levels during the forecast period.

India

• **Situation**

No locusts were reported during surveys carried out in Rajasthan from 19 June to 17 July.

• **FORECAST**

Low numbers of adults are likely to be present and breeding in Rajasthan near the Pakistan border between Barmer, Jaisalmer and Bikaner. Surveys are highly recommended in these areas.

Afghanistan

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Other Locust species

Peru

During July, gregarious populations of *Schistocerca interrita* persisted in the northern departments of Lambayeque and Cajamarca. Most of the infestations are affecting the three western provinces of Cajamarca. Hoppers have fledged and most of the resulting adults have formed groups that are moving towards the south where they should arrive shortly in the department of La Libertad.

Announcements

Locust reporting. Affected countries are kindly reminded to make sure that locust situation reports are sent to FAO HQ by the 25th day of the month so the information can be included in the FAO bulletin for the current month; otherwise, it will not appear until the following month. Reports should be sent even if no locusts were found or if no surveys were conducted.

Reporting by email. Affected countries are encouraged to send completed *FAO Desert Locust Survey and Control Forms* with a brief interpretation of the results by email to eclo@fao.org.

eLocust. Details of a new system under evaluation for recording and transmitting locust survey and control data collected in the field can be found on the Internet at:

http://www.fao.org/news/2001/010601-e.htm

Upcoming meetings. The following meetings are scheduled:

- 36th session of the DLCC, 24-28 September 2001 (Rome) which coincides with the 50th anniversary of FAO's involvement in Desert Locust management
- 9th EMPRES Liaison Officers Meeting, 13-18 October 2001 (Khartoum)
- 4th EMPRES Consultative Committee Meeting, 15-17 January 2002 (Cairo)
- 23rd session of the FAO Commission for Desert Locust Control in the Central Region (CRC), 26-30 January 2002 (Damascus)

Central Region Commission. Correction: The Government of Djibouti has confirmed their acceptance to become the **14th** member of the Central Region Commission.

No. 274

DESERT LOCUST BULLETIN

Glossary of terms

The following special terms are used in the Desert Locust Bulletin when reporting locusts:

NON-GREGARIOUS ADULTS AND HOPPERS

ISOLATED (FEW)

- very few present and no mutual reaction occurring;
- 0 - 1 adult/400 m foot transect (or less than 25/ha).

SCATTERED (SOME, LOW NUMBERS)

- enough present for mutual reaction to be possible but no ground or basking groups seen;
- 1 - 20 adults/400 m foot transect (or 25 - 500/ha).

GROUP

- forming ground or basking groups;
- 20+ adults/400 m foot transect (or 500+/ha).

ADULT SWARM AND HOPPER BAND SIZES

VERY SMALL

- swarm: less than 1 km^2 • band: 1 - 25 m^2

SMALL

- swarm: 1 - 10 km^2 • band: 25 - 2,500 m^2

MEDIUM

- swarm: 10 - 100 km^2 • band: 2,500 m^2 - 10 ha

LARGE

- swarm: 100 - 500 km^2 • band: 10 - 50 ha

VERY LARGE

- swarm: 500+ km^2 • band: 50+ ha

RAINFALL

LIGHT

- 1 - 20 mm of rainfall.

MODERATE

- 21 - 50 mm of rainfall.

HEAVY

- more than 50 mm of rainfall.

OTHER REPORTING TERMS

BREEDING

- the process of reproduction from copulation to fledging.

SUMMER RAINS AND BREEDING

- July - September/October

WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July

DECLINE

- a period characterised by breeding failure and/or successful control leading to the dissociation of swarming populations and the onset of recessions; can be regional or major.

OUTBREAK

- a marked increase in locust numbers due to concentration, multiplication and gregarisation which, unless checked, can lead to the formation of hopper bands and swarms.

UPSURGE

- a period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to- gregarious breeding in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions.

PLAGUE

- a period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously.

RECESSION

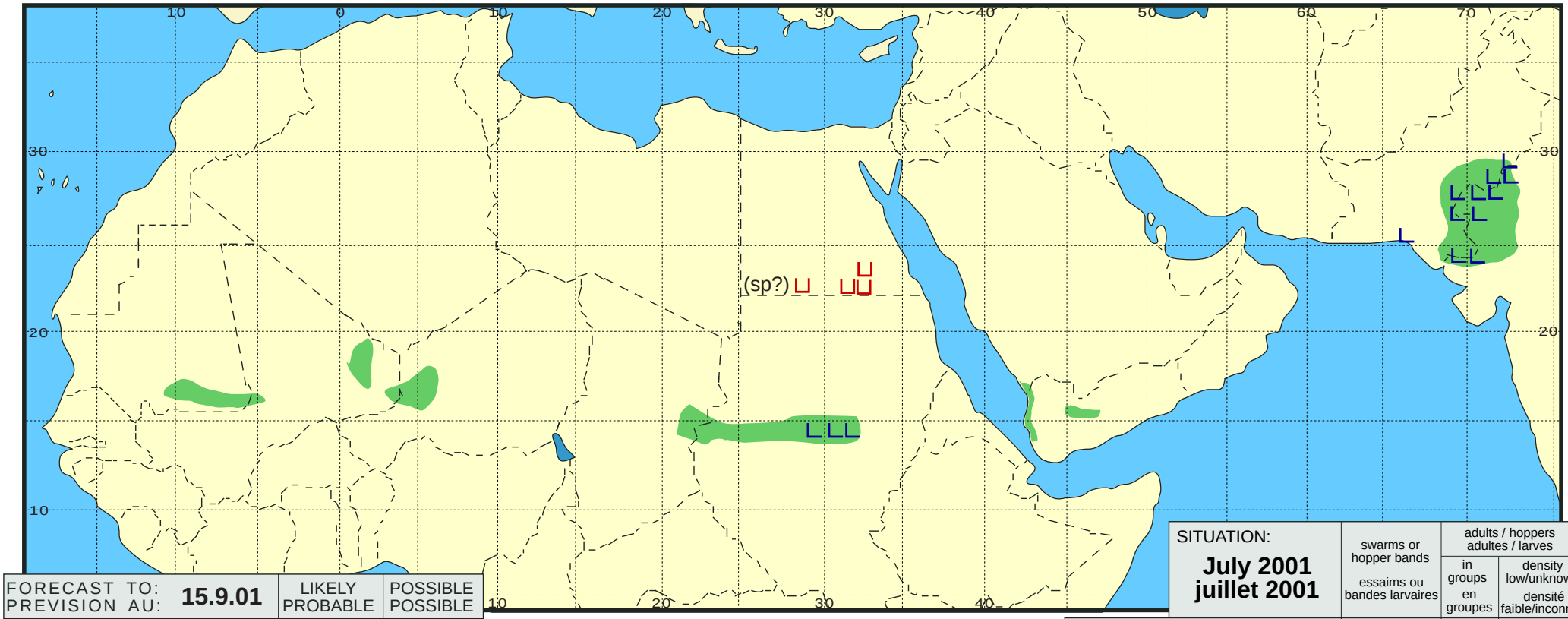
- period without widespread and heavy infestations by swarms.

REMISSION

- period of deep recession marked by the complete absence of gregarious populations.

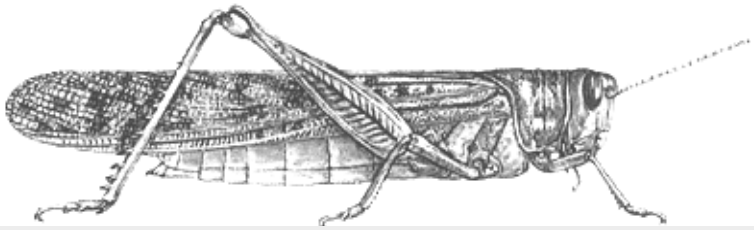
Desert Locust Summary
Criquet pèlerin - Situation résumée

274



FORECAST TO: PREVISION AU: **15.9.01**	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favourables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: **July 2001 juillet 2001**	swarms or hopper bands essaims ou bandes larvaires	adults / hoppers adultes / larves in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures	■	□	⊔
mature or partly mature adults adultes matures ou partiellement matures	◣	◺	L
adults, maturity unknown adultes, maturité inconnue	▲	△	∧
egg laying or eggs pontes ou œufs	▼	▽	∨
hoppers larves	●	○	◡
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)	◘	◙	⊕



DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations

No. 275
(6 Sep 2001)

General Situation during August 2001
Forecast until mid-October 2001

The Desert Locust situation remained calm during August. Although conditions are exceptionally favourable in the summer breeding areas, only insignificant numbers of locusts have been reported to date in Egypt, Mauritania, and Sudan and along the Indo-Pakistan border. Small-scale breeding is expected to continue somewhat longer than in most years but locust numbers are expected to continue to remain at non-threatening levels during the forecast period.

Western Region. The situation remained calm throughout the Region in August. Very low numbers of solitarious adults were reported in southern **Mauritania** and similar numbers are likely to be present in northern **Mali** and **Niger** and, perhaps, in northeastern **Chad**. Although conditions are favourable over most of the summer breeding areas, only small-scale breeding has been detected so far in Mauritania. Locusts are expected to gradually increase during the forecast period as breeding continues, but numbers will remain at non-threatening levels.

Central Region. Unusually heavy rains caused flooding along the Nile and Atbara rivers in **Sudan** as well as in eastern Sudan including Tokar Delta and in western **Eritrea**. Although breeding conditions are exceptionally favourable in both countries, only isolated locusts have been found so far in Sudan. Small-scale breeding will occur during the forecast period but locust numbers should continue to remain low and non-threatening. Good rains also fell on the Red Sea coast and interior of **Yemen**, on the southern Red Sea coast of **Saudi Arabia** and on the escarpment in northwestern **Somalia**. Scattered adults and small-scale breeding may occur in these areas. A few locusts mixed with other species persisted in agricultural schemes in the Western Desert of **Egypt** where control was undertaken.

Eastern Region. Good breeding conditions prevailed along the **Indo-Pakistan** border where monsoon rains continued but only isolated adults have been reported so far. Although small-scale breeding is almost certainly in progress and will continue during the forecast period, locust numbers should remain at a low and non-threatening level.

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Telephone: +39 06 570.52420 (7 days/week, 24 hr)
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Weather & Ecological Conditions in August 2001

Good rains fell for the third consecutive month in the summer breeding areas of the Sahel in West Africa and Sudan and along the Indo-Pakistan border. Conditions are likely to remain favourable for breeding longer this year than in most years.

In **West Africa**, the Inter-Tropical Convergence Zone (ITCZ) fluctuated between 15-20°N over West Africa and at times reached as far north as 25°N and as far south as 10°N. Good rains fell throughout the region during August. In Mauritania, rainfall was heaviest and well distributed in the two Hodhs and to a lesser extent in Brakna, Assaba and Trarza. Rains were more sporadic in Tagant and traces fell in southwestern Adrar. The northern extent of green vegetation is about 18°N or roughly along an east-west axis north of Oualata — In Amar — Tidjikja — north of Magta Lahjar — south of Nouakchott. Breeding conditions are favourable throughout these areas. In Mali, good rains fell in the southern Adrar des Iforas and adjacent areas of Tamesna. Green vegetation is present in the main wadis of these areas south of 20°N and isolated patches are present near Tin Kar, Timetrine. In Niger, good rains fell in parts of Tamesna and western Air where green vegetation is present and conditions are favourable for breeding. In eastern Chad, vegetation is green to about Fada (17°N).

In **North-West Africa**, hot and dry conditions persisted throughout the region and no significant rainfall was reported. Consequently, ecological conditions were not favourable for breeding.

In **Eastern Africa**, good rains fell throughout the region during August. Heavy rains fell in Sudan and the highlands of Eritrea and Ethiopia causing the Nile and Atbara rivers to flood as well as Khor Baraka in Tokar Delta. Vegetation is green in the summer breeding areas south of 16°N in Northern Darfur as far north as the Teiga Plateau, in Northern Kordofan and along the banks of the Atbara River, the Gash near Kassala and Khor Baraka. Vegetation was also green in the western lowlands of Eritrea and in Ethiopia along the railway and in the northern Ogaden due to the heavy rains. In Northern Somalia, heavy rains fell on the escarpment between Hargeisa and the Djibouti border as well as in most of Djibouti. Breeding conditions are favourable in all of these areas.

In the **Near East**, good rains fell along the Red Sea coastal plains from Jizan, Saudi Arabia to Zabid, Yemen as well as in the interior of Yemen in Shabwah and Hadramaut. A total of 206 mm was reported in Jizan during the first two weeks of August. In Yemen, green vegetation is present in the main wadis along the Red Sea coast, in parts of Shabwah, near Marib and perhaps on the southern edge of the Empty Quarter in Wadi Markhah and the plateau north of Sayoun. Elsewhere, dry conditions prevailed except for the coastal plains of Salalah, Oman where the summer monsoon is in progress.

