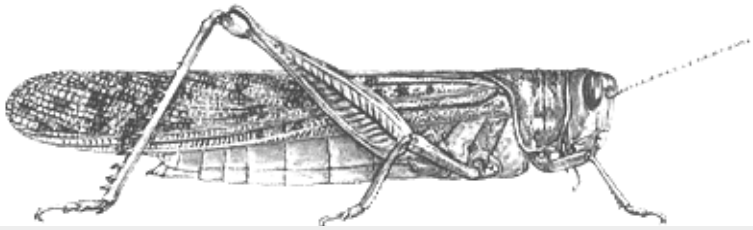

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations

No. 281
(4 March 2002)

General Situation during February 2002
Forecast until mid-April 2002

The Desert Locust situation remained calm during February. Only low and insignificant numbers of solitarious adults were present in parts of northwestern Mauritania and Niger, on the Red Sea coast of Sudan and Eritrea, and in western Pakistan. Although very little rain fell, breeding conditions continue to be favourable in southwestern Mauritania and perhaps in a few places on the Red Sea coast near the Yemen/ Saudi Arabia border. Conditions are improving in western Pakistan. No significant developments are likely during the forecast period.

Western Region. Isolated mature adults persisted in a few places in northwestern **Mauritania** and northern **Mali**, and localized breeding occurred in **Niger**. No significant rainfall was reported during February but conditions are likely to be favourable for locust survival and breeding in southwestern Mauritania due to the unusually heavy rains in January. It is suggested that surveys are undertaken in these areas to clarify the situation.

Central Region. Dry conditions prevailed along the western side of the Red Sea where only a few scattered adults were seen in cropping areas in the Tokar Delta, **Sudan** during February. Small-scale breeding occurred on the northern coast of **Eritrea** where scattered late instar hoppers were reported. As a result of several successive months of rainfall, conditions were more favourable along the southern coast of **Saudi Arabia** and the central coast of **Yemen** where low numbers of locusts could be present. Surveys are suggested in these areas to clarify the situation. No locusts were reported elsewhere in the region.

Eastern Region. Isolated adults were present near the coast in western **Pakistan** where light rains fell in February and small-scale breeding could occur during the forecast period. This area should be checked during the joint survey between I.R. Iran and Pakistan in April. No locusts were reported in the region and 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 February 2002

Although very little rain fell in the recession area during February, breeding conditions remained favourable in southwestern Mauritania and along parts of the eastern Red Sea coast. Conditions are improving near the coast in western Pakistan.

In **West Africa**, no significant rainfall was reported or is thought to have occurred during February. In Mauritania, widespread clouds were present over the north and northwest on the 11th and light rain fell on the northern coast at Nouadhibou. Conditions were favourable for breeding in parts of southern and southeastern Tiris Zemmour. As a result of the unusually heavy rainfall in January, green vegetation was present in Trarza as far north as 1745N, in a large area of Agane (1800N/1330E), in low-lying areas of Brakna near Magta Lahjar and near Moudjeria in western Tagant. Vegetation was becoming green in some places of northwestern Inchiri and southwestern Adrar. Green vegetation persisted in a few wadis in the Adrar des Iforas, Mali and in Tamesna and western Air, Niger.

In **North-West Africa**, dry conditions prevailed in most of the Desert Locust areas. Light rains fell along the western coast of Morocco near Tan-Tan and Sidi Ifni at mid month. Light to moderate rains associated with a Mediterranean depression fell over a large portion of southern Tunisia and northwestern Libya on 6-9 February although no locusts are likely to be present to take advantage of these rains.

In **Eastern Africa**, no significant rainfall was reported and mostly dry conditions prevailed during February. In Sudan, vegetation was reported to be dry in most places along the Red Sea coastal plains from Port Sudan to the Tokar Delta because of a lack of rainfall. Green vegetation was present in the Tokar Delta where crop harvesting was in progress. Some rain may have fallen on the southern Red Sea coastal plains of Eritrea near Assaba and on the northern plains of Djibouti. Although light rain fell in eastern Ethiopia near Jijiga during the first week of February, vegetation was reported to be generally dry. In Somalia, dry conditions were reported except in the coastal areas of Bulhar and Geerisa where light showers fell and green vegetation was present.

In the **Near East**, rains fell sporadically in a few countries. In Egypt, clouds were present during most of the first three weeks of the month over the Western Desert due to several eastward moving Mediterranean depressions; Bahariya Oasis received 4 mm on 10-11 February. In Saudi Arabia, light to moderate rains, associated with a northerly surge of the Red Sea Convergence Zone, fell on the central Red Sea coast between Jeddah (10 mm) and Medinah (29 mm) on the 2nd. Light rains fell on the edge of the Empty Quarter where Sharurah reported 14 mm on the 18th. Light rain fell over the Musandam Peninsula, Oman and Ras Al Khaimah, UAE on the 19-20th. Despite this rainfall, dry conditions prevailed throughout most of the region except on the Red Sea coastal plains from Jizan, Saudi Arabia to Hodeidah, Yemen where green vegetation is likely to be present due to several successive months of rainfall.

In **South-West Asia**, conditions were slowly improving in the coastal areas of western Pakistan where light rain was reported during the second half of February At Turbat, Pasni and Gwadar. Dry conditions prevailed elsewhere in the region.

Area Treated

No control operations were reported during February.

Desert Locust Situation and Forecast

(see also the summary on the first page)

WEST AFRICA

Mauritania

• **SITUATION**

During the first two dekads of February, isolated mature adults were seen at four locations in the northwest between Oujeft (2003N/1301W) and Zouerate (2244N1221W).

• **FORECAST**

Low numbers of adults are expected to persist in parts of Inchiri, southern Adrar and southwestern Tiris Zemmour where there is a low possibility of small-scale breeding in areas of recent rainfall. Locusts are likely to be present in the southwest between R'Kiz and Tidjikja where unusually heavy rains fell in

January. Locust numbers will increase in these areas if breeding occurs. It is recommended to undertake surveys in the southwest during the forecast period.

Mali

• **SITUATION**

During February, a few individual maturing adult locusts were seen at Aguelhok (1927N/0052E) on the 12th.

• **FORECAST**

Isolated locusts may persist in parts of Timetrine and the Adrar des Iforas where vegetation remains green. No significant developments are likely.

Niger

• **SITUATION**

Scattered immature and mature adults at densities of 20-50 locusts per ha and a single fourth instar hopper were seen in crops near Arlit (1843N/0721E) on 24 February. No other locusts were seen during surveys carried out in February near Agadez and west of In Abangharit (1754N/0559E).

• **FORECAST**

Low numbers of adults will 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 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 and no surveys were carried out 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, scattered mature adults at densities of up to 300 locusts per ha, mixed with African Migratory Locust, persisted in a few places in the Tokar Delta on the Red Sea coast. Adults were seen copulating in the delta at Dambeil (1820N/3745E) on the 12th. No locusts were seen further north along the coastal plains between Tokar and Suakin.

• **FORECAST**

Locust numbers will decline in the Tokar Delta as conditions become dry. No significant developments are likely.

Eritrea

• **SITUATION**

Scattered hoppers, mainly fifth instar, were present on the northern Red Sea coastal plains in the Mahmimet area (1740N/3832E) on 8 February.

• **FORECAST**

Locust numbers will decline on the Red Sea coastal plains during the forecast period as vegetation becomes dry. No significant developments are expected.

Somalia

• **SITUATION**

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

• **FORECAST**

Isolated adults may be present in a few areas along the coastal plains between Djibouti and Las Koreh and on the escarpment near Borama. There is a low

possibility of breeding in coastal areas that recently received rainfall. No significant developments are likely.

Ethiopia

• **SITUATION**

No locusts were seen during surveys carried out on 14-23 February from north of Jijiga (0922N/4250E) to the Somali border near Borama.

• **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 February.

• **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. Surveys to clarify the situation are highly recommended in these areas.

Egypt

• **SITUATION**

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

• **FORECAST**

No significant developments are likely.

Kuwait

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Oman

• **SITUATION**

No locusts were reported in Dakhiliya, Dhahira and Musandam regions in northern Oman during February.

• **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 January and first half of February.

During the second half of February, isolated immature adults at densities of up to 3 per ha were seen in a few areas near the Baluchistan coast at Shooli (2542N/6237E).

• **FORECAST**

Small-scale breeding may occur in areas of recent rainfall on the Baluchistan coast near Turbat, Jiwani and Pasni during the forecast period. Consequently, locust numbers will slowly increase but remain well below threatening levels and no significant developments are likely.

India

• **SITUATION**

No locusts were reported during the second half of 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.

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 23rd session of the NW Africa Commission (CLCPANO) in French and Arabic
- Report of the 36th session of the DLCC recently held in Rome (English and French; Arabic upon request)
- FAO Desert Locust Guidelines, revised edition, 2001 (English)
- FAO Spray Monitoring Form (English)

EMPRES Contingency Planning Seminar. Details of the seminar recently held in Egypt are available on the Internet at: http://www.fao.org/news/global/locusts/0202cont/CPhome.htm

Desert Locust Control Diploma. The Graduate College of the University of Khartoum is offering a one year post-graduate diploma course in Desert Locust Control that is expected to start in August 2002. Applications should be sent before the first week of June to: Registrar of the Graduate College, University of Khartoum, POB 321, Khartoum, Sudan. For more details: Selbashir@hotmail.com

Upcoming events. The following are scheduled:

- 23rd session of the FAO Commission for Controlling the Desert Locust in the Central Region (CRC), 9-14 March 2002 (Damascus). Djibouti has applied for membership. 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

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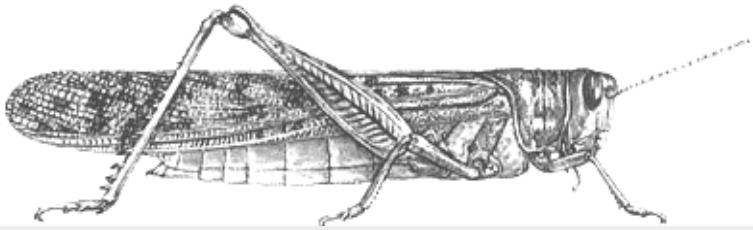
FORECAST TO: PREVISION AU: **15.04.02**	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favourables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: **Feb 2002 fev 2002**	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. 282
(3 Apr 2002)

General Situation during March 2002
Forecast until mid-May 2002

The Desert Locust situation continued to be calm during March. Only a few solitarious adults were present in western Mauritania, Morocco, Niger, on the Red Sea coast of Sudan and in western Pakistan. Very little rain fell in the recession area and conditions are generally unfavourable for breeding. No significant developments are likely during the forecast period.