In **South-West Asia**, good rains associated with the monsoon fell for the third consecutive month over much of the summer breeding area along both sides of the Indo-Pakistan border. Green vegetation was present in Tharparkar, southern Khairpur and Cholistan deserts in Pakistan and in most of Rajasthan, India. Breeding conditions are likely to remain favourable longer this year than in normal years due to the exceptionally heavy monsoon rains.

Area Treated

Egypt 360 ha [1]

[1] mainly Migratory Locust and grasshoppers mixed with some Desert Locust

Desert Locust Situation and Forecast

(see also the summary on the first page)

WEST AFRICA

Mauritania

• **SITUATION**

During August, isolated solitarious mature adults were reported from the 9th onwards scattered within several main areas: northeast of Nema (1632N/0712W), north and northwest of Aioun (1702N/0941W), between Nema and Aioun, and northwest of Moudjeria (1751N/1228W). A few first and second instar hoppers were seen in the latter area on the 20-21st suggesting that small scale breeding is in

progress but that hoppers numbers are low and difficult to detect. There was also one report of isolated adults in the southwest of the country.

• **Forecast**

Breeding will continue throughout the forecast period but locust numbers will remain low. A few new adults will start to appear during the second half of September. Despite unusually good conditions, no significant developments are expected.

Mali

• **Situation**

No reports received.

• **Forecast**

Scattered adults are likely to be present and breeding on a small scale in the main wadis of the southern Adrar des Iforas and in adjacent areas of Tamesna. Although this is expected to continue during the forecast period, locust numbers are likely to remain low.

Niger

• **Situation**

No reports received.

• **Forecast**

Scattered adults are likely to be present and breeding on a small scale in parts of Tamesna as far north as In Abangharit and in the western Air. Although this is expected to continue during the forecast period, locust numbers are likely to remain low.

Chad

• **Situation**

No reports received.

• **Forecast**

A few isolated adults may be present and breeding on a small scale in parts of Biltine and near Fada in BET.

Senegal

• **Situation**

No locusts were reported in the Senegal River Valley up to 31 August.

• **Forecast**

No significant developments are likely.

Burkina Faso, Cape Verde, Gambia, Guinea Bissau, and Guinea Conakry

• **Forecast**

No significant developments are likely.

NORTH-WEST AFRICA

Algeria

• **Situation**

No locusts were reported during July and August.

• **Forecast**

No significant developments are likely.

Morocco

• **Situation**

No locusts were reported during August.

• **Forecast**

No significant developments are likely.

Libyan Arab Jamahiriya

• **Situation**

No locusts were reported and no surveys were carried out in August.

• **Forecast**

No significant developments are likely.

Tunisia

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

EASTERN AFRICA

Sudan

• **Situation**

A late report indicated that isolated mature adults were found at two more locations in Northern Kordofan in July: Umm Sidir (1411N/3059E) and Umm Razuga (1407N/3105E) on the 23rd.

During August, similar infestations at densities up to 250 per ha were found in Northern Kordofan at several locations north of Sodiri (1423N/2906E) during a joint survey in the last week of the month.

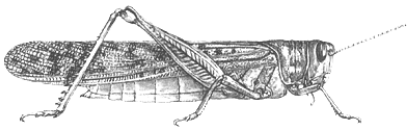
• **Forecast**

Small scale breeding is likely to be in progress in Northern Darfur and Northern Kordofan and will continue during the forecast period. Consequently, locust numbers will gradually increase but remain at non-threatening level. Scattered adults may appear in areas of recent flooding near Kassala, along the Atbara River and, perhaps by the end of the forecast period, in Tokar Delta where conditions are likely to become favourable earlier than usual due to the recent flooding.

Eritrea

• **Situation**

No locusts were reported during August.



• **Forecast**

Scattered adults are likely to be present and breeding on a small scale in the western lowlands.

Somalia

• **Situation**

No reports received.

• **Forecast**

Scattered locusts may be present in a few areas of the northwestern escarpment and breeding in areas of recent rainfall. No significant developments are likely.

Ethiopia

• **Situation**

No locusts were reported in the eastern region during August.

• **Forecast**

No significant developments are likely.

Djibouti

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Kenya, Tanzania and Uganda

• **Forecast**

No significant developments are likely.

NEAR EAST

Saudi Arabia

• **Situation**

No locusts were reported during August.

• **Forecast**

Scattered adults may be present and breeding on the Red Sea coastal plains near Jizan. No significant developments are likely.

Yemen

• **Situation**

Although no surveys were carried out during August, there were two unconfirmed reports of isolated solitarious locusts, one on the Red Sea coastal plains near Zabid (1403N/4318E) and the other in the Shabwah interior near Wadi Markhah (1459N/4548E).

• **Forecast**

Scattered adults are likely to be present and breeding on a small scale in areas of recent rainfall on the Red Sea coastal plains and perhaps in the Shabwah region of the interior. Surveys continue to be recommended in these areas to confirm the situation.

Egypt

• **Situation**

During August, isolated immature adults were reported at a few places along the Red Sea coastal plains and subcoastal areas near Halaib (2212N/3635E). Mixed infestations of grasshoppers, Migratory Locust and a few Desert Locust adults and hoppers persisted in cropping areas at Sh. Oweinat (2240N/2845E) where 630 ha were treated during the month.

• **Forecast**

Low numbers of Desert Locust will persist and become mixed with other locust and grasshopper species in agricultural areas at Sh. Oweinat and Tushka. No significant developments are likely.

Kuwait

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Oman

• **Situation**

No locusts were reported and no surveys were carried out in August.

• **Forecast**

No significant developments are likely.

United Arab Emirates

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Qatar, Syria Arab Republic and Turkey

• **Forecast**

No significant developments are likely.

SOUTH-WEST ASIA

Iran

• **Situation**

No locusts were seen during surveys in Kerman, Hormozgan and Sistan Baluchistan provinces in August.

• **Forecast**

No significant developments are likely.

Pakistan

• **SITUATION**

During the second half of July, there was no significant change in the locust situation along the Indo-Pakistan border and in the Las Bela area where insignificant numbers of solitarious mature adults continued to be reported.

No reports were received during the first half of August. During the second half of the month, low numbers of mature solitarious adults at densities of up to 8 per ha were reported at 21 locations along the Indo-Pakistan border and at two places in Las Bela.

• **FORECAST**

Small-scale breeding is likely to be in progress for the second consecutive month within a large portion of the summer breeding areas between Tharparkar and Cholistan where good monsoon rains have fallen. Consequently, locust numbers will gradually to increase but remain at non-threatening levels during the forecast period.

India

• **SITUATION**

During the first half of August, isolated adults were reported at one location in Bikaner district and at two places in Jaisalmer district in Rajasthan.

• **FORECAST**

Small-scale breeding is likely to be in progress for the second consecutive month in Rajasthan, primarily near the Pakistani border between Barmer, Jaisalmer and Bikaner. Consequently, locust numbers will gradually to increase but remain at non-threatening levels during the forecast period.

Afghanistan

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Announcements

Locust reporting. Affected countries are kindly reminded to make sure that locust situation reports are sent to FAO HQ by the 25th day of the month so the information can be included in the FAO bulletin for the current month; otherwise, it will not appear until the following month. Reports should be sent even if no locusts were found or if no surveys were conducted.

Reporting by email. Affected countries are encouraged to send completed *FAO Desert Locust Survey and Control Forms* with a brief interpretation of the results by email to eclo@fao.org.

eLocust. Details of a new system under evaluation for recording and transmitting locust survey and control data collected in the field can be found on the Internet at:

http://www.fao.org/news/2001/010601-e.htm

Upcoming meetings. The following meetings are scheduled:

- 36th session of the DLCC, 24-28 September 2001 (Rome) which coincides with the 50th anniversary of FAO's involvement in Desert Locust management
- 9th EMPRES Liaison Officers Meeting, 13-18 October 2001 (Khartoum)
- Expert Consultation on the Registration of Biopesticides for Desert Locust Control, 3-7 December 2001 (Rome)
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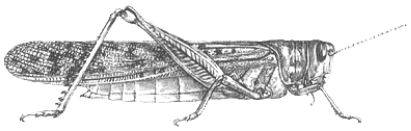

Glossary of terms

The following special terms are used in the Desert Locust Bulletin when reporting locusts:

NON-GREGARIOUS ADULTS AND HOPPERS

ISOLATED (FEW)

- very few present and no mutual reaction occurring;
- 0 - 1 adult/400 m foot transect (or less than 25/ha).

SCATTERED (SOME, LOW NUMBERS)

- enough present for mutual reaction to be possible but no ground or basking groups seen;
- 1 - 20 adults/400 m foot transect (or 25 - 500/ha).

GROUP

- forming ground or basking groups;
- 20+ adults/400 m foot transect (or 500+/ha).

ADULT SWARM AND HOPPER BAND SIZES

VERY SMALL

- swarm: less than 1 km^2 • band: 1 - 25 m^2

SMALL

- swarm: 1 - 10 km^2 • band: 25 - 2,500 m^2

MEDIUM

- swarm: 10 - 100 km^2 • band: 2,500 m^2 - 10 ha

LARGE

- swarm: 100 - 500 km^2 • band: 10 - 50 ha

VERY LARGE

- swarm: 500+ km^2 • band: 50+ ha

RAINFALL

LIGHT

- 1 - 20 mm of rainfall.

MODERATE

- 21 - 50 mm of rainfall.

HEAVY

- more than 50 mm of rainfall.

OTHER REPORTING TERMS

BREEDING

- the process of reproduction from copulation to fledging.

SUMMER RAINS AND BREEDING

- July - September/October

WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July

DECLINE

- a period characterised by breeding failure and/or successful control leading to the dissociation of swarming populations and the onset of recessions; can be regional or major.

OUTBREAK

- a marked increase in locust numbers due to concentration, multiplication and gregarisation which, unless checked, can lead to the formation of hopper bands and swarms.

UPSURGE

- a period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to- gregarious breeding in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions.

PLAGUE

- a period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously.

RECESSION

- period without widespread and heavy infestations by swarms.

REMISSION

- period of deep recession marked by the complete absence of gregarious populations.

Desert Locust Summary
Criquet pèlerin - Situation résumée

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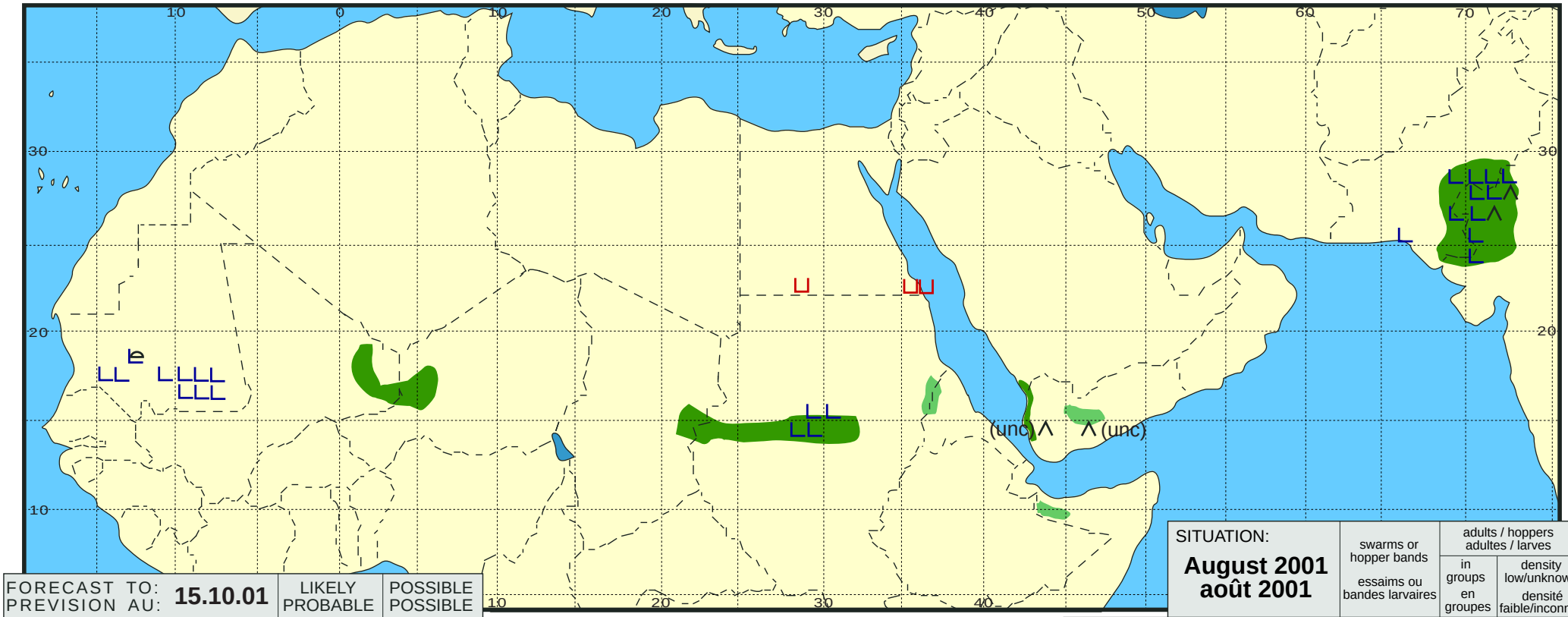
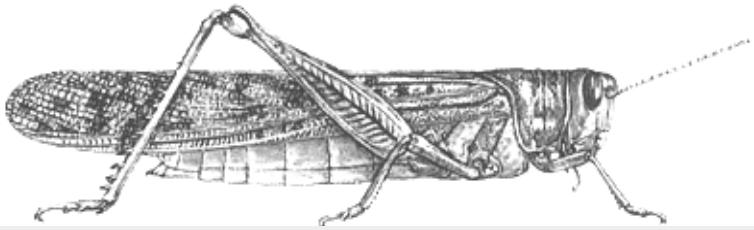