Western Region. A few individual solitarious adults were seen during surveys in western **Mauritania**, **Morocco** and in Tamesna, **Niger**. No significant rain fell in the region and conditions remain dry in most areas except for parts of western Mauritania where there is enough green vegetation and soil moisture to allow locusts to survive and breed on a small scale.

Central Region. Vegetation continued to dry out in the breeding areas along both sides of the Red Sea except for the coastal plains of southeastern **Egypt** where good rains fell in early March. The only locusts reported in the region were a few solitarious adults in the Tokar Delta, **Sudan** although these will decline in the coming weeks as temperatures increase and vegetation dries out. Unusually widespread rain fell over the eastern portion of the Arabian Peninsula in UAE and Oman, yet there are not likely to be any locusts present to take advantage of this rainfall.

Eastern Region. Isolated solitarious adults were reported in the spring breeding areas in western **Pakistan**, first along the coast and, as temperatures increased, further north in the interior to nearly the Afghanistan border. Small-scale breeding is expected to occur during the forecast period causing locust numbers to increase slightly but remain well below threatening levels. No locusts were reported elsewhere in the region and no significant developments are likely.

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Telephone: +39 06 570 52420 (7 days/week, 24 hr)
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Internet: www.fao.org
DLIS: www.fao.org/news/global/locusts/locuhome.htm

No. 282

DESERT LOCUST BULLETIN

Weather & Ecological Conditions in March 2002

Dry conditions prevailed throughout most of the Desert Locust recession area where only sporadic rains were reported at times during March. Conditions may be improving slightly in the spring breeding areas of western Pakistan.

In **West Africa**, no significant rainfall was reported or is thought to have occurred during March for the second consecutive month. Nevertheless, conditions remained favourable in parts of western Mauritania (southern Inchiri, Trarza, southern Adrar and Tagant) where localized green vegetation and enough soil moisture were present to allow Desert Locust survival and limited breeding. At the end of the month, significant clouds were seen over northwestern Mauritania near Bir Moghrein and traces of rain were reported at Akjoujt and south of Chinguetti. Small patches of green vegetation may be present in a few wadis in the Adrar des Iforas, Mali. In Niger, dry conditions persisted in Tamesna where blowing dust was reported during the second half of March.

In **North-West Africa**, isolated showers occurred at times during March in parts of the region. In Morocco, light rains fell along the Atlantic coast between Tan-Tan and Agadir. Prevailing winds were from the southwest and west, interrupted at times by hot easterly (Chergui) winds that increased temperatures to 38°C in the southwest where vegetation is mainly dry and conditions are unfavourable for breeding. In Algeria, light rains fell at Tindouf on the 30th. These may have extended into parts of southwestern Morocco. In Tunisia, light rains fell in the south on the 17-18th.

In **Eastern Africa**, mainly dry conditions were reported except for some localized rainfall. Although light rains may have occurred along a large portion of the Red Sea coast in Sudan on 5-6 March, most of the natural vegetation is dry on the coastal plains and the only vegetation that remains green is the few crops in the Tokar Delta that have not been harvested. In Eritrea, light to heavy showers may have fallen on the southern coastal plains on the 21st where there were significant clouds present. In Ethiopia, heavy and widespread rains were reported in the Dire Dawa area (63 mm) during the first week of March. Some of this rain may have extended to coastal and interior areas of northwestern Somalia where green vegetation was reported to be persisting along the coast. The rainy season commenced on 18 March on the escarpment in northern Somalia between Borama and Erigavo.

In the **Near East**, rainfall was reported in several countries but conditions remained generally dry. On 5-6 March, light to heavy rainfall, associated with a depression over the central Red Sea, fell along the coast and subcoastal areas in southeastern Egypt from Abu Ramad to Halaib where vegetation was green. This storm extended across the sea to the central coastal plains of Saudi Arabia near Jeddah and into the interior near Hail where light rains occurred. Isolated showers fell at times on the edge of the Empty Quarter at Sharurah. In Yemen, light to moderate rains fell on the central Red Sea coast in early March where vegetation was drying out, in the interior near Al-Hazm and Wadi Jawf on the 8th, and along the southern coast from Lahij to Mukalla on the 18th. In Oman, light rains fell along the dry northern Batinah coast on the 10-11th and temperatures were increasing throughout the country. Widespread light to moderate rains and strong southerly winds, associated with a depression over the Persian Gulf, occurred on the 18th over the eastern portion of the Arabian Peninsula, extending from UAE to southern Oman. Most of the rain fell along the coast between Abu Dhabi and the Musandam Peninsula, but there were also reports of rainfall in the interior of Oman at Burami and Fahud.

In **South-West Asia**, isolated showers fell sporadically in western Pakistan where conditions are expected to be improving in some places. Light rains also fell on 2-3 March along the Indo-Pakistan border between Bahawalapur, Pakistan and Rajasthan, India where conditions are currently dry.

Area Treated

No control operations were reported during March.

Desert Locust Situation and Forecast

(see also the summary on the first page)

WEST AFRICA

Mauritania

• **SITUATION**

No locusts were reported during the last dekad of February.

During March, a few individual mature adults were seen near Atar (2032N/1308W), west of Tidjikja (1829N1131W) and east of Nouakchott.

• **FORECAST**

Low numbers of adults will persist in parts of Inchiri and southern Adrar. By the end of the forecast period, these adults could start to move towards the summer breeding areas of Tagant, Trarza and northern Brakna, supplementing the few adults that are already present in those areas. There is a slight possibility of limited breeding in low-lying areas and depressions if conditions remain favourable.

Mali

• **SITUATION**

No reports received.

• **FORECAST**

Isolated locusts may be present and will persist in parts of Timetrine and the Adrar des Iforas where vegetation remains green. No significant developments are likely.

Niger

• **SITUATION**

During surveys carried out 16-23 March, low numbers of mature adults were seen in Tamesna south of In Abangharit (1754N/0559E) at densities of 40-100 per ha and near Arlit (1843N/0721E) at densities of 5-10 per ha.

• **FORECAST**

Low numbers of adults will 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**

A late report indicated that no locusts were present during February.

• **FORECAST**

No significant developments are likely.

Morocco

• **SITUATION**

Two immature adults were seen near the southern foothills of the Atlas Mountains east of Guelmim at Maader Ougalid (2903N/0937W) on 19 March.

• **FORECAST**

No significant developments are likely.

Libyan Arab Jamahiriya

• **SITUATION**

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

• **FORECAST**

No significant developments are likely.

Tunisia

• **SITUATION**

No locusts were seen in the south and southwest during the third week of March.

• **FORECAST**

No significant developments are likely.

EASTERN AFRICA

Sudan

• **SITUATION**

During March, a few solitarious mature adults at densities of 13-20 per ha were present in the Tokar Delta at Galelama (1820N/3744E) and Dambeil (1818N/3744E). By the third week of the month, surveys had stopped along the Red Sea coastal plains.

• **FORECAST**

Locust numbers will continue to decline in the Tokar Delta as conditions become dry. No significant developments are likely.

Eritrea

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Somalia

• **SITUATION**

An unconfirmed and vague report of locusts in the northwest near Borama in February was found not to be true. During March, no locusts were reported and no surveys were carried out.

• **FORECAST**

Isolated adults may be present in a few areas along the coastal plains between Djibouti and Las Koreh and on the escarpment between Borama and Erigavo. There is a low possibility of breeding in some of these areas if rain falls. No significant developments are likely.

Ethiopia

• **SITUATION**

No locusts were seen during surveys carried out on 10-12 March between Dire Dawa and the Somali/ Djibouti border.

• **FORECAST**

No significant developments are likely.

Djibouti

• **SITUATION**

A late report indicated that no locusts were present and no surveys were carried out in February. Similarly, no locusts were reported and no surveys undertaken 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.

• **FORECAST**

Isolated adults may be present and perhaps breeding on a limited scale on the Red Sea coastal plains near Jizan and Jeddah. No significant developments are likely.

Yemen

• **SITUATION**

No locusts were reported during March.

• **FORECAST**

Low numbers of adults are likely to be present in a few places along the central Red Sea coastal plains. Surveys to clarify the situation are highly recommended in these areas.

Egypt

• **SITUATION**

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

• **FORECAST**

No significant developments are likely.

Kuwait

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Oman

• **SITUATION**

No locusts were reported in the northern interior from Burami to Muscat during March.

• **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**

Isolated adults may be present on the Vashnum plains near Chabahar in the extreme southeast and perhaps further west along the coast near Jask. Breeding is unlikely to occur unless good rains fall.

Pakistan

• **SITUATION**

No reports were received during the second half of February.

During the first half of March, isolated immature adults at densities of up to 3 per ha were seen in a few places along the Baluchistan coast between Pasni (2513N/6330E) and Jiwani (2502N/6150E). New infestations were reported further inland in the Turbat Valley, southwest of Khuzdar (2749N/6639E) and north of Dalbandin (2856N/6430E) in the Chagai Hills near the Afghanistan border.

During the second half of March, similar populations at densities of up to 5 per ha persisted in coastal and interior areas of Baluchistan.

• **FORECAST**

Small-scale breeding may occur in areas of recent rainfall in Baluchistan causing locust numbers to increase slightly but remain well below threatening levels and no significant developments are likely.

India

• **SITUATION**

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

• **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 Guidelines. The revised edition in English was issued on 24 September 2001 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:

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

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- Report of the 23rd session of the NW Africa Commission (CLCPANO) in French and Arabic
- Report of the 36th session of the DLCC recently held in Rome (English and French; Arabic upon request)
- FAO Desert Locust Guidelines, revised edition, 2001 (English)
- FAO Spray Monitoring Form (English)

EMPRES Contingency Planning Seminar. Details of the seminar recently held in Egypt are available on the Internet at: www.fao.org/news/global/locusts/0202cont/CPhome.htm

Desert Locust Control Diploma. The Graduate College of the University of Khartoum is offering a one year post-graduate diploma course in Desert Locust Control that is expected to start in August 2002. Applications should be sent before the first week of June to: Registrar of the Graduate College, University of Khartoum, POB 321, Khartoum, Sudan. For more details: Selbashir@hotmail.com

Upcoming events. The following are scheduled:

- **CLCPANO.** 31st session of the Executive Committee, Agadir (Morocco), 27 May – 2 June
- **EMPRES/WR.** DGPS regional workshop, Nouakchott (Mauritania), 5-10 October
- **EMPRES/CR.** 10th Liaison officers meeting, Jeddah (Saudi Arabia), 27-31 October
- **EMPRES/DLCO-EA/CRC.** 2nd Joint meeting, Cairo (Egypt), 5-6 November
- **EMPRES/WR.** 1st Liaison officers meeting, Niamey (Niger), 15-20 December
- **SW Asia Commission.** 23rd session, Islamabad (Pakistan), 15-19 December