FORECAST TO: PREVISION AU: **15.10.01**	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favourables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: **August 2001 août 2001**	swarms or hopper bands essaims ou bandes larvaires	adults / hoppers adultes / larves	
		in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures	■	□	⊔
mature or partly mature adults adultes matures ou partiellement matures	◣	◺	L
adults, maturity unknown adultes, maturité inconnue	▲	△	Λ
egg laying or eggs pontes ou œufs	▼	▽	V
hoppers larves	●	○	◡
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)	◘	◙	⊟



DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations

No. 276
(4 Oct 2001)

General Situation during September 2001
Forecast until mid-November 2001

The Desert Locust situation continued to remain calm during September. Isolated breeding occurred in Mauritania and Sudan and probably also in the summer breeding areas along the Indo-Pakistan border. Despite unusually favourable conditions, locust numbers remain low and non-threatening. Breeding may continue in a few places in the Sahel of West Africa during the forecast period but no significant developments are expected.

Western Region. Scattered adults were present in **Mauritania** and **Niger** and isolated instances of breeding were reported in a few places in southern Mauritania. Although no survey reports were received from northern **Mali** and eastern **Chad** where breeding conditions are favourable, there is no evidence so far to believe that the situation is any different from that in their neighbouring countries where surveys have been undertaken. During the forecast period, breeding is expected to continue in parts of southern Mauritania and northern Mali. Consequently, locust numbers will gradually increase and, when vegetation begins to dry out, adults may concentrate and perhaps form a few small groups. Some of these could move to northwest Mauritania where conditions are becoming favourable. Nevertheless, locust numbers should remain at non-threatening levels.

Central Region. Small-scale breeding occurred in Northern Kordofan, **Sudan** and probably in adjacent areas on Northern Darfur during September. This may have extended into the western lowlands of **Eritrea** where conditions are unusually favourable. During the forecast period, low numbers of solitarious adults are likely to appear on the Red Sea coastal plains of Sudan and Eritrea. There was one report of a few adults already present on the Eritrean coast. Scattered adults were seen on the Red Sea coastal plains of **Yemen** and they may be present near Jizan, **Saudi Arabia**. Small-scale breeding is likely to occur in both countries but numbers should remain low. A few locusts were reported in cropping areas near Lake Nasser, **Egypt**.

Eastern Region. Breeding conditions continue to remain favourable along the Indo-Pakistan border where only low numbers of solitarious adults were reported in **India** and **Pakistan**. By the end of September, the monsoon rains had ended and vegetation was starting dry out in a few places. No significant developments are expected.

The FAO Desert Bulletin is issued monthly, supplemented by Updates during periods of increased Desert Locust activity, and is distributed by fax, e-mail, FAO pouch and airmail by the Locusts and Other Migratory Pests Group, AGP Division, FAO, 00100 Rome, Italy. It is also available on the Internet.
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Telex: 610181 FAO 1
Internet: http://www.fao.org/news/global/locusts/locuhome.htm

No. 276

DESERT LOCUST BULLETIN

Weather & Ecological Conditions in September 2001

Good rains continued for the fourth consecutive month in the summer breeding areas of the Sahel in West Africa and Sudan but declined along the Indo-Pakistan border. Conditions are likely to remain favourable for breeding longer this year than in most years.

In **West Africa**, the Inter-Tropical Convergence Zone (ITCZ) gradually moved southwards during September, reaching about 15°N by the end of the month. Prevailing winds north of the ITCZ were from the north and northeast while south of the ITCZ they were from the south and southeast. Good rains continued to fall throughout most of the summer breeding areas although there was a steady decline in Mauritania and Niger during September. In Mauritania, light to moderate rains, heavy at times, were reported in the south where conditions remain favourable except in parts of the southeast where some vegetation began to dry out at the end of the month. During the last dekad, there was an increase in rainfall in the west, especially in Inchiri where vegetation is becoming green in some places. In Mali, light to moderate rains fell in the Adrar des Iforas and southern Tamesna. Heavy rains were reported at Tessalit (50 mm on 2-4 September). Green vegetation continues to be present in the main wadis of the Adrar des Iforas north to the Algerian border, in the Tilemsi Valley and in a few places of Timetrine near Tin Kar. In Niger, cold cloud activity declined throughout the month, moving steadily southwards, and only light rains fell in Tamesna. Vegetation was green as far north as In Abangharit and in the western Air. Light rains fell in the east at Bilma. In eastern Chad, vegetation remained green as far north as Fada (17°N).

In **North-West Africa**, hot and dry conditions persisted throughout the region and no significant rainfall was reported. Because of rainfall during August, vegetation was reported to be green in a few places in southwest Morocco near Dakhla. Nevertheless, ecological conditions were not favourable for breeding in the Region.

In **Eastern Africa**, good rains, heavy at times, continued to fall in the summer breeding areas of Sudan where green vegetation favourable for breeding was present as far north as 16°N in Northern Darfur and Northern Kordofan. In northern and eastern Sudan, conditions were also favourable along the Atbara River, the Gash near Kassala and Khor Baraka because of recent rains. In Eritrea, significant cold cloud activity most likely resulting in light to moderate rains was apparent over the western lowlands where green vegetation is already present along Khor Baraka and over the southern coastal plains of the Red Sea. There were reports of vegetation starting to green up on the northern coastal plains. In Northern Somalia, light to moderate rains fell on the northwestern escarpment and heavy rains fell at Borama.

In the **Near East**, significant cold cloud activity was present along the Red Sea coastal plains of Yemen extending north to Jizan, Saudi Arabia throughout September. Consequently, low to moderate rains fell in these areas and vegetation is green in the main wadis where conditions are favourable for breeding. Elsewhere, dry conditions prevailed throughout the region except for the coastal plains of Salalah, Oman where the summer monsoon was in progress until mid month.

In **South-West Asia**, good rains associated with the monsoon continued to fall during the first half of the month in the summer breeding areas of Rajasthan, India. During the second half of the month, less rain fell, and by the end of September, the monsoon had ended. Nevertheless, breeding conditions remained favourable in Tharparkar and Cholistan deserts in Pakistan and in most of Rajasthan, India. Conditions were less favourable in Khairpur desert, Pakistan.

Area Treated

No control operations were reported in September.

WEST AFRICA

Desert Locust Situation and Forecast

(see also the summary on the first page)

Mauritania

• **SITUATION**

During September, individual mature adults were seen at a few places, primarily in the central areas of the south near Moudjeria (1751N/1228W) where some

120 ha were infested with densities of 20-53 adults per ha, to a lesser extent in the southeast near Nema (1632N/0712W), and in the southwest near Boutilimit (1740N/1446E). Isolated adults were also found west and northwest of Tidjikja (1829N1131W). So far, very little breeding has been detected; only one hopper was seen near Kiffa (1638N/1124W) on the 4th.

• **FORECAST**

Small scale breeding in the south will be extended this year because of the good rains and unusually favourable conditions. Consequently, locust numbers are expected to gradually increase in the south. As vegetation dries out, adults will move towards the west and northwest and lay in areas of recent rainfall such as Inchiri. The scale of this movement and subsequent breeding is expected to be small and remain at non-threatening levels.

Mali

• **SITUATION**

No reports received.

• **FORECAST**

Scattered adults are likely to be present and breeding on a small scale in the main wadis of the southern Adrar des Iforas and in adjacent areas of the Tilemsi Valley. Consequently, locust numbers are expected to gradually increase and, when vegetation begins to dry out, locusts may concentrate and perhaps form a few small groups.

Niger

• **SITUATION**

Isolated maturing solitarious adults at densities up to 10 per ha were seen in a few places of Tamesna near In Abangharit (1754N/0559E) in early September. Similar populations were reported southwest of Termit Massif near Talras (1630N/1013E).

• **FORECAST**

Scattered adults are likely to be present and breeding on a small scale in parts of Tamesna as far north as In Abangharit and in the western Air. Although this is expected to continue during the forecast period, locust numbers are likely to remain low.

Chad

• **SITUATION**

No reports received.

• **FORECAST**

A few isolated adults may be present and breeding on a small scale in parts of Biltine and near Fada in BET. If so, locust activity will decline as vegetation dries out during the forecast period.

Senegal

• **SITUATION**

No locusts were reported in the Senegal River Valley up to 30 September.

• **FORECAST**

No significant developments are likely.

Burkina Faso, Cape Verde, Gambia, Guinea Bissau, and Guinea Conakry

• **FORECAST**

No significant developments are likely.

NORTH-WEST AFRICA

Algeria

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Morocco

• **SITUATION**

No locusts were reported during September.

• **FORECAST**

No significant developments are likely.

Libyan Arab Jamahiriya

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Tunisia

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

EASTERN AFRICA

Sudan

• **SITUATION**

Small-scale breeding occurred during August and September in Northern Kordofan where fledglings were seen at one location west of Umm Saiyala (1426N/3112E) on 3 September. Elsewhere, immature adults at densities up to 25 per ha were reported at three places northwest of Ed Dueim (1400N/3220E) and two places southeast of Shendi (1641N/3322E) during September.

• **Forecast**

Small scale will continue in Northern Darfur and Northern Kordofan and locust numbers will gradually increase but remain at a non-threatening level. Scattered adults and small-scale breeding may occur in areas of previous flooding along the Atbara River and near Kassala. During the forecast period, low numbers of solitarious adults are likely to start to appear on the southern coastal plains of the Red Sea.

Eritrea

• **Situation**

Some solitary adults were seen on the northern coastal plains of the Red Sea during September. Further details are awaited.

• **Forecast**

Scattered adults are likely to be present and breeding on a small scale in the western lowlands. During the forecast period, low numbers of solitarious adults are likely to start to appear on the Red Sea coastal plains.

Somalia

• **Situation**

No reports received.

• **Forecast**

Scattered locusts may be present in a few areas of the northwestern escarpment and breeding in areas of recent rainfall. No significant developments are likely.

Ethiopia

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Djibouti

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Kenya, Tanzania and Uganda

• **Forecast**

No significant developments are likely.

NEAR EAST

Saudi Arabia

• **Situation**

No reports received.

• **Forecast**

Scattered adults may be present and breeding on the Red Sea coastal plains near Jizan. No significant developments are likely.

Yemen

• **Situation**

Scattered immature solitarious adults at densities up to 100 per ha were present at two locations on the northern Red Sea coast west of Suq Abs (1600N/4312E) on 4 September. No locusts were seen elsewhere during surveys carried out on the Red Sea coastal plains, the coastal plains near Aden and in the highlands near Taiz.

• **Forecast**

Small-scale breeding will occur during the forecast period in areas of recent rainfall along the Red Sea coastal plains. Consequently, locust numbers will gradually increase but remain at non-threatening levels.

Egypt

• **Situation**

Isolated immature adults were seen in a few cropping areas near Tushka (2247N/3126E) and along Lake Nasser during September.

• **Forecast**

Low numbers of Desert Locust, mixed with other locust and grasshopper species, are likely to decline in agricultural areas at Sh. Oweinat and Tushka. No significant developments are likely.

Kuwait

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Oman

• **Situation**

No locusts were reported and no surveys were carried out in September.

• **Forecast**

No significant developments are likely.

United Arab Emirates

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Qatar, Syria Arab Republic and Turkey

• **FORECAST**

No significant developments are likely.

SOUTH-WEST ASIA

Iran

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Pakistan

• **SITUATION**

During September, low numbers of solitarious maturing adults at densities up to 7 per ha continued to be reported along the Indo-Pakistan border from Tharparkar in the south to Cholistan in the north. The number of reports steadily decreased during the month. Although breeding was not detected this summer, it is thought to have occurred at a very low level and the current adults probably represent a second generation.

• **FORECAST**

Locust numbers will continue to decline as vegetation dries out. No significant developments are expected.