No. 282

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

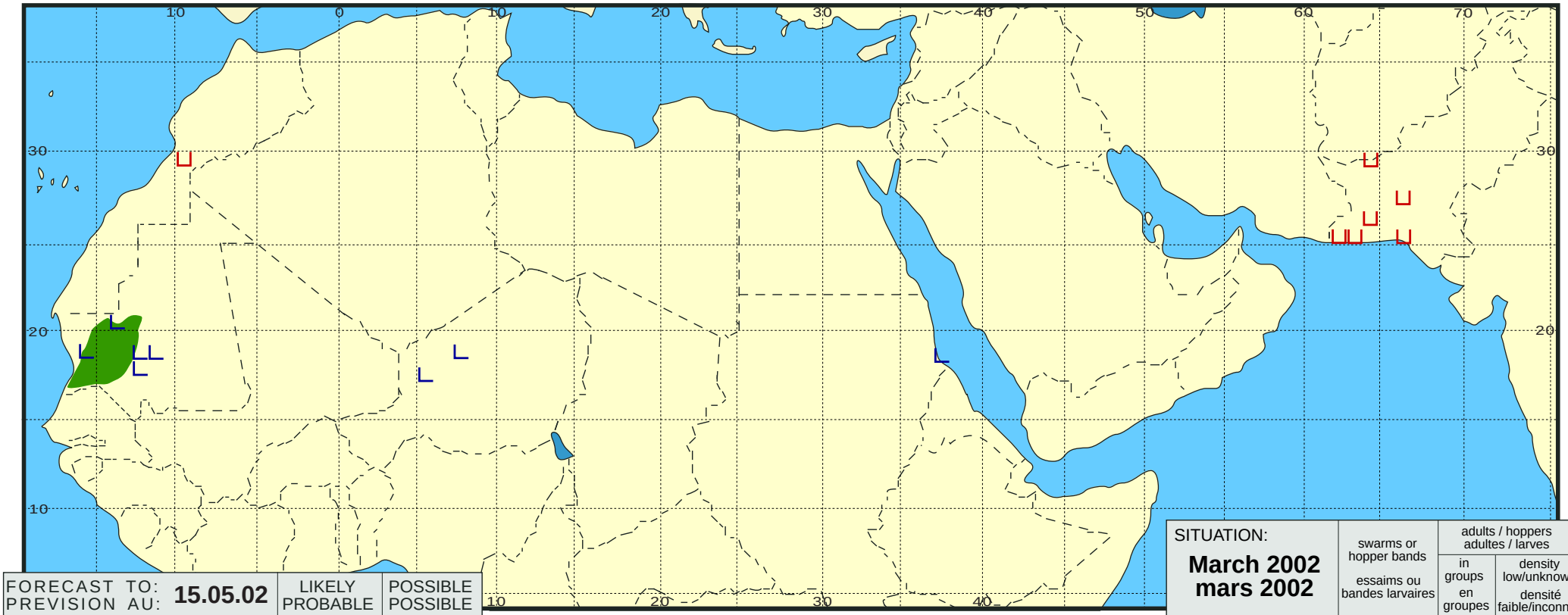
- period without widespread and heavy infestations by swarms.

REMISSION

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

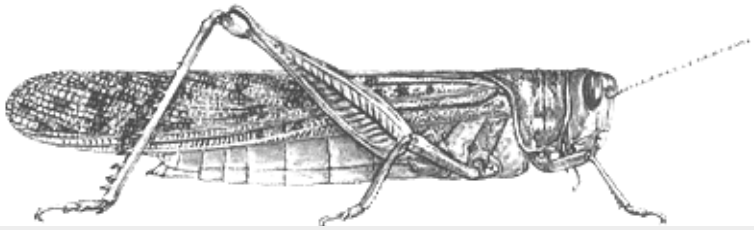
Desert Locust Summary
Criquet pèlerin - Situation résumée

282



FORECAST TO: PREVISION AU: **15.05.02**	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: **March 2002 mars 2002**	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. 280
(5 Feb 2002)

General Situation during January 2002
Forecast until mid-March 2002

The Desert Locust situation was calm during January. Insignificant numbers of solitarious adults were reported in northwestern Mauritania, Niger, and on the Red Sea coastal plains of Sudan and Eritrea. Unprecedented rainfall in western Mauritania could lead to an increase in locust numbers in that area.

Western Region. Scattered solitarious adults were reported in a few places of northwestern **Mauritania** and at one location in **Niger** during January. Extremely unusual and unprecedented heavy rainfall occurred over western Mauritania on 9-11 January. While the significance of this event is not entirely clear, it should allow any locusts that are present to survive and breed during the forecast period. Surveys are recommended to detect any increase in locust numbers. There was also a report of hoppers and adults in northern **Mali**. Further details are awaited. No locust are dry conditions prevailed elsewhere in the Region.

Central Region. Scattered adults were reported in Tokar Delta on the Red Sea coastal plains **Sudan** and one adult was seen on the **Eritrean** plains during January because of prevailing dry conditions. This suggests very little winter breeding has been detected so far this year on both sides of the Red Sea even though good rains have fallen along the eastern shore in **Saudi Arabia** and **Yemen**. No locusts were reported elsewhere in the Region.

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.

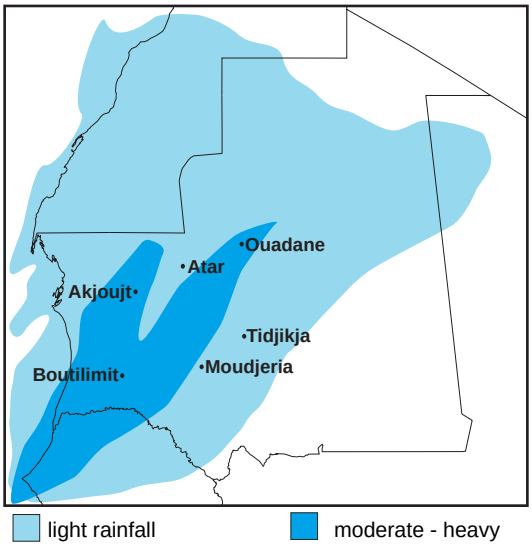
The FAO Desert Bulletin is issued monthly, supplemented by Updates during periods of increased Desert Locust activity, and is distributed by fax, e-mail, FAO pouch and airmail by the Locusts and Other Migratory Pests Group, AGP Division, FAO, 00100 Rome, Italy. It is also available on the Internet.
Telephone: +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 January 2002

Unusually heavy rainfall occurred in western Mauritania and good rains fell along parts of the Red Sea coast and in western Pakistan. Consequently, breeding conditions are favourable or becoming so in these areas.

In **West Africa**, unprecedented rains fell over a large area of western Mauritania on 9-11 January from Rosso and Kiffa to Tidjikja, Atar and Ouadane. The rainfall was heaviest in the southwest where Boutilimit reported 60 mm, R'Kiz 59 mm and Moudjeria 47 mm. It was lighter in the north where 13 mm fell in Akjoujt, 11 mm in Ouadane and 6 mm in Tidjikja. Long-term average rainfall for these stations in January is from 0-2 mm. Green vegetation was present in parts of Inchiri and southern Adrar to Zouerate and Guelb er Richat. In Mali, traces of rain fell in the Adrar des Iforas near Aguelhok on 11 and 20 January. Green vegetation was present further west in Timetrine. In Niger, small patches of green vegetation persisted in a few interdunal areas in Tamesna.

In **North-West Africa**, dry conditions prevailed in most of the Desert Locust areas. In Morocco, green vegetation was present in places along Oued Draa and the Atlantic coast that received rainfall in December, and to a limited extent in a few spots of the extreme south and southwest where only light rains have occurred. Light rain fell at Dakhla on 6 January. In Algeria, no rainfall was reported and low temperatures prevailed in desert areas. Consequently, breeding conditions were not favourable.



Estimated rainfall over Mauritania, 9-11 January 2002.

In **Eastern Africa**, mostly dry conditions were reported in the Region. In Sudan, unusually dry conditions prevailed on the Red Sea coastal plains between Tokar Delta and Port Sudan although the latter received 17 mm on the 17th. In Tokar Delta, crops and natural vegetation were green. In Eritrea, moderate rainfall was reported on the Akbanazouf Plain on the Red Sea coast during the first week of January. In Djibouti, vegetation was becoming green in a few limited areas along the coastal plains east of Djibouti and on the northern coast between Obock and the Eritrean border. Dry conditions persisted in the interior of the country. In northern Somalia, light rain fell in the interior during the first week of January and on the coast at Berbera at mid month.

In the **Near East**, rainfall was reported along the Red Sea coast where breeding conditions remained favourable. In Saudi Arabia, light to moderate rains fell at times during the month on the southern Red Sea coastal plains at Jizan, light rains fell along the central and northern coast from Jeddah to Wejh and good rains fell in the interior where temperatures remained low. Light rains fell along the Red Sea coast of Yemen on 16 January and again on the 24th when it was heaviest in the north. Breeding conditions continued to remain favourable along the coast for several months in a row. Although light rains fell along parts of the Gulf of Aden coast east of Aden on the 17th, vegetation was reported to be dry. Dry conditions prevailed in Oman.

In **South-West Asia**, moderate rains fell in parts of the spring breeding areas of western Pakistan. Turbat received 26 mm and Jiwani 50 mm during the first half of January. Nevertheless, dry conditions prevailed throughout the region.

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, isolated immature and mature adults were present at a few places between the Inchiri coast and Chinguetti (2025N/1224W). One fifth instar hopper was seen east of Akjoujt (1945N/1421W) on the 9th. By the end of the month, a few locusts were seen further north near the El Khatt region of southwestern Tiris Zemmour.

• **FORECAST**

Low numbers of adults are expected to persist in parts of Inchiri, southern Adrar and southwestern Tiris Zemmour where small-scale breeding could occur in areas of recent rainfall. Locusts may be present in the southwest between R'Kiz and Tidjikja where unusually heavy rains fell in January. Locust numbers will increase in these areas if breeding occurs. It is recommended to undertake surveys in the southwest during the forecast period.

Mali

• **SITUATION**

During January, there was a report of hoppers and immature and mature adults persisting in some wadis of Timetrine at Assamamal (1906N/0024W), Dardar (1913N/0003W) and Assikad (1924N/0001W) where locusts were seen in December. It was not clear if some of these populations contained gregarious locusts. Further details are awaited.

• **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 and movement.

Niger

• **SITUATION**

Scattered immature and mature adults, at densities of 20-40 adults per ha, were seen at one location northwest of Agadez at 1843N/0721E on 27 January. No locusts were seen elsewhere in the Tamesna during January.

• **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 January.

• **FORECAST**

There is a slight possibility that low numbers of adults may be present along the Malian border near Bordj Mokhtar and Timiaouine where they could persist during the forecast period.

Morocco

• **SITUATION**

No locusts were reported from the south or southeast during January.

• **FORECAST**

No significant developments are likely.

Libyan Arab Jamahiriya

• **SITUATION**

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

• **FORECAST**

No significant developments are likely.

Tunisia

• **SITUATION**

No locusts were reported during January.

• **FORECAST**

No significant developments are likely.

EASTERN AFRICA

Sudan

• **SITUATION**

Scattered immature and mature adults at densities up to 500 adults per ha and mixed with African Migratory Locust were present at five locations in

Tokar Delta on 19 January. No locusts were seen on the coastal plains from Tokar Delta to Port Sudan on the 21st.

• **Forecast**

Locust numbers will decline in Tokar Delta and on the Red Sea coastal plains between Port Sudan and Karora as conditions become dry. No significant developments are likely.

Eritrea

• **Situation**

A late report indicated that a single Desert Locust was seen mixed with African Migratory Locusts on the Red Sea coast at Shirumkelib (1742N/3823E) on 31 December.

In January, there was a report of scattered Desert Locust on the Akbanazouf Plains (1557N/3912E) on the Red Sea coast on 10 January.

• **Forecast**

Locust numbers will decline on the Red Sea coastal plains as conditions become dry. No significant developments are likely.

Somalia

• **Situation**

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

• **Forecast**

Isolated adults may be present in a few areas along the coastal plains between Djibouti and Las Koreh and, to a lesser extent, in the interior. 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 locusts were seen during surveys carried out along the coastal plains and in the interior on 24-29 January.

• **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.

• **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 seen along the Gulf of Aden coast from Aden (1250N/4503E) to Ahwar (1333N/4644E) on 19-20 January. No locust reports were received from the Red Sea coastal plains.

• **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 January.

• **Forecast**

A few isolated adults may be present 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 Dakhiliya and Batinah regions in northern Oman during January.

• **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 first half of January.

• **FORECAST**

Low numbers of adults are likely to appear and breed in areas of recent rainfall in coastal Baluchistan. No significant developments are likely.

India

• **SITUATION**

No locusts were reported during the first half of 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.

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

New locust publication. A new publication in French by Jean Roy, Histoire d'un siècle de lutte anti-acridienne en afrique, is available. Please contact the Locust Group for more information.

Upcoming events. The following are scheduled:

- 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 has applied for membership. 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).

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- enough present for mutual reaction to be possible but no ground or basking groups seen;
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- 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

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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

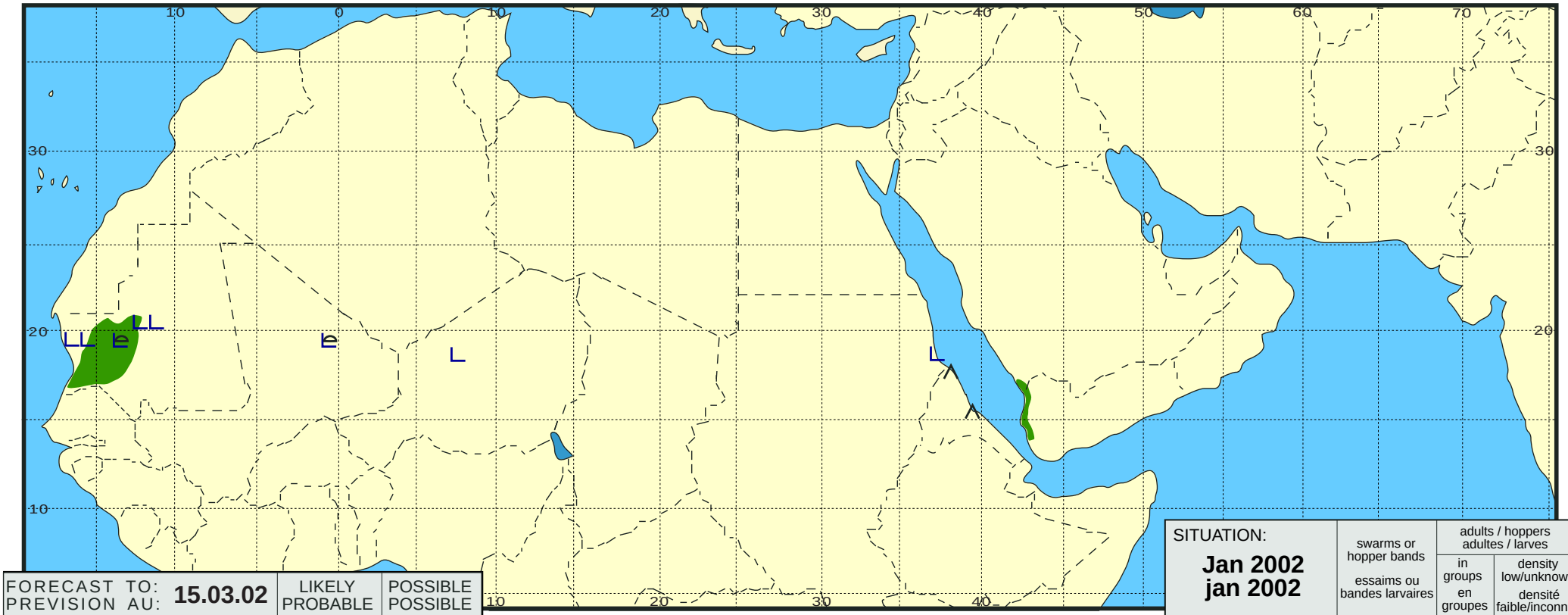
- period without widespread and heavy infestations by swarms.

REMISSION

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

Desert Locust Summary
Criquet pèlerin - Situation résumée

280



FORECAST TO: PREVISION AU: **15.03.02**	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favourables à la reproduction		
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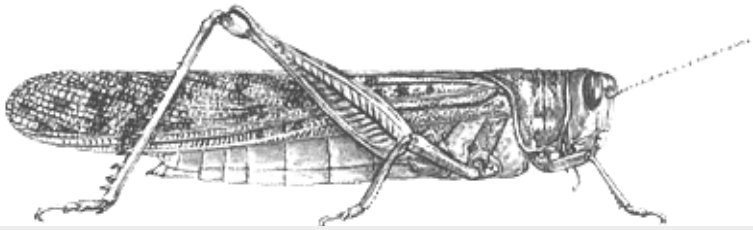
non swarming adults adultes non essaimant		

SITUATION: **Jan 2002** **jan 2002**	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)			



DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations

No. 283
(3 May 2002)

General Situation during April 2002
Forecast until mid-June 2002

The Desert Locust situation continued to be calm during April. No significant locust populations were reported in the recession area. Conditions remained unfavourable for breeding despite good rains in parts of North-West Africa but they will improve in the southern and eastern Arabian Peninsula where unusual rains fell for the second consecutive month. Breeding conditions are already favourable in parts of eastern Ethiopia and northwestern Somalia. Individual locust adults were present in northern Niger and small-scale breeding was detected in western Pakistan. No significant developments are likely during the forecast period.

Western Region. No locusts were reported in the region except for two individual adults in **Niger**. Although conditions are not favourable for breeding despite good but sporadic rainfall in parts of **Morocco** and **Algeria**, there is likely to be enough vegetation to allow low numbers of solitarious adults to survive in parts of western **Mauritania**, northern **Mali** and Niger. No significant developments are likely.

Central Region. No locusts were reported in the region during April. Unusual rains fell over a widespread area of the southern and eastern Arabian Peninsula in mid April for the second month in a row, causing flooding in some places. Low numbers of locusts from surrounding areas including the Horn of Africa may have moved into the interior of **Yemen** and perhaps into adjacent areas of **Saudi Arabia** and **Oman** on winds associated with the storm. If so, these adults could lay on a small-scale in areas where vegetation has become green and the soil is moist from the rains or related run-off. Elsewhere, breeding conditions are favourable in eastern **Ethiopia** and parts of northwestern **Somalia**.

Eastern Region. Sporadic showers fell in western **Pakistan** and along both sides of the Indo-Pakistan border. Isolated solitarious adults persisted in the spring breeding areas in western Pakistan during April. Small-scale breeding was detected in one place where a few first instar hoppers were seen. Results from a joint Iran/Pakistan survey of the spring breeding areas are awaited to clarify further the situation.

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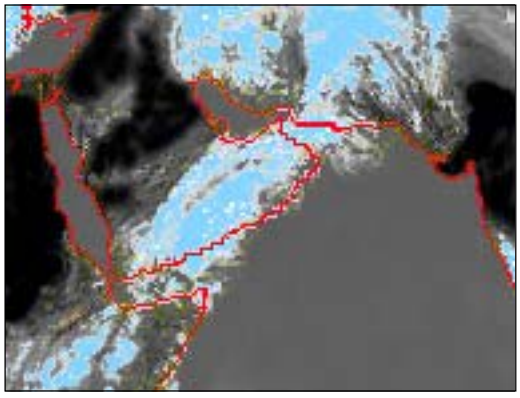
Facsimile: +39 06 570 55271
E-mail: eclo@fao.org
Internet: www.fao.org
DLIS: www.fao.org/news/global/locusts/locuhome.htm

Weather & Ecological Conditions in April 2002

Unusual rains fell for the second consecutive month over the southern and eastern Arabian Peninsula. Rainfall also occurred in parts of North-West Africa and eastern Africa. Mainly dry and unfavourable breeding conditions prevailed due to increasing temperatures in most areas.

In **West Africa**, no significant rainfall was reported or is thought to have occurred during April for the third consecutive month although isolated showers may have fallen in northern Mali on the 8-9th. Even though conditions are unfavourable for breeding throughout the region, enough vegetation is likely to be present to allow limited numbers of locust adults to survive in parts of western Mauritania (southern Inchiri, Trarza, Adrar and Tagant), in a few wadis in the Adrar des Iforas, northern Mali, and in some interdunal areas in Tamesna and in a few wadis in the Air, Niger.

In **North-West Africa**, light to moderate rainfall occurred in some areas during April. Isolated showers fell at times on the southern side of the Atlas Mountains in Morocco from the Atlantic coast to the Draa Valley. Some of these were heavy and extended south along the coast towards Tan-Tan and into western Algeria between Tindouf and Bechar. In Morocco, Guelmim reported 63 mm, Ouarzazate 24 mm and Laayoune 6 mm; in Algeria, Tindouf reported 25 mm and Bechar 13 mm. Light rains fell in a few places in the central and eastern Algerian Sahara and may have occurred on the southern side of the Atlas Mountains in Morocco on 29-30 April. Hot easterly Chergui winds caused temperatures to increase steadily during April, reaching 40 °C in southern Morocco. Vegetation was dry in southern Morocco, in the Algerian Sahara and along the Algerian-Libyan border.



Clouds over southern and eastern Arabian Peninsula resulting in unusual rainfall on 10-13 April.