India

• **SITUATION**

During the second half of August, isolated adults were reported at Ghotaru (2723N/7005E) in Jaisalmer district, Rajasthan. No locusts were seen during surveys from 1-25 September.

• **FORECAST**

Locust numbers will continue to decline as vegetation dries out. No significant developments are expected.

Afghanistan

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Announcements

Locust reporting. Affected countries are kindly reminded to make sure that locust situation reports are sent to FAO HQ by the 25th day of the month so the information can be included in the FAO bulletin for the current month; otherwise, it will not appear until the following month. Reports should be sent even if no locusts were found or if no surveys were conducted.

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- 4th EMPRES Consultative Committee Meeting, 15-17 January 2002 (Cairo)
- 23rd session of the FAO Commission for Desert Locust Control in the Central Region (CRC), 9-14 March 2002 (Damascus)

Mr. Moussa Sissoko. It is with deep regret that we announce the death of Mr. Moussa Sissoko (Chief, Plant Protection Unit and Locust Control, Mali) and seven others including PV staff in a helicopter crash near Mopti, Mali on 8 September. We would like to express our sincere condolences to the families and the government.

No. 276

DESERT LOCUST BULLETIN

Glossary of terms

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- very few present and no mutual reaction occurring;
- 0 - 1 adult/400 m foot transect (or less than 25/ha).

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- enough present for mutual reaction to be possible but no ground or basking groups seen;
- 1 - 20 adults/400 m foot transect (or 25 - 500/ha).

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- forming ground or basking groups;
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LARGE

- swarm: 100 - 500 km^2 • band: 10 - 50 ha

VERY LARGE

- swarm: 500+ km^2 • band: 50+ ha

RAINFALL

LIGHT

- 1 - 20 mm of rainfall.

MODERATE

- 21 - 50 mm of rainfall.

HEAVY

- more than 50 mm of rainfall.

OTHER REPORTING TERMS

BREEDING

- the process of reproduction from copulation to fledging.

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- July - September/October

WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July

DECLINE

- a period characterised by breeding failure and/or successful control leading to the dissociation of swarming populations and the onset of recessions; can be regional or major.

OUTBREAK

- a marked increase in locust numbers due to concentration, multiplication and gregarisation which, unless checked, can lead to the formation of hopper bands and swarms.

UPSURGE

- a period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to- gregarious breeding in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions.

PLAGUE

- a period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously.

RECESSION

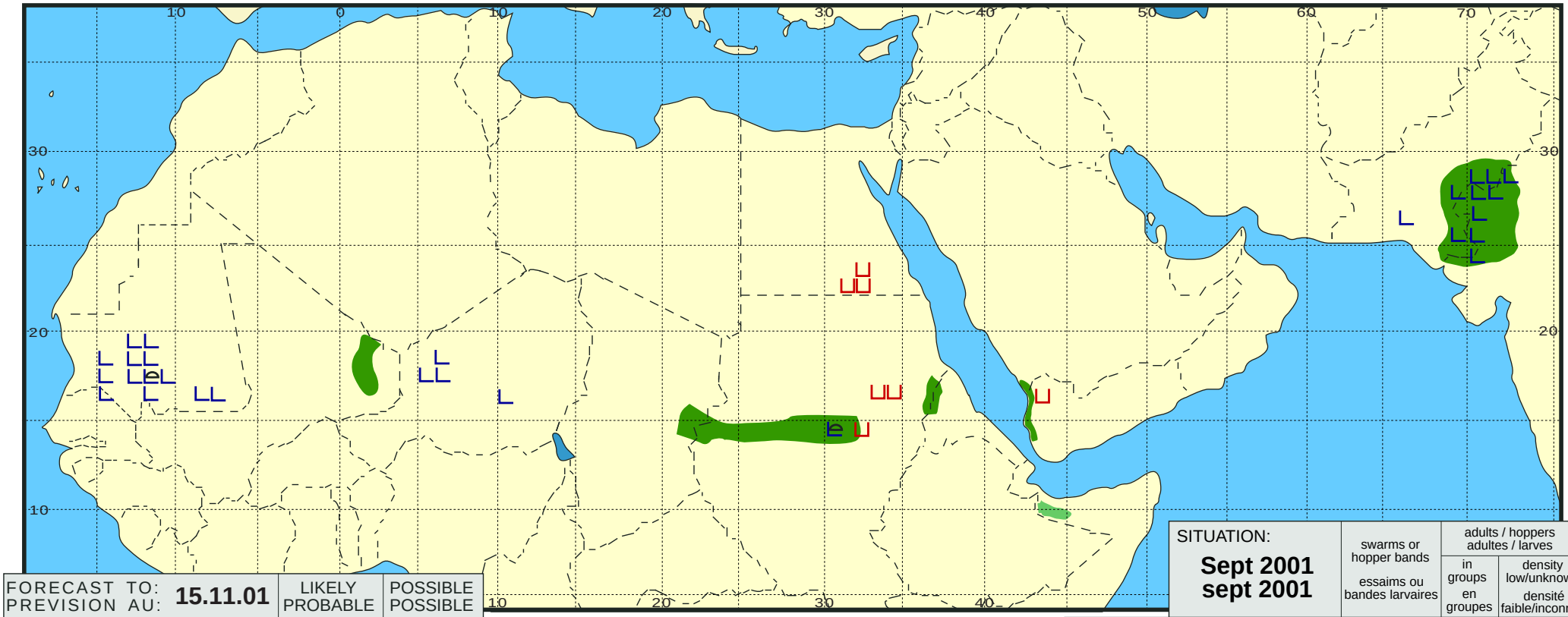
- period without widespread and heavy infestations by swarms.

REMISSION

- period of deep recession marked by the complete absence of gregarious populations.

Desert Locust Summary
Criquet pèlerin - Situation résumée

276



FORECAST TO: PREVISION AU: **15.11.01**	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favourables à la reproduction		
major swarm(s) essaim(s) important(s)		
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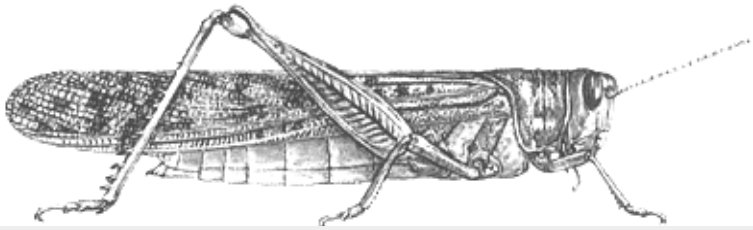
non swarming adults adultes non essaimant		

SITUATION: **Sept 2001 sept 2001**	swarms or hopper bands essaims ou bandes larvaires	adults / hoppers adultes / larves in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures	■	□	⊔
mature or partly mature adults adultes matures ou partiellement matures	◣	◺	L
adults, maturity unknown adultes, maturité inconnue	▲	△	⋀
egg laying or eggs pontes ou œufs	▼	▽	⋁
hoppers larves	●	○	◡
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)	◘	◙	⊟



DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations

No. 277
(5 Nov 2001)

General Situation during October 2001
Forecast until mid-December 2001

The Desert Locust situation remained calm during October. Isolated breeding continued in parts of western Mauritania and Niger. The seasonal rains in the Sahel of West Africa, Sudan and along the Indo-Pakistan border have finished and vegetation is drying up in most places. During the forecast period, low numbers of adults are likely to appear in winter breeding areas along the coastal plains of the Red Sea and in northwestern Mauritania. Although no significant developments are expected, regular surveys are recommended in the above areas.

Western Region. Low numbers of solitarious adults were present in western **Mauritania** and northern **Niger** during October where small-scale breeding was in progress in a few places. A similar situation is likely in northern **Mali**. At least another generation of breeding is proably required before locust numbers are likely to start reaching threatening levels but this is not likely to occur because the summer rains have stopped and vegetation is drying out. During the forecast period, scattered adults are expected to appear and lay on a limited basis in northwestern Mauritania where unusually heavy rains fell in late September.

Central Region. No locusts were reported in the Region during October. Summer breeding has probably ended in the interior of **Sudan** where little rain fell in the past month and vegetation is drying out. During the forecast period, low numbers of adults are likely to appear and lay on the Red Sea coast, primarily in the Tokar Delta of Sudan, which received heavy rainfall in late October, and to a lesser extent on the surrounding plains as far south as northern **Eritrea**. On the eastern side of the Red Sea, scattered adults are likely to be present and will lay in coastal areas of **Yemen** and near Jizan, **Saudi Arabia** where good rains have fallen on a regular basis since July. In the Western Desert of **Egypt**, grasshoppers and African Migratory Locusts, mixed with a few Desert Locusts, were treated in cropping areas near the Sudanese border.

Eastern Region. Low numbers of solitarious adults persisted in the summer breeding areas along the **Indo-Pakistan** border where vegetation was becoming dry in most places. During the forecast period, further breeding is not likely to occur and locust numbers will decline in both countries. No significant developments are expected.

The FAO Desert Bulletin is issued monthly, supplemented by Updates during periods of increased Desert Locust activity, and is distributed by fax, e-mail, FAO pouch and airmail by the Locusts and Other Migratory Pests Group, AGP Division, FAO, 00100 Rome, Italy. It is also available on the Internet.
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Internet: http://www.fao.org/news/global/locusts/locuhome.htm

Weather & Ecological Conditions in October 2001

There was a significant decline in rainfall in all summer breeding areas during October and vegetation is drying out. Good rains fell in the winter breeding areas along the Red Sea coast in Sudan, Yemen and parts of Saudi Arabia where breeding conditions are improving.

In **West Africa**, the Inter-Tropical Convergence Zone (ITCZ) continued to retreat southwards during October, reaching about 10°N by the end of the month. Consequently, very little rain fell during October in the Sahel except for a few isolated showers in Mauritania and Niger. Vegetation was reported to be drying out in most areas. In Mauritania, the only report of significant rainfall was in Tagant at Moudjeria (43 mm) on the 10th although rains may have extended further north into El Khatt as far as Oujeft. Breeding conditions remain favourable in southwestern Tagant, southern Adrar, northern Trarza and northern Brakna. Conditions are improving in western Inchiri because of unusually heavy rains in late September. In Mali, no rainfall was reported or thought to have occurred in the north where vegetation is likely to be drying out. In northern Niger and eastern Chad, no rains were reported and vegetation is becoming dry.

In **North-West Africa**, only scattered showers were reported and breeding conditions continued to be unfavourable. In Morocco, light to moderate rains fell at times during October on the southern side of the Atlas Mountains in Morocco at Errachidia. Dry vegetation was reported in Oued Draa and further south in the Adrar Souttouf region. In Algeria, light rains were reported in the northwest, between Bechar and Timimoun, but vegetation was dry.

In **Eastern Africa**, rainfall declined in the summer breeding areas of Sudan where only light showers were reported in a few places of Northern Kordofan and Khartoum during the first week of October. Consequently, vegetation is drying out in all areas. Early rains fell in the winter breeding areas along the southern coastal plains of the Red Sea at the end of the month. On the 25th, light rains were reported between Suakin and Tokar Delta and heavy showers fell in Tokar. Cold cloud activity suggests that additional rains may have occurred from Tokar to Karora, Eritrea during the second half of the month and light showers may have fallen on the northern coast of Sudan near Mohamed Qol on the 26th. Consequently, breeding conditions are likely to be improving in Tokar Delta and to a lesser extent on the coastal plains from Suakin to Karora. In northern Somalia, light to moderate showers fell on the escarpment near Hargeisa where conditions are likely to be favourable for breeding.

In the **Near East**, significant cold cloud activity was present and good rains fell along the Red Sea coastal plains of Yemen extending north to Jizan, Saudi Arabia during October. Good rains have fallen on a regular basis in this area since July. As a result, conditions are expected to be favourable for breeding in the main wadis and to a lesser extent elsewhere on the coastal plains. Elsewhere, dry conditions prevailed throughout the region.

In **South-West Asia**, high temperatures prevailed in the summer breeding areas along the Indo-Pakistan border. In India, light to moderate rains were reported during the first half of October in Rajasthan at Barmer, Bikaner and Jodhpur. Breeding conditions remain favourable in parts of Rajasthan, primarily near Palanpur, Jodhpur and Nagaur while vegetation is starting to dry out elsewhere in Rajasthan as well as in adjacent areas of Pakistan.

Area Treated

Egypt[1] 1,824 ha (October)

[1] mainly grasshoppers and African Migratory Locust

Desert Locust Situation and Forecast

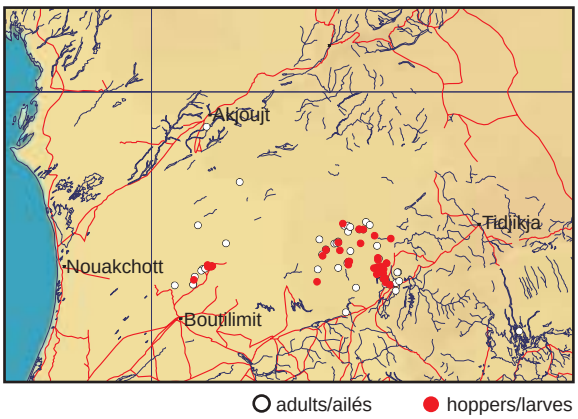
(see also the summary on the first page)

WEST AFRICA

Mauritania

• **SITUATION**

During October, low numbers of locusts were present in a remote area west of Tidjikja (1829N1131W), north of Boutilimit (1740N/1446E) and



Solitarious adults and hoppers in Mauritania during October

south of Akjoujt (1945N/1421W). Small-scale breeding was in progress, primarily near Moudjeria (1751N/1228W) where an increasing number of solitarious hoppers was found throughout the month. Initially, isolated hoppers were seen at five locations during the first dekad and, by the end of the month, hoppers of all instars were present at 12 places. Hopper densities increased to 480 hoppers per ha by the last dekad in response to the drying vegetation. Scattered solitarious immature and mature adults at densities of less than 100 per ha were also reported throughout the month in the same area.

• **Forecast**

Breeding will decline in most places with the possible exception of El Khatt where good rains are thought to have fallen recently. As vegetation dries out, adults may concentrate in the areas that remain green. Once these become dry, most of the adults will probably move to western Inchiri and lay on a small scale in areas of recent rainfall while a few adults could move towards the extreme north.

Mali

• **Situation**

No reports received.

• **Forecast**

Scattered adults are likely to be present and breeding on a small scale in the main wadis of the southern Adrar des Iforas and in adjacent areas of the Tilemsi Valley. As vegetation dries out, breeding will decline and locusts may concentrate and perhaps form a few small groups.

Niger

• **Situation**

Isolated maturing adults were seen at 22 places southeast of Aïr between Agadez (1700N/0756E) and Tanout (1505N/0850E) from 25 September to 24 October. Densities were generally less than 10 adults per ha except for one location where there were 100 adults per ha. During the second half of the month, low numbers of adults at densities less than 5 adults per ha were present at a few places in Tamesna near In Abangharit (1754N/0559E). Small-scale breeding was in progress at four places where solitarious hoppers of all instars were present at densities from less than one to up to five hoppers per sq. metre.

• **Forecast**

As vegetation dries out, no further breeding is expected and locust numbers will gradually decline in Tamesna and Aïr. No significant developments are likely.

Chad

• **Situation**

No reports received.

• **Forecast**

A few isolated adults may be present in parts of Biltine and near Fada in BET. If so, locust activity will decline as vegetation dries out during the forecast period.

Senegal

• **Situation**

No locusts were reported in the Senegal River Valley up to 20 October.

• **Forecast**

No significant developments are likely.

Burkina Faso, Cape Verde, Gambia, Guinea Bissau, and Guinea Conakry

• **Forecast**

No significant developments are likely.

NORTH-WEST AFRICA

Algeria

• **Situation**

No locusts were reported during October.

• **Forecast**

No significant developments are likely.

Morocco

• **Situation**

No locusts were seen during surveys conducted in October along the southern side of the Atlas Mountains between Tan-Tan and Errachidia, including Oued Draa, and in the Adrar Souttouf region of the extreme southwest.

• **Forecast**

No significant developments are likely.

Libyan Arab Jamahiriya

• **Situation**

No locusts were reported and no surveys were carried out in October.

• **Forecast**

No significant developments are likely.

Tunisia

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

EASTERN AFRICA

Sudan

• **Situation**

No locusts were seen during surveys in the Baiyuda desert between Khartoum and Dongola (1910N/3027E) on 29-30 September. No locusts were reported in the summer breeding areas during October.

• **Forecast**

Locust numbers will decline in the summer breeding areas of Northern Darfur and Northern Kordofan as vegetation dries out and adults move on a small scale towards the winter breeding areas on the Red Sea coastal plains. Although the majority of the adults are likely to appear in Tokar Delta and to a lesser extent on the coastal plains between Suakin and Karora where rains recently fell, there is a slight possibility that some adults may first stopover in areas of previous flooding along the Atbara River and near Kassala. It is expected that it will take several generations of breeding before locust numbers reach significant levels. Nevertheless, regular surveys are recommended in these areas.

Eritrea

• **Situation**

No locusts were seen during surveys on the Red Sea coastal plains north of Massawa (1537N/3928E) during October. The solitary adults reported in Bulletin No. 276 were confirmed to be Tree Locust.

• **Forecast**

Scattered adults may be present and breeding on a small scale in the western lowlands. During the forecast period, low numbers of solitarious adults are likely to appear and lay on the northern coastal plains of the Red Sea near Karora as well as further south near Massawa.

Somalia

• **Situation**

No reports received.

• **Forecast**

Scattered locusts may be present in a few areas of the northwestern escarpment and breeding in areas of recent rainfall. No significant developments are likely.

Ethiopia

• **Situation**

No locusts were reported up to 17 October.

• **Forecast**

No significant developments are likely.

Djibouti

• **Situation**

No locusts were reported and no surveys were carried out in October.

• **Forecast**

No significant developments are likely.

Kenya, Tanzania and Uganda

• **Forecast**

No significant developments are likely.

NEAR EAST

Saudi Arabia

• **Situation**

No locusts were reported during October.

• **Forecast**

Scattered adults may be present and breeding on the Red Sea coastal plains near Jizan. No significant developments are likely.

Yemen

• **Situation**

No locusts were reported and no surveys were carried out in October.

• **Forecast**

Low numbers of adults are likely to be present and breeding in a few places along the Red Sea coastal plains and perhaps to a lesser extent along the Gulf of Aden coastal plains. Consequently, locust numbers will gradually increase but remain at non-threatening levels. Regular surveys are highly recommended in these areas.

Egypt

• **SITUATION**

In the Western Desert, control operations treated 1,824 ha of grasshoppers and African Migratory Locusts, mixed with a few Desert Locusts, in cropping areas at Sh. Oweinat (2219N/2845E) on 16 October. No locusts were reported elsewhere in the country.

• **FORECAST**

Low numbers of Desert Locust, mixed with other locust and grasshopper species, are likely to decline in agricultural areas at Sh. Oweinat and Tushka. No significant developments are likely.

Kuwait

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Oman

• **SITUATION**

No locusts were reported and no surveys were carried out in October.

• **FORECAST**

No significant developments are likely.

United Arab Emirates

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Qatar, Syria Arab Republic and Turkey

• **FORECAST**

No significant developments are likely.

SOUTH-WEST ASIA

Iran

• **SITUATION**

No locusts were seen during surveys in Bushehr and Sistan Baluchistan on 6-7 October.

• **FORECAST**

No significant developments are likely.

Pakistan

• **SITUATION**

During the first half of October, isolated solitarious maturing adults at densities up to 1-5 per ha were reported at 13 locations in the Tharparkar, Nara and Cholistan deserts along the Indo-Pakistan border. Similar populations were reported during the second half of the month at the same number of locations.

• **FORECAST**

Locust numbers will continue to decline in the summer breeding areas as vegetation dries out. No significant developments are expected.

India

• **SITUATION**

Late reports indicate that isolated maturing adults at densities of 1-3 adults per ha were present during the first half of September at four places in Jaisalmer district, Rajasthan. Second instar hoppers at densities of 1-2 per sq. m. were reported near Jaisalmer on the 6th, suggesting that small scale breeding was in progress in a few areas. During the second half of the month, locusts were seen at five places in Jaisalmer and one place in Bikaner districts where a maximum density of 11 adults per ha were reported.

During the first half of October, adult densities continued to increase gradually near Jaisalmer where isolated adults at densities of 5-20 per ha were seen at three places.

• **FORECAST**

Locust numbers will continue to decline in Rajasthan as vegetation dries out. No significant developments are expected.

Afghanistan

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Announcements

Locust reporting. Affected countries are kindly reminded to make sure that locust situation reports are sent to FAO HQ by the 25th day of the month so the information can be included in the FAO bulletin for the current month; otherwise, it will not appear until the following month. Reports should be sent even if no locusts were found or if no surveys were conducted.

Reporting by email. Affected countries are encouraged to send completed *FAO Desert Locust Survey and Control Forms* with a brief interpretation of the results by email to eclo@fao.org.

Desert Locust Guidelines. The revised edition in English was issued on 24 September and is now available from FAO. Please contact the Locust Group for more information.

eLocust. Details of a new system under evaluation for recording and transmitting locust survey and control data collected in the field can be found on the Internet at:

http://www.fao.org/news/2001/010601-e.htm

Publications on the internet. A list of publications that can be downloaded from the FAO Locust webpages is now available (http://www.fao.org/news/global/locusts/pubslist.htm). New additions are:

- Report of the 36th session of the DLCC recently held in Rome (English and French)
- FAO Desert Locust Guidelines, revised edition, 2001 (English)
- FAO Spray Monitoring Form (English)

Upcoming meetings. The following meetings are scheduled:

- Expert Consultation on the Registration of Biopesticides for Desert Locust Control, 3-7 December 2001 (Rome)
- 4th EMPRES Consultative Committee Meeting, 15-17 January 2002 (Cairo)
- 23rd session of the FAO Commission for Desert Locust Control in the Central Region (CRC), 9-14 March 2002 (Damascus)

Glossary of terms

The following special terms are used in the Desert Locust Bulletin when reporting locusts:

NON-GREGARIOUS ADULTS AND HOPPERS

ISOLATED (FEW)

- very few present and no mutual reaction occurring;
- 0 - 1 adult/400 m foot transect (or less than 25/ha).

SCATTERED (SOME, LOW NUMBERS)

- enough present for mutual reaction to be possible but no ground or basking groups seen;
- 1 - 20 adults/400 m foot transect (or 25 - 500/ha).

GROUP

- forming ground or basking groups;
- 20+ adults/400 m foot transect (or 500+/ha).

ADULT SWARM AND HOPPER BAND SIZES

VERY SMALL

- swarm: less than 1 km^2 • band: 1 - 25 m^2

SMALL

- swarm: 1 - 10 km^2 • band: 25 - 2,500 m^2

MEDIUM

- swarm: 10 - 100 km^2 • band: 2,500 m^2 - 10 ha

LARGE

- swarm: 100 - 500 km^2 • band: 10 - 50 ha

VERY LARGE

- swarm: 500+ km^2 • band: 50+ ha

RAINFALL

LIGHT

- 1 - 20 mm of rainfall.

MODERATE

- 21 - 50 mm of rainfall.

HEAVY

- more than 50 mm of rainfall.

OTHER REPORTING TERMS

BREEDING

- the process of reproduction from copulation to fledging.

SUMMER RAINS AND BREEDING

- July - September/October

WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July

DECLINE

- a period characterised by breeding failure and/or successful control leading to the dissociation of swarming populations and the onset of recessions; can be regional or major.

OUTBREAK

- a marked increase in locust numbers due to concentration, multiplication and gregarisation

which, unless checked, can lead to the formation of hopper bands and swarms.

UPSURGE

- a period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to- gregarious breeding in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions.

PLAGUE

- a period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously.

RECESSION

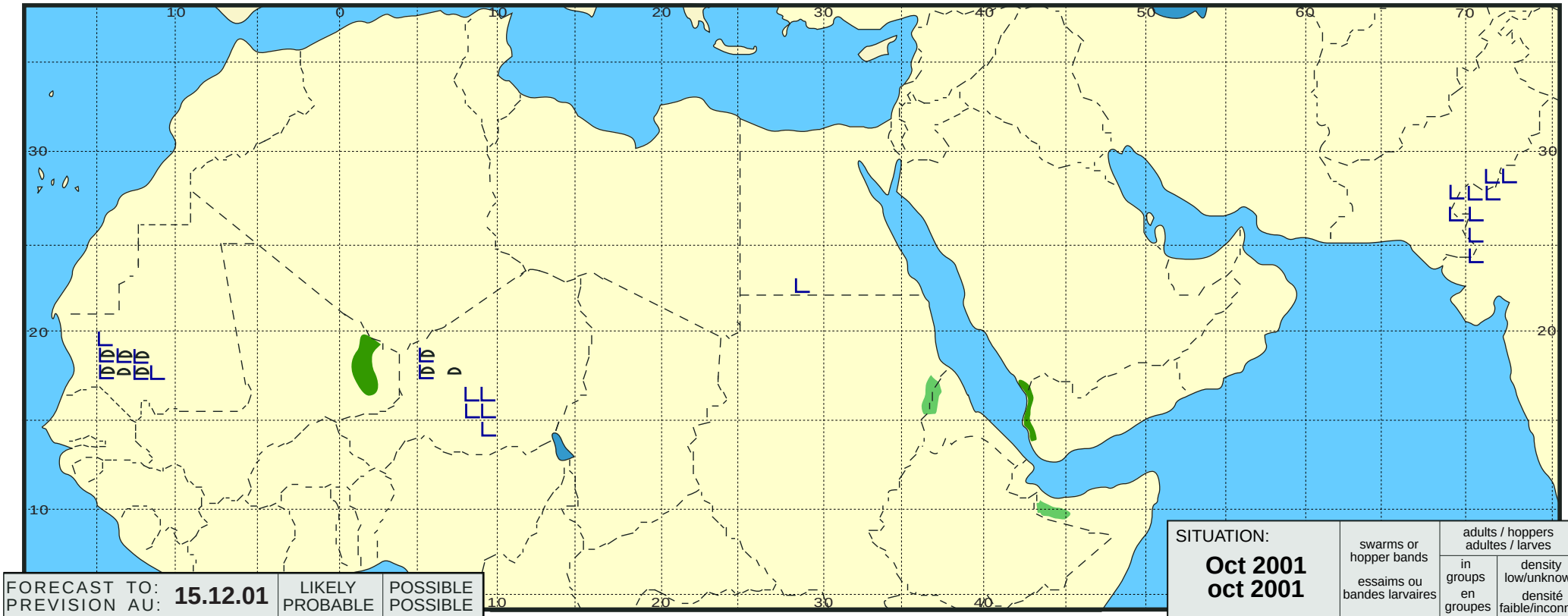
- period without widespread and heavy infestations by swarms.