In **Eastern Africa**, mainly dry conditions prevailed throughout the region during April. During the second week of the month, significant cloud activity was present over Ethiopia, Djibouti, southern Eritrea and northern Somalia and light rains were reported in northern Somalia along the coast near Berbera and in the interior near Borama. Light rainfall occurred several times near Dire Dawa, Ethiopia where a total of nearly 100 mm was received during the first half of the month. In Djibouti, light rain fell along the northern coast near Obock and the eastern coast near Djibouti town during the third week of April. Light to moderate rains may have fallen in eastern Sudan between Kassala and Derudeb on the 30th. Because of good rainfall during the past two months, breeding conditions are favourable in eastern Ethiopia between Dire Dawa and Jijiga, extending to parts of the coast and interior areas in northwestern Somalia. Green vegetation was also present in Eritrea on the Red Sea coast between Massawa and Inghel.

In the **Near East**, unusual rains fell over a widespread area of the southern and eastern Arabian Peninsula from Jizan, Saudi Arabia to the interior of Yemen and Oman for the second consecutive month. Similar to the rainfall in March, these rains were associated with a low-pressure system that developed over the Persian Gulf on 10-13 April and brought moist air on southerly winds from the Arabian Sea. Rainfall was heaviest in Yemen along the southern coast and in the interior between Wadi Jawf and Hadramaut. Moderate to heavy rains fell throughout Oman and flooding was reported in several areas. On the southern Red Sea coast in Saudi Arabia, Jizan reported 53 mm, and 23 mm fell on the edge of the Empty Quarter at Sharurah. Light to moderate rains also fell along the Red Sea coast in Yemen where vegetation was dry or drying out. Because of the unusual rains, breeding conditions are likely to improve in those areas that received rainfall.

In **South-West Asia**, light rainfall occurred in early April in western Pakistan in the Baluchistan interior and along the Indo-Pakistan border in Cholistan, Pakistan and Rajasthan, India. Nevertheless, mainly dry conditions prevailed in the region except for small isolated patches of green vegetation in the spring breeding areas in western Pakistan.

Area Treated

No control operations were reported during April.

WEST AFRICA

Desert Locust Situation and Forecast

(see also the summary on the first page)

Mauritania

• **SITUATION**

No locusts were reported during April.

• **FORECAST**

Low numbers of adults are likely to be present in parts of Inchiri and southern Adrar as well as in the summer breeding areas of Tagant, Trarza and northern Brakna. No significant developments are likely.

Mali

• **SITUATION**

No locusts were reported during April.

• **FORECAST**

Isolated adults may be present and will persist in parts of Timetrine and the Adrar des Iforas where vegetation remains green. No significant developments are likely.

Niger

• **SITUATION**

Two individual mature locusts were seen near Arlit (1843N/0721E) during surveys carried out in April between Agadez and Arlit.

• **FORECAST**

Isolated adults will 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 April.

• **FORECAST**

No significant developments are likely.

Morocco

• **SITUATION**

No locusts were reported during April.

• **FORECAST**

Isolated adults may be present in the Draa Valley and in nearby areas where small-scale breeding could occur in areas of recent rainfall. No significant developments are likely.

Libyan Arab Jamahiriya

• **SITUATION**

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

• **FORECAST**

No significant developments are likely.

Tunisia

• **SITUATION**

No locusts were reported during April.

• **FORECAST**

No significant developments are likely.

EASTERN AFRICA

Sudan

• **SITUATION**

No locusts were reported during April.

• **FORECAST**

No significant developments are likely.

Eritrea

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Somalia

• **SITUATION**

No locusts were reported along the northwest coast between Bulhar (1023N/4425E) and Lughaye (1041N/4356E) up to 22 April.

• **Forecast**

Isolated adults may be present in a few areas along the coastal plains between Djibouti and Las Koreh and on the escarpment between Borama and Erigavo. There is a low possibility of breeding in some of these areas where recent rains have fallen. No significant developments are likely.

Ethiopia

• **Situation**

No locusts were reported during April.

• **Forecast**

Although conditions may be favourable for breeding, the likelihood that locusts are present is very low and, consequently, no significant developments are expected.

Djibouti

• **Situation**

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

• **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 April.

• **Forecast**

Isolated adults may be present on the Red Sea coastal plains near Jizan where small-scale breeding could occur. No significant developments are likely.

Yemen

• **Situation**

No locusts were seen during surveys on the Red Sea coastal plains on 24-25 April.

• **Forecast**

Low numbers of adults may have moved into the interior desert between Marib and Hadramaut on winds associated with the rains that fell in mid April. If so, small-scale breeding could occur in those areas that received rainfall. Surveys to clarify the situation are highly recommended in these areas.

Egypt

• **Situation**

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

• **Forecast**

No significant developments are likely.

Kuwait

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Oman

• **Situation**

No locusts were reported in Musandam, Dhahira, Batinah and Dakhiliya regions during 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 reports received. Results of the Iran/Pakistan Joint Survey carried out in Sistan-Baluchistan during the first half of April are awaited.

• **Forecast**

Isolated adults may be present on the Vashnum plains near Chabahar in the extreme southeast and perhaps further west along the coast near Jask but locust numbers will decline as conditions dry out.

Pakistan

• **Situation**

During the first half of April, immature and mature isolated adults at densities of up to 4 per ha were seen at 11 locations in coastal and interior areas of Baluchistan and Las Bela Small scale breeding was detected in one location near Turbat at Bidrang (2603N/6410E) where two first instar hoppers were reported on the 9th.

Results of the Iran/Pakistan Joint Survey carried out in Baluchistan during the second half of the month are awaited.

• **FORECAST**

Locust numbers will decline in Baluchistan as vegetation becomes dry. No significant developments are likely.

India

• **SITUATION**

No locusts were reported during the second half of March and the first half of April.

• **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 Guidelines. The revised edition in English was issued on 24 September 2001 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:

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 23rd session of the NW Africa Commission (CLCPANO) in French and Arabic
- Report of the 36th session of the DLCC recently held in Rome (English and French; Arabic upon request)
- FAO Desert Locust Guidelines, revised edition, 2001 (English)
- FAO Spray Monitoring Form (English)

EMPRES Contingency Planning Seminar. Details of the seminar recently held in Egypt are available on the Internet at: www.fao.org/news/global/locusts/0202cont/CPhome.htm

Desert Locust Control Diploma. The Graduate College of the University of Khartoum is offering a one year post-graduate diploma course in Desert Locust Control that is expected to start in August 2002. Applications should be sent before the first week of June to: Registrar of the Graduate College, University of Khartoum, POB 321, Khartoum, Sudan. For more details: Selbashir@hotmail.com

Upcoming events. The following are scheduled:

- **CLCPANO.** 31st Session of the Executive Committee, Agadir (Morocco), 27 May – 2 June
- **EMPRES/CR.** ULV sprayer evaluation workshop, Cairo (Egypt), 23-25 September
- **EMPRES/WR.** DGPS regional workshop, Nouakchott (Mauritania), 5-10 October
- **EMPRES/CR.** Training of Trainers workshop, Oman, 7-17 October
- **EMPRES/CR.** 10th Liaison officers meeting, Jeddah (Saudi Arabia), 27-31 October
- **EMPRES/DLCO-EA/CRC.** 2nd Joint meeting, Cairo (Egypt), 5-6 November
- **EMPRES/WR.** 1st Liaison officers meeting, Niamey (Niger), 15-20 December
- **SW Asia Commission.** 23rd Session, Islamabad (Pakistan), 15-19 December

No. 283

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

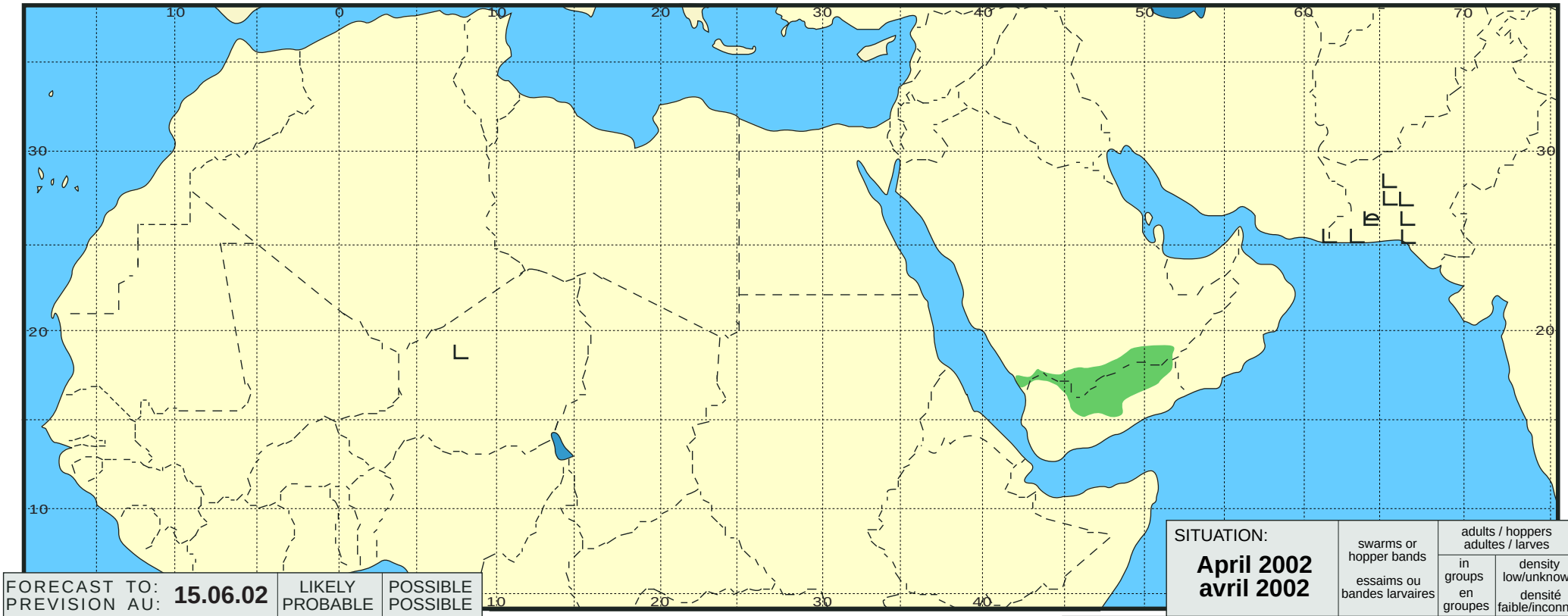
- period without widespread and heavy infestations by swarms.