REMISSION

- period of deep recession marked by the complete absence of gregarious populations.

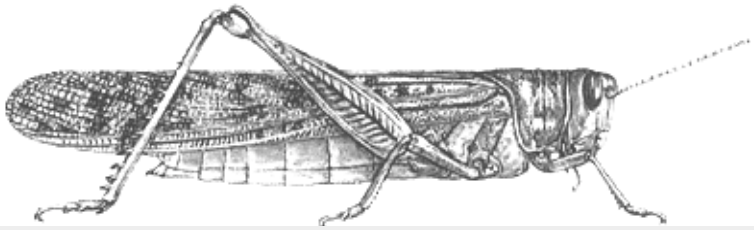
Desert Locust Summary
Criquet pèlerin - Situation résumée

277



FORECAST TO: PREVISION AU: **15.12.01**	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favourables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: **Oct 2001 oct 2001**	swarms or hopper bands essaims ou bandes larvaires	adults / hoppers adultes / larves in groups en groupes	 density low/unknown densité faible/inconnue
immature adults adultes immatures	■	□	⊔
mature or partly mature adults adultes matures ou partiellement matures	◣	◺	L
adults, maturity unknown adultes, maturité inconnue	▲	△	⋀
egg laying or eggs pontes ou œufs	▼	▽	⋁
hoppers larves	●	○	◞
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)	◘	◙	⍥



DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations

No. 278
(7 Dec 2001)

General Situation during November 2001
Forecast until mid-January 2002

The Desert Locust situation continued to remain calm during November. Ecological conditions are improving in the winter breeding areas of Mauritania and Sudan where low numbers of locusts are present. A late report stated control was carried out against gregarizing locusts in northern Mali during October. There is a possibility that a few small groups or swarmlets could form in the treated areas and perhaps move to southern Algeria and northern Mauritania during the forecast period.

Western Region. Although small-scale breeding continued in western **Mauritania** during November, locust numbers remained low and insignificant. Breeding conditions are likely to improve in the north where unusually widespread rainfall occurred. In northern **Mali**, a late report indicated that nearly 19,000 ha of gregarizing hoppers and adults were treated during October. In November, there were unconfirmed reports of important residual populations that could form small groups or swarmlets. Some of these may move to northern Mauritania and southern Algeria while others remain in northern Mali. The extent of the infestations in northern Mali is not entirely clear but satellite imagery suggests that favourable habitats are limited to just a few areas. Scattered hoppers and adults were present in northern **Niger** where drying vegetation is expected to concentrate locusts into a few small groups.

Central Region. Very little rain fell during November in the winter breeding areas along either side of the Red Sea where conditions remain quite dry except for **Sudan** where good rains fell along the southern coastal plains and isolated adults appeared in a few places. A single locust was reported from **Eritrea**. Although no locusts were reported elsewhere in the Region, isolated adults may be present or could appear during the forecast period along the coasts of Eritrea, Saudi Arabia, Yemen and northern Somalia.

Eastern Region. Mainly dry conditions prevailed in the region and no locusts were reported during November. No significant developments are expected.

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DLIS: www.fao.org/news/global/locusts/locuhome.htm

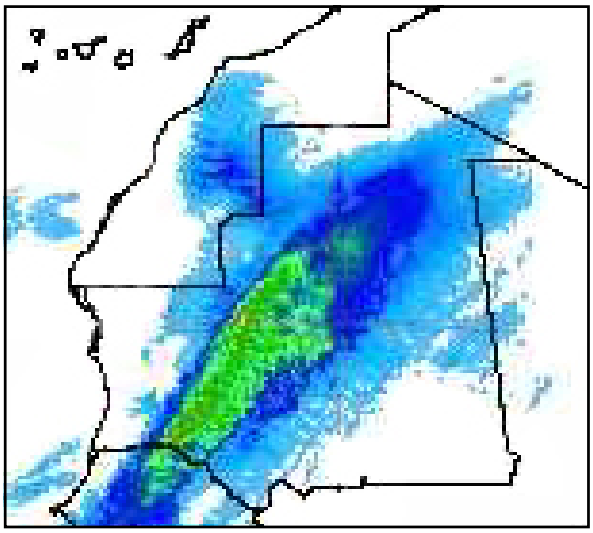
No. 278

DESERT LOCUST BULLETIN

Weather & Ecological Conditions in November 2001

Conditions are improving in parts of the winter breeding areas of northern Mauritania and along the Red Sea coastal plains of Sudan because of good rainfall during November. Elsewhere, dry conditions prevailed.

In **West Africa**, no significant rain fell during November in the Sahel except for unusually widespread rain in northern Mauritania on the 26-28th. Light to moderate rainfall probably occurred over a large area extending from southwestern Mauritania to the northeast near Oued El Ma, roughly 300 km wide by 700 km in length. Moudjeria reported 4 mm, Ouadane and Chinguitti 7 mm each, Akjoujt and Benichab 12 mm each, Tmeimichatt 22 mm and Atar 30 mm. Additional rain may have fallen in remote areas east of Zouerate towards the southern edge of El Hank in the northwest of the country. In some places in Inchiri and Adrar, breeding conditions are already favourable while in others, including Tiris Zemmour, conditions are expected to improve because of these rains. In northern Mali, breeding conditions remain favourable in parts of Timetrine, the Tilemsi Valley and the Adrar des Iforas. In Niger, conditions are drying out in Tamesna where only small patches of green vegetation remain in a few places.



Extent of rainfall over Mauritania on 27 November 2001.

In **North-West Africa**, generally dry and unfavourable conditions persisted throughout the Region during November. Light showers fell on and near the Atlantic coast in Morocco between Agadir and Dakhla. Moderate rainfall was reported at Taidalt (20 mm) and Boujdour (40 mm) on the 19-20th. Breeding conditions are unfavourable except in one location in the extreme southwest at Aarech Amer (2137N/ 1534W). Dry conditions were reported throughout most of the Sahara in Algeria except for some small green patches southwest of the Hoggar Mountains and in the extreme south near the Malian border.

In **Eastern Africa**, light to heavy rains fell at times during November along the Red Sea coastal plains of Sudan between Port Sudan and Tokar. Consequently, conditions are favourable for breeding or are improving in most areas. No rain was reported along the Eritrean coastal plains where breeding conditions remain generally unfavourable. The rains in northern Somalia are late and inconsistent. Light showers were reported on the escarpment and green vegetation was present on the coast near Berbera and in adjacent interior areas between Sheikh and El Anod.

In the **Near East**, dry conditions prevailed throughout most of the Region and very little rainfall was reported during November. Although light showers fell at a few places along the foothills of the southern Red Sea coast of Saudi Arabia east of Qunfidah and in the northern interior, conditions are not favourable for breeding on the coastal plains. In Yemen, no rainfall was reported along the coastal plains of the Red Sea and Gulf of Aden. Vegetation is green in some of the main wadis on the Red Sea coast between Hodeidah and Suq Abs. In Oman, light showers fell in the north along the Batinah coast and in the interior at Fahud.

In **South-West Asia**, no rainfall was reported and dry conditions prevailed in the summer breeding areas along the Indo-Pakistan border except for patches of green vegetation northwest of Jaisalmer, India and northeast of Chhor, Pakistan. In western Pakistan, moderate showers fell on 20 November at Panjgur where 37 mm was reported.

Area Treated

Mali	18,780 ha (October)

Desert Locust Situation and Forecast

(see also the summary on the first page)

WEST AFRICA

Mauritania

• **SITUATION**

During the first two dekads of November, small-scale breeding continued near Moudjeria (1751N/1228W) and a new area of breeding was detected south of Akjoujt (1945N/1421W) where individual solitarious hoppers of all instars were present. Isolated immature and mature solitarious adults were also seen in these places as well as west of Tidjikja (1829N1131W). During the last dekad of the month, only low numbers of adults were reported near Moudjeria and Akjoujt.

• **FORECAST**

Low numbers of solitarious adults are likely to persist in currently infested areas where another generation of breeding could occur because of recent rainfall. Breeding could extend into other areas of Inchiri, Adrar and Tiris Zemmour between Akjoujt and Oued El Ma where good rains are thought to have fallen at the end of last month. There is a slight possibility that several small adult groups could move into Tiris Zemmour from northern Mali.

Mali

• **SITUATION**

A late report indicated that immature and mature solitarious adults and hoppers of all instars were present during October in the Adrar des Iforas north of Kidal (1827N/0125E), in the Tilemsi Valley west of Aguelhoc (1927N/0052E) and in the Timetrine region. Locust densities were highest in Timetrine where up to 10,000 adults per ha and up to four hoppers per sq. m. were reported. Some *transiens* adults and hoppers were seen in the Tilemsi Valley and Timetrine. Control teams are reported to have treated 18,780 ha of gregarizing hoppers and adults.

During November, there were unconfirmed reports from nomads of important adult and hopper populations, including hopper bands, present in the north in the Timetrine region near Tin Kar (1926N/0022W) and in the Tilemsi Valley west of Aguelhoc. Further details are awaited.

• **FORECAST**

Small-scale breeding may continue in limited areas of Timetrine, the Tilemsi Valley and the Adrar des Iforas where conditions remain favourable. Adults and hoppers are likely to concentrate in these places and form several small groups and perhaps a few small swarmlets as vegetation dries out elsewhere. Although most of these locusts are likely to remain in areas that stay green, some adults may move towards the north and northwest if periods of warm southerly and southeasterly winds occur.

Niger

• **SITUATION**

During November, solitarious hoppers, fledglings and immature adults were reported from 15 locations in Tamesna between Agadez (1700N/0756E) and In Abangharit (1754N/0559E) as a result of breeding that occurred in October. In most places, scattered hoppers of all instars and adults, at densities of less than one per ha, were present. There were a few locations where up to 500 adults per ha were seen. On 19 November, *transiens* hoppers were concentrating at one location (1805N/0519E) with densities of 1-3 hoppers per sq. m. in response to the drying vegetation.

• **FORECAST**

As vegetation dries out in Tamesna, low numbers of hoppers and adults will concentrate in those areas that remain green and perhaps form a few small groups. These will probably remain in the green areas although some could move slowly northwards if periods of warm southerly winds occur. Further breeding is unlikely unless additional rains fall.

Chad

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Senegal

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Burkina Faso, Cape Verde, Gambia, Guinea Bissau, and Guinea Conakry

• **FORECAST**

No significant developments are likely.

NORTH-WEST AFRICA

Algeria

• **SITUATION**

No locusts were reported during November.

• **Forecast**

There is a good possibility that low to moderate numbers of locusts are present along the Malian border near Bordj Mokhtar and Timiaouine where breeding is thought to have occurred last month. Consequently, small adult groups and perhaps a few small swarmlets could form in these areas. These may be supplemented by additional adult groups or swarmlets arriving from northern Mali.

Morocco

• **Situation**

No locusts were seen during surveys conducted in November along the southern side of the Atlas Mountains between Guelmine (2859N/1003W) and Erfoud (3128N/0410W) as well as in the Adrar Souttouf region of the extreme southwest near Tichla (2135N/1458W).

• **Forecast**

No significant developments are likely.

Libyan Arab Jamahiriya

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Tunisia

• **Situation**

No locusts were reported during November.

• **Forecast**

No significant developments are likely.

EASTERN AFRICA

Sudan

• **Situation**

Isolated mature adults were reported on the Red Sea coast at two locations in the Tokar Delta on 3 November and in Khor Gowb (1858N/3723E) on the 17th. No locusts were seen elsewhere on the coastal plains between Tokar and Port Sudan up to the 25th. In the River Nile State, there was an unconfirmed report of first instar hoppers near Abu Sunoon (1716N/3405).

• **Forecast**

Locust numbers will gradually increase on the Red Sea coastal plains between Port Sudan and Karora where small-scale breeding is expected to occur. Hoppers are likely to appear by the end of December but initial numbers will be low and probably difficult to detect. There remains a slight possibility of late breeding in areas of previous rainfall in the River Nile State.

Eritrea

• **Situation**

A single solitarious adult was seen in Asmara (1520N/3858E) on 15 November.

• **Forecast**

Scattered adults may be present on the coastal plains of the Red Sea between Karora and Massawa where small-scale breeding is likely if rainfall occurs.

Somalia

• **Situation**

No locusts were seen during surveys carried out on the northwestern escarpment and coast between Djibouti and Berbera on 25-29 November.

• **Forecast**

Isolated adults may be present in a few areas along the coastal plains between Djibouti and Las Koreh. Small-scale breeding is likely if rainfall occurs. No significant developments are likely.

Ethiopia

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Djibouti

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Kenya, Tanzania and Uganda

• **Forecast**

No significant developments are likely.

NEAR EAST

Saudi Arabia

• **Situation**

No locusts were reported during November.

• **Forecast**

Scattered adults may be present and breeding on the Red Sea coastal plains near Jizan. No significant developments are likely.

Yemen

• **Situation**

No reports received.

• **Forecast**

Low numbers of adults are likely to be present and breeding in a few places along the Red Sea coastal plains and perhaps to a lesser extent along the Gulf of Aden coastal plains. Consequently, locust numbers will gradually increase but remain at non-threatening levels. Regular surveys are highly recommended in these areas.

Egypt

• **Situation**

No locusts were reported from the Red Sea coastal plains or in the Western Desert during November.

• **Forecast**

Low numbers of Desert Locust, mixed with other locust and grasshopper species, are likely to decline in agricultural areas at Sh. Oweinat and Tushka. A few adults may appear on the southeastern coastal plains of the Red Sea if rainfall occurs. No significant developments are likely.

Kuwait

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Oman

• **Situation**

No locusts were reported in the north along the coast or in the adjacent interior of Al-Dhahira region during November.

• **Forecast**

No significant developments are likely.

United Arab Emirates

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Qatar, Syria Arab Republic and Turkey

• **Forecast**

No significant developments are likely.

SOUTH-WEST ASIA

Iran

• **Situation**

No locusts were seen during surveys in Bushehr and Sistan Baluchistan on 6-7 October.

• **Forecast**

No significant developments are likely.

Pakistan

• **Situation**

No locusts were reported during the first half of November.

• **Forecast**

No significant developments are likely.

India

• **Situation**

During the second half of October, isolated adults were present at Gunjangarh (2631N/7020E) in Jaisalmer District on the 16th.

No locusts were reported during November.

• **Forecast**

No significant developments are likely.

Afghanistan

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Announcements

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- FAO Desert Locust Guidelines, revised edition, 2001 (English)
- FAO Spray Monitoring Form (English)

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- Contingency Planning Workshop (EMPRES), 13-21 February 2002 (Egypt)
- 23rd session of the FAO Commission for Desert Locust Control in the Central Region (CRC), 9-14 March 2002 (Damascus). Djibouti, Eritrea and Ethiopia will participate as observers.

Glossary of terms

The following special terms are used in the Desert Locust Bulletin when reporting locusts:

NON-GREGARIOUS ADULTS AND HOPPERS

ISOLATED (FEW)

- very few present and no mutual reaction occurring;
- 0 - 1 adult/400 m foot transect (or less than 25/ha).

SCATTERED (SOME, LOW NUMBERS)

- enough present for mutual reaction to be possible but no ground or basking groups seen;
- 1 - 20 adults/400 m foot transect (or 25 - 500/ha).

GROUP

- forming ground or basking groups;
- 20+ adults/400 m foot transect (or 500+/ha).

ADULT SWARM AND HOPPER BAND SIZES

VERY SMALL

- swarm: less than 1 km^2 • band: 1 - 25 m^2

SMALL

- swarm: 1 - 10 km^2 • band: 25 - 2,500 m^2

MEDIUM

- swarm: 10 - 100 km^2 • band: 2,500 m^2 - 10 ha

LARGE

- swarm: 100 - 500 km^2 • band: 10 - 50 ha

VERY LARGE

- swarm: 500+ km^2 • band: 50+ ha

RAINFALL

LIGHT

- 1 - 20 mm of rainfall.

MODERATE

- 21 - 50 mm of rainfall.

HEAVY

- more than 50 mm of rainfall.

OTHER REPORTING TERMS

BREEDING

- the process of reproduction from copulation to fledging.

SUMMER RAINS AND BREEDING

- July - September/October

WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July

DECLINE

- a period characterised by breeding failure and/or successful control leading to the dissociation of swarming populations and the onset of recessions; can be regional or major.

OUTBREAK

- a marked increase in locust numbers due to concentration, multiplication and gregarisation which, unless checked, can lead to the formation of hopper bands and swarms.

UPSURGE

- a period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to- gregarious breeding in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions.

PLAGUE

- a period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously.

RECESSION

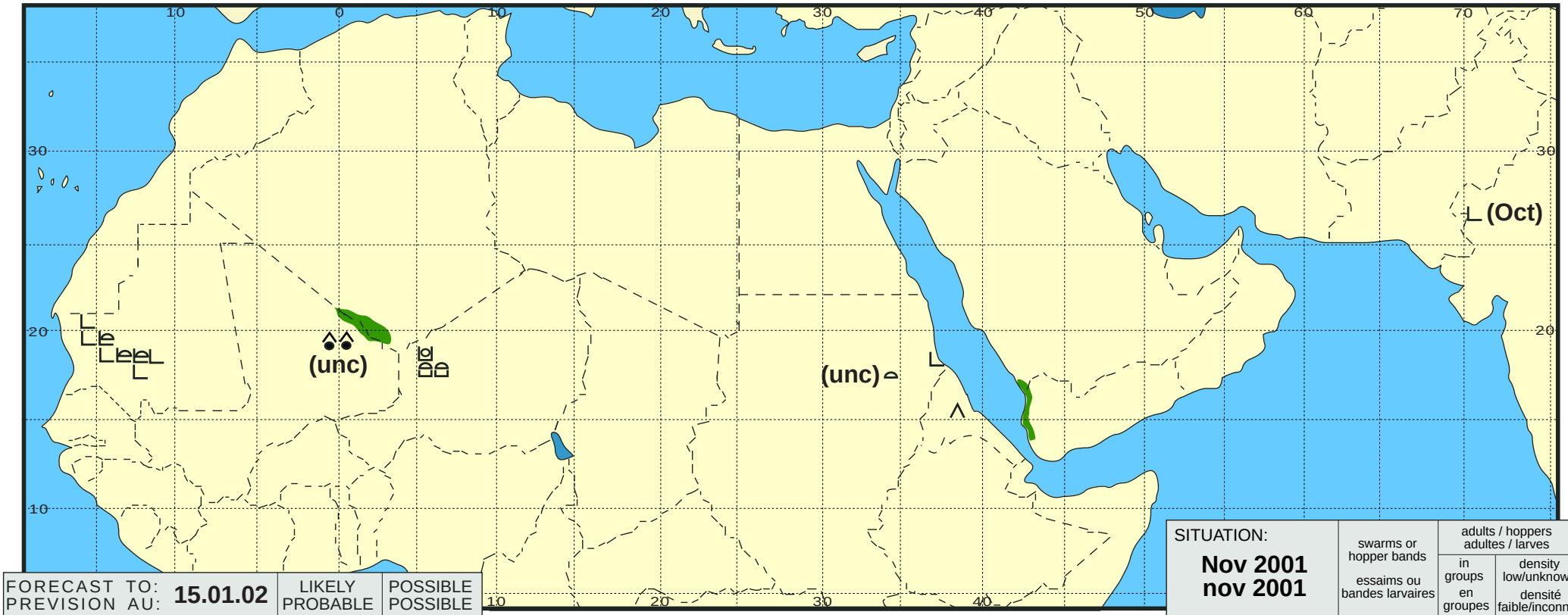
- period without widespread and heavy infestations by swarms.

REMISSION

- period of deep recession marked by the complete absence of gregarious populations.

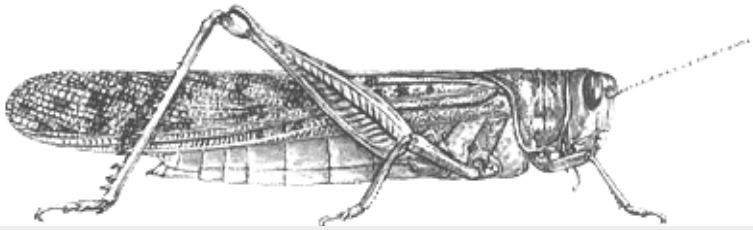
Desert Locust Summary
Criquet pèlerin - Situation résumée

278



FORECAST TO: PREVISION AU: **15.01.02**	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favourables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: **Nov 2001** **nov 2001**	swarms or hopper bands essaims ou bandes larvaires	adults / hoppers adultes / larves	
		in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures	■	□	⊔
mature or partly mature adults adultes matures ou partiellement matures	◣	◺	L
adults, maturity unknown adultes, maturité inconnue	▲	△	⋀
egg laying or eggs pontes ou œufs	▼	▽	⋁
hoppers larves	●	○	⌓
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)	◘	◙	⌾



DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations

No. 279
(9 Jan 2002)

General Situation during December 2001
Forecast until mid-February 2002

The Desert Locust situation was calm during December. Low numbers of adults were present in northwestern Mauritania, northern Mali and on the Red Sea coast of Sudan. Conditions are favourable in only a few places in the winter breeding areas along the Red Sea coast and in North-West Africa. Small-scale breeding could occur in some of these places during the forecast period but no significant developments are likely.

Western Region. Small-scale breeding ended in northwestern **Mauritania** in early December where only isolated mature adults remained by the end of the month. The unusually good rains that fell in late November should allow these adults to persist in Inchiri and perhaps in the extreme north but low temperatures will limit breeding and movement. Similarly, it appears that breeding has also finished in northern **Mali** where there were reports of hoppers in early December but, by the end of the month, only scattered adults were present. These are likely to persist in those few areas that remain green. Good rains fell along the southern side of the Atlas Mountains in **Morocco** and **Algeria** but cool temperatures will limit locust activity.

Central Region. Dry conditions prevailed in most of the winter breeding areas along the Red Sea coast due to poor rainfall for a second consecutive month. No locusts were reported in the region except for scattered adults in Tokar Delta, **Sudan** and a single adult on the **Eritrean** coast. Favourable breeding conditions are limited to a few areas, primarily the Tokar Delta and the surrounding coastal plains in Sudan and, to a lesser extent, parts of the coast of **Yemen** and **Saudi Arabia**. Low numbers of adults could appear during the forecast period in these areas as well as along the coasts of Eritrea and northern Somalia.

Eastern Region. Although light rains fell during December in parts of Baluchistan, western **Pakistan**, dry conditions prevailed in the region. Isolated adults were reported at one place in Rajasthan, **India**. No significant developments are expected.

The FAO Desert Bulletin is issued monthly, supplemented by Updates during periods of increased Desert Locust activity, and is distributed by fax, e-mail, FAO pouch and airmail by the Locusts and Other Migratory Pests Group, AGP Division, FAO, 00100 Rome, Italy. It is also available on the Internet.
Telephone: +39 06 570 52420 (7 days/week, 24 hr)
Facsimile: +39 06 570 55271
E-mail: eclo@fao.org
Internet: www.fao.org
DLIS: www.fao.org/news/global/locusts/locuhome.htm

Weather & Ecological Conditions in December 2001

Limited rainfall occurred during December, primarily in a few areas of North-West Africa and along the Red Sea coastal plains. Small patches of green vegetation were present in parts of northwestern Mauritania, northern Mali, and on the Red Sea coasts.

In **West Africa**, no significant rainfall was reported in the region during December. In Mauritania, light rains fell in the northwest on the 4th at Akjoujt (1 mm) and Zouerate (3 mm) where vegetation remained green in some areas because of earlier rainfall in late November. In northern Mali, small patches of green vegetation persisted in a few wadis in the central Adrar des Iforas and in Timetrine. In Niger, dry vegetation was reported in the Air. Daily temperatures decreased during the month in all desert areas throughout the region. The cool temperatures will slow down the drying out of vegetation that is at present green.