REMISSION

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

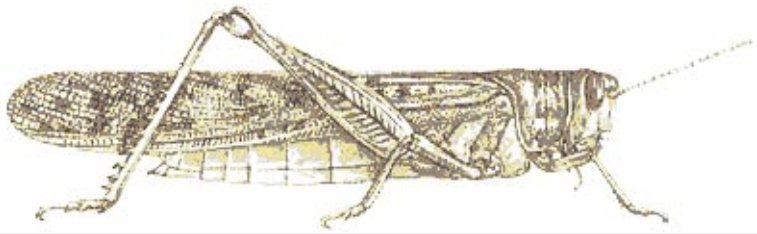
Desert Locust Summary
Criquet pèlerin - Situation résumée

283



FORECAST TO: PREVISION AU: **15.06.02**	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: **April 2002 avril 2002**	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. 284

(3 June 2002)

General Situation during May 2002
Forecast until mid-July 2002

The Desert Locust situation continued to be calm during May. Only a few individual adults were seen in western Pakistan. Conditions remained dry in most areas except in parts of eastern Ethiopia and northwestern Somalia. A tropical depression caused heavy rains and flooding in southern Oman but no locusts have been reported so far. Small-scale breeding is likely to commence in the Sahel of West Africa and Sudan with the onset of the summer rains. No significant developments are likely during the forecast period.

Western Region. No locusts were reported in the region during May and conditions were dry except in a few parts of central **Mauritania** where there is enough green vegetation to allow low numbers of locusts to survive. There were unconfirmed reports of swarms and adult concentrations in northern **Mali** during March and April. Most of these are expected to Tree Locust rather than Desert Locust. Small-scale breeding is likely to occur in southern Mauritania, northern Mali and **Niger** with the onset of the summer rains. No significant developments are likely.

Central Region. No locusts were reported in the region during May. Unusually heavy rains associated with a tropical depression fell in southern **Oman** and flooding occurred in some places. Good rains also fell in parts of eastern **Ethiopia** and northwestern **Somalia** where conditions are favourable for breeding. Small-scale breeding is likely to occur in western and central **Sudan** with the onset of the summer rains. No significant developments are likely.

Eastern Region. Dry conditions prevailed throughout the region. A few individual locusts were seen in the spring breeding areas in western **Pakistan** where vegetation was drying out. No locusts were seen during a joint Iran/Pakistan survey of the spring breeding areas in April.

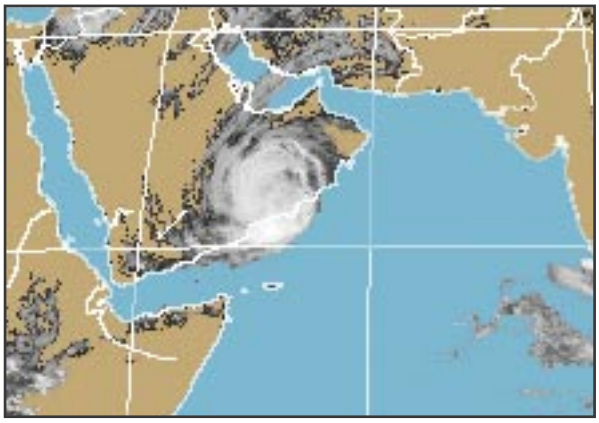
The FAO Desert Locust Bulletin is issued monthly, supplemented by Updates during periods of increased Desert Locust activity, and is distributed by fax, e-mail, FAO pouch and airmail by the Locust and Other Migratory Pests Group, AGP Division, FAO, 00100 Rome, Italy. It is also available on the internet.
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 and Ecological Conditions in May 2002

Conditions remained dry and unfavourable for breeding throughout the Desert Locust recession area during May. A tropical depression caused heavy rains and flooding in southern Oman. Rainfall also occurred in parts of eastern Africa. Temperatures were high in the Sahel of West Africa and Sudan prior to the onset of the summer rains.

In **West Africa**, very little rainfall occurred and mainly dry conditions prevailed throughout the region in May. In Mauritania, widespread clouds were present over southern and central areas on the 22-26th. This gave rise to light rainfall in Kiffa and Akjoujt and traces in Aioun and Tidjikja. Ecological conditions were reported to be favourable for locust survival but not breeding in southwest Tagant near El Khatt and Tamassoumit. In Mali, the first rains of the season fell in the west at Nara on the 17th and light rains occurred at Gao on the 28th. Strong hot winds associated with dust storms were reported in the Adrar des Iforas and Timetrine where conditions are favourable for locust survival. The ITCZ was generally well south of the Desert Locust breeding areas except at the end of the month when it reached 20°N over Niger.

In **North-West Africa**, light to moderate rainfall associated with eastward-moving depressions over the Mediterranean occurred in some areas during May. In Morocco, light rains fell in a few places along the southern side of the Atlas Mountains. Hot easterly Chergui winds continued throughout the month, causing temperatures to reach 41°C in the south. The green vegetation that developed in the extreme southwest during February and March was reported to be drying out. In Algeria, isolated showers fell at times during the first half of the month in the northern Sahara where high temperatures persisted, reaching 40°C. Dry vegetation and unfavourable breeding conditions persisted elsewhere in the region.



A tropical depression that formed over the Indian Ocean moved inland in southern Oman, causing good rains to fall on 9-10 May. The short-lived depression weakend and moved north where it dispersed on 13 May. [adopted IR image 10 May, 1200h]

In **Eastern Africa**, mainly dry conditions prevailed throughout the region during May. Good rains associated with the short rains season (Belg) fell at times during the first three weeks of the month in parts of eastern Ethiopia where Jijiga reported 70 mm and Dire Dawa 10 mm. Light rains also fell in adjacent areas of the interior in northwestern Somalia between Hargeisa and Boroma. In Sudan, light rains fell in the Eastern Region near Kassala on the 25th and in parts of Northern Kordofan on the 29th. Conditions are favourable for breeding in northwestern Somalia and in eastern Ethiopia near Jijiga. They are expected to improve in Northern Kordofan and near Kassala in Sudan.

In the **Near East**, good rains fell over the southern Arabian Peninsula in May for the third month in a row. The rains were associated with a short-lived tropical depression that formed over the Indian Ocean during the first week of the month and reached the southern coast of Oman on 9 May. In the next few days, it moved futher inland across the Dhofar Hills to the edge of the Empty Quarter, then northwards to UAE and northern Oman until it dispersed on the 13th. Moderate to heavy rains were concentrated in coastal areas of southern Oman where Raysut reported 67 mm and Salalah 59 mm, as well as parts of the interior (Thumrait, 24 mm). In some areas, flooding occurred. Light to heavy rains fell in northern Oman along the Batinah coast and in the interior regions (Dakhliya, Dhahira, and Sharkiya) as well as in parts of UAE. There is no indication that the storm crossed into eastern Yemen. Dry and unfavourable breeding conditions were reported throughout the region.

In **South-West Asia**, no rainfall was reported in the region except for light showers in the Baluchistani interior in western Pakistan at Panjgur at mid-month. Consequently, conditions are dry and unfavourable for breeding. The southwesterly wind flow from the Horn of Africa that brings the monsoon rains to subcontinent became established over the Arabian Sea from the second week of May onwards.

Area Treated

No control operations were reported during May.

Desert Locust Situation and Forecast

(see also the summary on page 1)

WEST AFRICA

Mauritania

• **SITUATION**

A few isolated adults were reported during the first half of May.

• **FORECAST**

Low numbers of adults are likely to be present in parts of Inchiri and southern Adrar as well as in the summer breeding areas of Tagant, Trarza and northern Brakna. Small-scale breeding will commence with the onset of the summer rains. No significant developments are likely.

Mali

• **SITUATION**

A late report indicated that there were several unconfirmed sightings of maturing swarms and small concentrations of locusts in the Adrar des Iforas Aguelhok (1927N/0052E) during March and April. On 15 March, Desert Locust mixed with *Anacridium* sp. (Tree Locust) was seen flying northwards at Aguelhok (1927N/0052E). On 5 April, concentrations were present nearby at Tirikfen and, on the 8th, locusts were seen flying northwards at Taouloust (1920N/0040E) and Ratai (1928N/0051E). It is unlikely that any of these are actually swarms.

• **FORECAST**

Isolated adults may be present and will persist in parts of Timetrine and the Adrar des Iforas where vegetation remains green. Small-scale breeding will commence with the onset of the summer rains. No significant developments are likely.

Niger

• **SITUATION**

No reports received.

• **FORECAST**

Isolated adults are likely to be present in a few places of Tamesna. Small-scale breeding will commence with the onset of the summer rains. No significant developments are likely.

Chad

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Senegal

• **SITUATION**

No locusts were reported during May.

• **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 likely.

Morocco

• **SITUATION**

No locusts were reported during May.

• **FORECAST**

No significant developments are likely.

Libyan Arab Jamahiriya

• **SITUATION**

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

• **FORECAST**

No significant developments are likely.

Tunisia

• **SITUATION**

No locusts were reported during May.

• **FORECAST**

No significant developments are likely.

EASTERN AFRICA

Sudan

• **SITUATION**

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

• **Forecast**

Isolated adults are likely to appear during the forecast period in Northern Kordofan and Northern Darfur where small-scale breeding will commence with the onset of the rains. No significant developments are likely.

Eritrea

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Somalia

• **Situation**

No locusts were reported during May and surveys are planned for June.

• **Forecast**

Isolated adults may be present in a few areas along the coastal plains between Djibouti and Las Koreh and on the escarpment between Boroma and Erigavo. There is a possibility of breeding in some of these areas where recent rains have fallen. No significant developments are likely.

Ethiopia

• **Situation**

No locusts were seen during surveys carried out near Dire Dawa and Jijiga on 11-15 May.

• **Forecast**

Although conditions may be favourable for breeding, the likelihood that locusts are present is very low and, consequently, no significant developments are expected.

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 May.

• **Forecast**

No significant developments are likely.

Yemen

• **Situation**

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

• **Forecast**

Low numbers of adults may be present in the interior near Wadi Hadhramaut and Shabwah. Surveys to clarify the situation are highly recommended in these areas.

Egypt

• **Situation**

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

• **Forecast**

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 the north during May.

• **Forecast**

There is a low possibility that isolated adults may be present in areas of recent rainfall in the south. 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**

A late report indicated that no locusts were seen during the Iran/Pakistan Joint Survey carried out in Sistan-Baluchistan in the first half of April.

No locusts were reported in Hormozgan province in mid May.

• **Forecast**

No significant developments are likely.

Pakistan

• **Situation**

During the second half of April, isolated immature and mature adults were present at densities of 1-3 per ha at 12 locations along the coast and in the interior of Baluchistan. No locusts were seen by the Iran/Pakistan Joint Survey that was carried during the same period.

During the first half of May, only individual locust adults were seen at five locations in Baluchistan.

• **Forecast**

Locust numbers will decline in Baluchistan as vegetation becomes dry. No significant developments are likely.

India

• **Situation**

No locusts were reported during the second half of April and the first half of May.

• **Forecast**

Small-scale breeding is likely to commence with the onset of the monsoon rains in Rajasthan. No significant developments are likely.

Afghanistan

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Announcements

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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 23rd session of the NW Africa Commission (CLCPANO) in French and Arabic
- Report of the 36th session of the DLCC recently held in Rome (English and French; Arabic upon request)
- FAO Desert Locust Guidelines, revised edition, 2001 (English)
- FAO Spray Monitoring Form (English)

EMPRES Contingency Planning Seminar. Details of the seminar recently held in Egypt are available on the Internet at: www.fao.org/news/global/locusts/0202cont/CPhome.htm

Desert Locust research award. The FAO Commission for Controlling the Desert Locust in the Central Region (CRC) is pleased to announce a cash award for outstanding research on Desert Locust. For more details, please contact the CRC Office in Cairo (munir.butrous@fao.org).

Desert Locust Control Diploma. The Graduate College of the University of Khartoum is offering a one year post-graduate diploma course in Desert Locust Control that is expected to start in August 2002. Applications should be sent before the first week of June to: Registrar of the Graduate College, University of Khartoum, POB 321, Khartoum, Sudan. For more details: Selbashir@hotmail.com

No. 284

DESERT LOCUST BULLETIN

Upcoming events. The following are scheduled:

- **EMPRES/CR.** ULV sprayer evaluation workshop, Cairo (Egypt), 23-25 September
- **EMPRES/WR.** DGPS regional workshop, Nouakchott (Mauritania), 5-10 October
- **EMPRES/CR.** Training of Trainers workshop, Oman, 7-17 October
- **EMPRES/CR.** 10th Liaison officers meeting, Jeddah (Saudi Arabia), 27-31 October
- **EMPRES/DLCO-EA/CRC.** 2nd Joint meeting, Cairo (Egypt), 5-6 November
- **EMPRES/WR.** 1st Liaison officers meeting, Niamey (Niger), 15-20 December
- **SW Asia Commission.** 23rd Session, Islamabad (Pakistan), 15-19 December

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

- 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

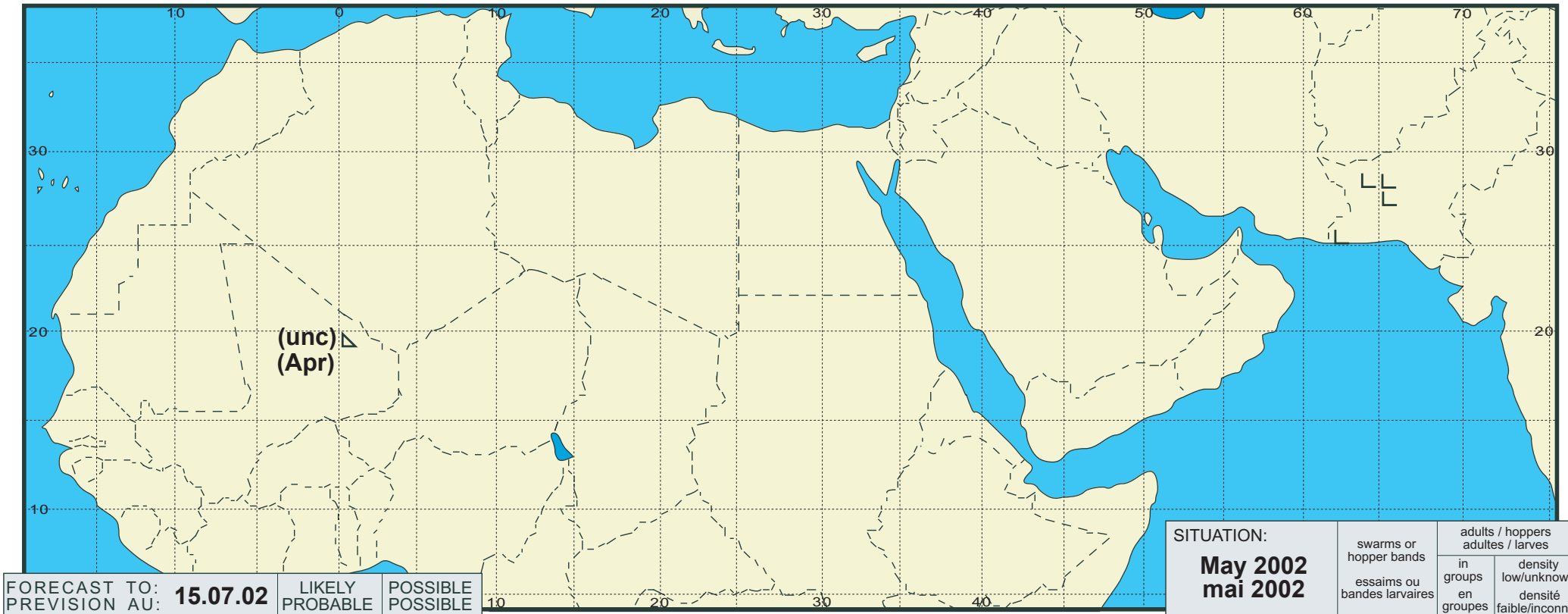
- period without widespread and heavy infestations by swarms.

REMISSION

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

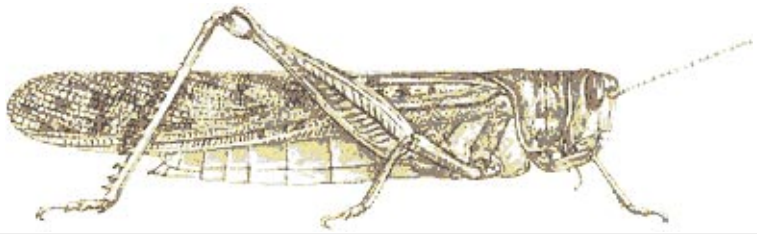
Desert Locust Summary
Criquet pèlerin - Situation résumée

284



FORECAST TO: PREVISION AU: **15.07.02**	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: **May 2002 mai 2002**	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. 285

(2 July 2002)

General Situation during June 2002
Forecast until mid-August 2002

The Desert Locust situation remained calm during June. A small infestation of hoppers and adults was treated in Morocco and only a few individual adults were reported on the Red Sea coastal plains in Saudi Arabia and along the Indo-Pakistan border. Summer rains began to fall in the southern parts of the Sahel in West Africa and Sudan. Small-scale breeding is expected to occur in those areas that receive additional rainfall during the forecast period. No significant developments are likely.

Western Region. A total of 20 ha of hoppers and adults were treated in southeastern **Morocco** during June. These probably originated from local breeding during the first three weeks of May by adults that may have come from northern Mali where there were unconfirmed reports of important populations during March and April. As conditions are rapidly drying out in Morocco, no significant developments are expected. Elsewhere, no locusts were reported and no surveys were conducted. Summer rains have recently started in the southern part of the Sahel but conditions are generally still dry and only starting to become green in some places. Small-scale breeding is expected to occur during the forecast period in southern **Mauritania**, northern **Mali** and **Niger** as the rains increase in these areas.

Central Region. No locusts were reported in the region during June. Summer rains started in the southern part of the locust breeding area in the interior of **Sudan** where conditions are improving and small-scale breeding is expected to occur during the forecast period. Good rains fell in eastern **Ethiopia**, northwestern **Somalia** and **Oman** where vegetation is green in some places but breeding is unlikely to occur because there are few, if any, locusts to take advantage of the conditions.

Eastern Region. Locust numbers declined in the spring breeding areas in western **Pakistan** and isolated adults appeared in the summer breeding areas along the Indo-Pakistan border. Similar numbers may be present in adjacent areas of Rajasthan, **India**, where breeding conditions are favourable. Small-scale breeding is expected to occur in both areas with the onset of the monsoon rains but no significant developments are likely.

The FAO Desert Locust 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 Locust 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

No. 285

DESERT LOCUST BULLETIN

Weather and Ecological Conditions in June 2002

Summer rainfall commenced during June in the southern part of the Sahel in West Africa and Sudan but conditions remained dry and unfavourable for breeding. Although monsoon rains have not yet started along the Indo-Pakistan border, breeding conditions are favourable in Rajasthan, India due to late May rainfall.

In **West Africa**, the Inter-Tropical Convergence Zone (ITCZ) continued to move northwards during June, oscillating between 15-20N. At times, it temporarily surged as far north as 22N over northern Mali, Niger and Chad. Consequently, the first summer rains fell in the southern part of the Sahel. In Mauritania, light rain fell in areas of the south and southeast. In Mali, light rain was reported in the west and central parts of the country as well from the Adrar des Iforas to the Algerian border. In Niger, light rain fell in some areas of Tamesna and the southern and western parts of Air. In Chad, good rains fell along the northern edge of Lake Chad. With the exception of small localised patches of annual vegetation in parts of central Mauritania (southwest Tagant near El Khatt and Tamassoumit), northern Mali (Adrar des Iforas, Timetrine, Bouressa Basin) and Niger (interdunal areas in Tamesna), ecological conditions are still dry and only starting to become green in some areas. More rain is needed before they become suitable for locust breeding.

In **North-West Africa**, no significant rainfall was reported during June although light rains fell on the Algerian-Mali border at Bordj Bou Mokhtar on the 13-14th and again on the 23-24th. Some of the earlier rains may have extended further north into the central and southern Sahara in Algeria. Ecological conditions were reported to be dry or drying out throughout the region because of prevailing high temperatures.

In **Eastern Africa**, isolated showers were reported at times during June. In Sudan, rains fell over the southern portion of the summer breeding areas in Northern Darfur, Northern Kordofan and White Nile States during the first half of the month. Most of these were isolated light showers although widespread rains fell on the 12th. By the end of the month, rain-bearing clouds had reached as far north as El Fasher and El Obeid and green vegetation was present in Northern Kordofan up to about 1413N. Nevertheless, additional rainfall is required before conditions are favourable for locust breeding. During the first dekad of June, good rains fell in eastern Ethiopia where Jijiga reported 36 mm and Dire Dawa 15 mm. Some of these rains extended into adjacent areas of northwestern Somalia where light rains were reported between Hargeisa and Boroma and vegetation was green. By mid month, the short rains season (Belg) had come to an end in Ethiopia.

In the **Near East**, no significant rainfall was reported during June except in Oman. Widespread light to moderate showers fell on the 9-14th in coastal (Batinah) and interior (Dakhliya, Dhahira, and Sharkiya) areas of northern Oman where there were a few areas of green or greening vegetation from the rains that fell in May. In southern Oman, the monsoon (Khareef) season began on the Salalah coastal plains and Dhofar Hills. Light rains may have also fallen on the southern Red Sea coastal plains in Yemen on 1 June. Dry, hot and unfavourable conditions were reported in the interior and coastal areas of Saudi Arabia and Yemen.