In **North-West Africa**, rainfall associated with several eastward moving Mediterranean depressions occurred over the northern Sahara in Morocco, Algeria and Tunisia at times during December. In Morocco, light to moderate rains fell in a few places south of the Atlas Mountains in Oued Draa and along the Atlantic coast on 9-24 December. For example, Sidi Ifni reported 39 mm, Ouarzazate 13 mm, and Tan-Tan 6 mm. Some of these rains extended to the northern parts of the Sahara in Algeria from Tindouf (8 mm) to Ghardaia (28 mm) and Ouargla (3 mm). Light rain fell at times in southern Tunisia. Maximum temperatures in the Algerian Sahara varied from 12-27°C while minimum temperatures were 2-11°C. Vegetation is dry in most areas except in Oued Draa where it is becoming green.

In **Eastern Africa**, unusually dry conditions prevailed throughout the Region. No significant rainfall was reported along the Red Sea coastal plains except for 15 mm at Port Sudan on 31 December. Consequently, conditions are not favourable for breeding in most areas except for the Tokar Delta in Sudan and to a lesser extent in a few wadis further north near Suakin. In northern Somalia, moderate rainfall was reported along the foothills near Berbera on 9 December and clouds were present over the coast but vegetation was dry in most areas.

In the **Near East**, isolated showers fell in parts of the region during December. In south-eastern Egypt, moderate to heavy rains fell at mid month on the Red Sea coastal plains and in subcoastal areas. In Saudi Arabia, moderate rains were reported on the central Red Sea coast at Jeddah (27 mm) and Mecca (47 mm) and light rains fell along the northern coast to Yenbo. Light rains also fell in a few places in the northern interior where low temperatures prevailed. In Yemen, green vegetation persisted in some of the main wadis on the Red Sea coast between Hodeidah and Suq Abs. In Oman, dry conditions prevailed in the north along the Batinah coast and in the interior.

In **South-West Asia**, light rain fell at times in northern Baluchistan, Pakistan during December. Nevertheless, dry conditions prevailed throughout the region.

Area Treated

No control operations were reported during December.

Desert Locust Situation and Forecast

(see also the summary on the first page)

WEST AFRICA

Mauritania

• **SITUATION**

During the first week of December, breeding continued at three places west of Tidjikja (1829N1131W), and between Boutilimit (1740N/1446E) and Akjoujt (1945N/1421W) where there were individual hoppers of different instars. Low numbers of maturing adults were present throughout December in these areas as well as in Inchiri near Bennichab (1932N/1512W). By the end of the month, isolated mature adults were seen at only two locations during surveys near Boutilimit and in Inchiri, and no further breeding was detected.

• **FORECAST**

A few isolated adults will persist in Inchiri and parts of southern Adrar while low numbers of adults may be present in El Hank and nearby areas that received

rainfall in late November. Low temperatures will limit maturation and breeding during the forecast period.

Mali

• **SITUATION**

On 1 December, third to fifth instar hoppers mixed with immature adults were seen within an area of 200 ha in Timetrine at Assamamal (1905N/0023W). Travellers and nomads reported similar populations during the first dekad of the month. On the 17th, a guide saw adults in northern Timetrine near Tadhak (2032N/0005W).

• **FORECAST**

Low numbers of locusts are expected to persist in parts of Timetrine and the Adrar des Iforas. Some of these may become concentrated in those areas that remain green. Low temperatures will limit further breeding.

Niger

• **SITUATION**

A late report indicated that fledglings and immature adults, at densities of up to 20 locusts per ha, were present at four locations in Tamesna on 29-30 November.

No locusts were seen during surveys in the Air on13-22 December.

• **FORECAST**

A few isolated adults may persist in parts of Tamesna during the forecast period.

Chad

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Senegal

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Burkina Faso, Cape Verde, Gambia, Guinea Bissau, and Guinea Conakry

• **FORECAST**

No significant developments are likely.

NORTH-WEST AFRICA

Algeria

• **SITUATION**

No locusts were reported during December.

• **FORECAST**

Low numbers of adults may be present along the Malian border near Bordj Mokhtar and Timiaouine where they are likely to persist during the forecast period.

Morocco

• **SITUATION**

No locusts were reported from the south or southwest during December.

• **FORECAST**

No significant developments are likely.

Libyan Arab Jamahiriya

• **SITUATION**

No locusts were reported and no surveys were carried out during December.

• **FORECAST**

No significant developments are likely.

Tunisia

• **SITUATION**

No locusts were reported during December.

• **FORECAST**

No significant developments are likely.

EASTERN AFRICA

Sudan

• **SITUATION**

Scattered mature adults at densities of 80-800 per ha were present in some cropping areas in Tokar Delta on the Red Sea coastal plains on 24-25 December. Copulating adults were reported at one of these places. No locusts were seen further north along the coast to Suakin during the month.

• **FORECAST**

Locust numbers will gradually increase in Tokar Delta and to a lesser extent on the Red Sea coastal plains between Port Sudan and Karora where small-scale breeding is expected to occur in both areas. A few hoppers are likely to appear during the forecast period but initial numbers will be low and probably difficult to detect.

Eritrea

• **SITUATION**

A late report indicated that no locusts were seen along the Red Sea coastal plains between Massawa (1537N/3928E) and Assab (1301N/4247E) during a survey carried out on 22-25 November.

In December, a single solitarious adult was seen on the 12th mixed with grasshoppers in crops on the Red Sea coast near Mersa Cuba (1616N/3911E).

• **Forecast**

Isolated adults may be present on the coastal plains of the Red Sea between Karora and Massawa where small-scale breeding is likely if rainfall occurs.

Somalia

• **Situation**

No locusts were seen during surveys carried out on the northern escarpment between Hargeisa and Burao (0931N/4533E) on 9-11 December.

• **Forecast**

Isolated adults may be present in a few areas along the coastal plains between Djibouti and Las Koreh. Small-scale breeding is likely if rainfall occurs. No significant developments are likely.

Ethiopia

• **Situation**

No locusts were seen during surveys northeast of Dire Dawa along the railway and near the Somali border on 19-22 December.

• **Forecast**

No significant developments are likely.

Djibouti

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Kenya, Tanzania and Uganda

• **Forecast**

No significant developments are likely.

NEAR EAST

Saudi Arabia

• **Situation**

No reports received.

• **Forecast**

Scattered adults may be present and breeding on the Red Sea coastal plains near Jizan. No significant developments are likely.

Yemen

• **Situation**

A late report indicated that no locusts were seen during surveys carried out on 12-17 November along the Red Sea coastal plains between Bayt Al Faqih (1430N/4317E) and the Saudi Arabian border.

No locusts were reported during December.

• **Forecast**

Low numbers of adults are likely to be present and breeding in a few places along the Red Sea coastal plains. Regular surveys are highly recommended in these areas.

Egypt

• **Situation**

No locusts were reported from the Red Sea coastal plains or in the Western Desert during December.

• **Forecast**

A few isolated adults may appear on the southern Red Sea coastal plains. No significant developments are likely.

Kuwait

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Oman

• **Situation**

No locusts were reported in Musandam and Batinah regions in northern Oman during December.

• **Forecast**

No significant developments are likely.

United Arab Emirates

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Qatar, Syria Arab Republic and Turkey

• **Forecast**

No significant developments are likely.

SOUTH-WEST ASIA

Iran

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Pakistan

• **SITUATION**

No locusts were reported during the second half of November and in December.

• **FORECAST**

No significant developments are likely.

India

• **SITUATION**

No locusts were reported during the first half of December. Isolated adults were reported at Bijawal (2554N/7024E) in Barmer district, Rajasthan on 18 December.

• **FORECAST**

No significant developments are likely.

Afghanistan

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

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- very few present and no mutual reaction occurring;
- 0 - 1 adult/400 m foot transect (or less than 25/ha).

SCATTERED (SOME, LOW NUMBERS)

- enough present for mutual reaction to be possible but no ground or basking groups seen;
- 1 - 20 adults/400 m foot transect (or 25 - 500/ha).

GROUP

- forming ground or basking groups;
- 20+ adults/400 m foot transect (or 500+/ha).

ADULT SWARM AND HOPPER BAND SIZES

VERY SMALL

- swarm: less than 1 km^2 • band: 1 - 25 m^2

SMALL

- swarm: 1 - 10 km^2 • band: 25 - 2,500 m^2

MEDIUM

- swarm: 10 - 100 km^2 • band: 2,500 m^2 - 10 ha

LARGE

- swarm: 100 - 500 km^2
- band: 10 - 50 ha

VERY LARGE

- swarm: 500+ km^2
- band: 50+ ha

RAINFALL

LIGHT

- 1 - 20 mm of rainfall.

MODERATE

- 21 - 50 mm of rainfall.

HEAVY

- more than 50 mm of rainfall.

OTHER REPORTING TERMS

BREEDING

- the process of reproduction from copulation to fledging.

SUMMER RAINS AND BREEDING

- July - September/October

WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July

DECLINE

- a period characterised by breeding failure and/or successful control leading to the dissociation of swarming populations and the onset of recessions; can be regional or major.

OUTBREAK

- a marked increase in locust numbers due to concentration, multiplication and gregarisation which, unless checked, can lead to the formation of hopper bands and swarms.

UPSURGE

- a period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to- gregarious breeding in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions.

PLAGUE

- a period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously.

RECESSION

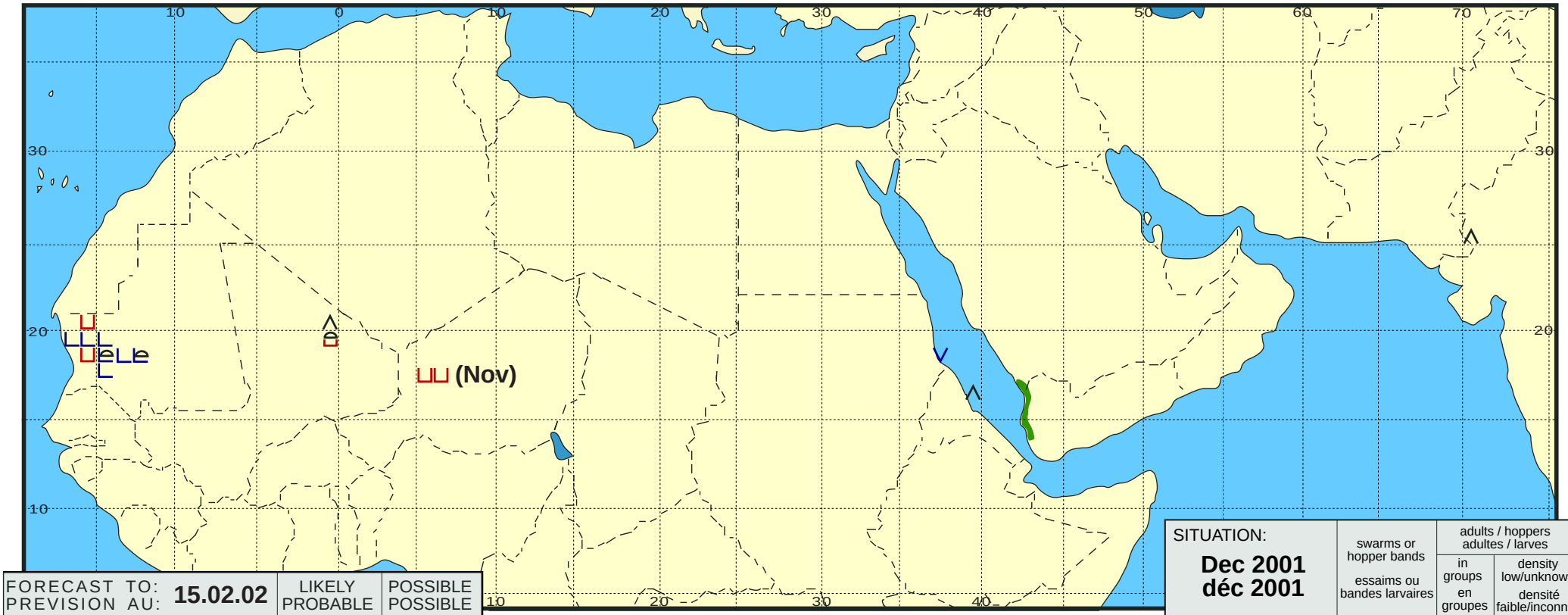
- period without widespread and heavy infestations by swarms.

REMISSION

- period of deep recession marked by the complete absence of gregarious populations.

Desert Locust Summary
Criquet pèlerin - Situation résumée

279



FORECAST TO: PREVISION AU: **15.02.02**	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favourables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: **Dec 2001 déc 2001**	swarms or hopper bands essaims ou bandes larvaires	adults / hoppers adultes / larves in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures	■	□	⊔
mature or partly mature adults adultes matures ou partiellement matures	◣	◺	└
adults, maturity unknown adultes, maturité inconnue	▲	△	∧
egg laying or eggs pontes ou œufs	▼	▽	∨
hoppers larves	●	○	◡
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)	◘	◙	◒