In **South-West Asia**, there was little indication that the monsoon had reached the summer breeding areas along the Indo-Pakistan border in June despite early rains that fell in late May throughout Rajasthan, India. Nevertheless, conditions were reported to be favourable for breeding in Rajasthan by mid June. At the end of the month, significant cloud activity was present over the Tharparkar Desert in southeastern Pakistan and adjacent areas of Rajasthan, India where good rains may have fallen. Dry conditions were reported in the spring breeding areas of western Pakistan and southeastern Iran.

Area Treated

Morocco 20 ha (23-24 June)

Desert Locust Situation and Forecast

(see also the summary on page 1)

WEST AFRICA

Mauritania

• **SITUATION**

No locusts were reported and no surveys were carried out during the second half of May and first half

of June. No reports were received for the second half of June.

• **Forecast**

Low numbers of adults are likely to be present in the summer breeding areas of the two Hodhs, Tagant, Trarza and northern Brakna where small-scale breeding will occur during the forecast period. No significant developments are likely.

Mali

• **Situation**

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

• **Forecast**

Isolated adults may be present and will persist in parts of Timetrine and the Adrar des Iforas where vegetation remains green. Small-scale breeding will commence with the onset of the summer rains. No significant developments are likely.

Niger

• **Situation**

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

• **Forecast**

Isolated adults are likely to be present in a few places of Tamesna and near irrigated areas in Arlit. Small-scale breeding will commence with the onset of the summer rains. No significant developments are likely.

Chad

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Senegal

• **Situation**

No locusts were reported during June.

• **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**

Small infestations of fourth and fifth instar solitarious hoppers and fledglings at densities of up to 800 per ha were concentrated at three locations in Oued Draa between 2839N/0853W and 2923N/0725W during June. Ground control operations were carried out on the 23-24th in one of these areas where densities were 1-2 locusts per m^2, treating 15 ha at Ksar Chair (2908N/0758W) and 5 ha at Boulaadam (2907N/0802W).

• **Forecast**

Locust numbers will decline in Oued Draa and no significant developments are likely.

Libyan Arab Jamahiriya

• **Situation**

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

• **Forecast**

No significant developments are likely.

Tunisia

• **Situation**

No locusts were reported during June.

• **Forecast**

No significant developments are likely.

EASTERN AFRICA

Sudan

• **Situation**

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

• **Forecast**

Isolated adults are likely to present in Northern Kordofan, Northern Darfur and White Nile States where small-scale breeding will occur during the forecast period. No significant developments are likely.

Eritrea

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Somalia

• **Situation**

No locusts were seen during surveys on the

northwestern escarpment between Hargeisa and Boroma on 3-5 June.

• **Forecast**

No significant developments are likely.

Ethiopia

• **Situation**

No locusts were seen during surveys carried out near Dire Dawa and Jijiga on 13-18 June.

• **Forecast**

Although conditions may be favourable for breeding, the likelihood that locusts are present is very low and, consequently, no significant developments are expected.

Djibouti

• **Situation**

No locusts were reported during surveys near the Somali border between Holhol (1118N/4255E) and Ali Sabieh (1110N/4238E) during the first half of June.

• **Forecast**

No significant developments are likely.

Kenya, Tanzania and Uganda

• **Forecast**

No significant developments are likely.

NEAR EAST

Saudi Arabia

• **Situation**

Two solitary adults were seen near Lith (2010N/4015E) on 3 June. Elsewhere, no locusts were reported.

• **Forecast**

No significant developments are likely.

Yemen

• **Situation**

No locusts were seen along the Aden coastal plains on 30-31 May or in the interior desert between Wadi Hadhramaut and Marib on 8-10 June.

• **Forecast**

No significant developments are likely.

Egypt

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Kuwait

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Oman

• **Situation**

No locusts were reported in Musandam, Batinah, Dakhliya, Dhahira, and Sharkiya regions in the north during 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 locusts were reported in Kerman province on 23-24 June.

• **Forecast**

No significant developments are likely.

Pakistan

• **Situation**

During the second half of May, individual mature locust adults were seen in Baluchistan on the coast near Pasni at Rumra (2526N/6341E) and in the interior near Kharan at Naro (2822N/6532E) on 18 and 25 May respectively.

During the first half of June, individual immature and mature adults were first seen at three places in the summer breeding areas at Islamkot (2437N/7014E) in Tharparkar Desert, and at Sadewala (2753N/7056E) and Fazilwala (2755N/7058E) in Cholistan. A mature adult was also reported in Las Bela at Kandewari (2532N/6608E).

• **Forecast**

Low numbers of adults will persist in Tharparkar and Cholistan deserts and breed on a small scale with the onset of the monsoon rains.

India

• **SITUATION**

No locusts were reported during the second half of May and first half of June.

• **FORECAST**

Low numbers of adults are likely to be present in a few areas of Rajasthan where small-scale breeding will commence with the onset of the monsoon rains. No significant developments are likely.

Afghanistan

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Other Locusts

Afghanistan. A mechanical and chemical emergency control campaign was organized against serious infestations of Moroccan Locust (*Dociostaurus maroccanus*) in Qunduz, Baghlan, Samangan, Balkh and Sar-i-Pol provinces in northern Afghanistan. Nearly 238,000 ha had been treated by mid June. Although some crop damage was reported, overall losses are not expected to exceed about seven percent. Given that widespread laying has already occurred in most areas, planning is underway for a well prepared preventive control campaign in 2003. FAO story:
www.fao.org/english/newsroom/news/2002/5000-en.html

Tanzania. An estimated 200 km^2 of Red Locust (*Nomadacris septemfasciata*) swarms, at densities of up to 50 or more locusts/m^2, were present in the Iku-Katavi, Wembere and Malagarasi outbreak areas in Western Tanzania during June. Aerial control operations against swarms are planned to commence by the end of July.

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

Desert Locust Guidelines. The revised edition in English was issued on 24 September 2001 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: www.fao.org/news/2001/010601-e.htm

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- **EMPRES/WR.** Improved locust control application techniques regional workshop, Nouakchott (Mauritania), 5-10 October
- **EMPRES/CR.** Training of trainers workshop, Oman, 7-17 October

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- **EMPRES/WR.** 1st Liaison officers meeting, Niamey (Niger), 15-19 December (tentative)
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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
- 50+ mm of rainfall.

OTHER REPORTING TERMS

BREEDING
- the process of reproduction from copulation to fledging.

SUMMER RAINS AND BREEDING
- July - September/October

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- October - January/February

SPRING RAINS AND BREEDING
- February - June/July

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- 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.

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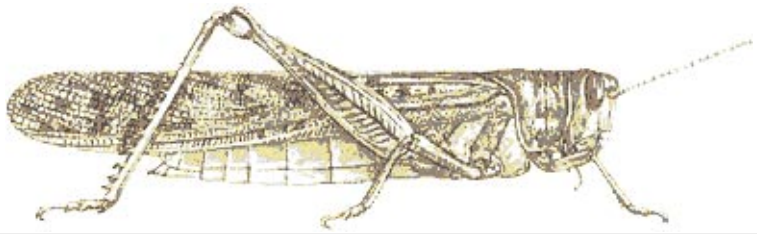
Desert Locust Summary
Criquet pèlerin - Situation résumée

285

FORECAST TO: PREVISION AU: **15.08.02**	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: **June 2002 juin 2002**	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. 286

(1 Aug 2002)

General Situation during July 2002
Forecast until mid-September 2002

The Desert Locust situation remained calm during July. Rainfall was generally poor in the summer breeding areas of the Sahel in West Africa and along the Indo-Pakistan border. Only a few locusts were present in Pakistan. Good rains fell in Sudan where only isolated adults were seen in the summer breeding areas. Isolated adults were also reported in the Yemen interior. Although small-scale breeding is expected to occur during the forecast period in Sudan and in West Africa as well as along the Indo-Pakistan border if the rains improve, locust numbers will remain below threatening levels and no significant developments are likely.

Western Region. No locusts were reported in the region during July although low numbers of adults are probably present in a few areas of southeastern **Mauritania** and in northern **Mali** that received some rainfall. In late June, an additional 250 ha of late instar hoppers and fledglings were treated in southeastern **Morocco**. Small-scale breeding is expected to occur during the forecast period in southern Mauritania, northern Mali and **Niger** as the rains increase in these areas.

Central Region. A few individual locust adults were reported in the summer breeding areas in **Sudan** and **Yemen** during July. Good rains fell in the Sudan interior, especially in the Eastern Region, and ecological conditions are improving in many of the summer breeding areas in Northern Kordofan and Northern Darfur. Good rains also fell in northern **Oman** but there are few, if any, locusts to take advantage of these. Conditions are likely to be favourable for limited breeding on the southern Red Sea coast of **Saudi Arabia**. Light rains fell on the escarpment of northwestern **Somalia** and eastern **Ethiopia** but are not sufficient to create favourable conditions.

Eastern Region. Only very low numbers of locusts were present in the summer breeding areas along the Indo-Pakistan border in **Pakistan** because of poor rainfall associated with the monsoon. Similar numbers are probably present in adjacent areas of Rajasthan, **India**, where breeding conditions are more favourable. Small-scale breeding is expected to occur during the forecast period in both areas but no significant developments are likely.

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No. 286

DESERT LOCUST BULLETIN

Weather and Ecological Conditions in July 2002

Conditions remain drier than normal in most of the summer breeding areas in West Africa and along the Indo-Pakistan border because of erratic and poor rainfall. Good rains fell in Sudan where breeding conditions are likely to be better.

In **West Africa**, the Inter-Tropical Convergence Zone (ITCZ) oscillated between 10-17N during July. Temporary northerly surges to 26N over northern Mali and 22N over northern Niger that lasted for a day occurred several times during the month and caused showers to fall in northern Mali in the Adrar des Iforas and Timetrine, and in Air, Niger. Apart from these rare instances, very little rain fell in the summer breeding areas in the Sahel and conditions remained hot and dry except in the above areas where vegetation was becoming green. In Mauritania, light rain fell during the first dekad of July in Hodh El Chargui and Hodh El Gharbi and unusually heavy rains fell at Nema (90 mm) at the end of the month. Breeding conditions are probably favourable in the southeast but more rain is needed before they become suitable in the southern and southwestern Mauritania. In Chad, light rain fell in the northeast along the Sudan border but conditions are likely to be unfavourable unless more rain occurs.

In **North-West Africa**, no significant rainfall was reported during July south of the Atlas Mountains where conditions remained hot and dry. At the end of the month, moderate rains fell in the extreme south of Algeria along the Malian border at Bordj Moktar.

In **Eastern Africa**, unusually dry conditions prevailed in most areas except in parts of Sudan. Significant clouds were present in the Eastern Region near Kassala during many days in July and light rain was reported at intervals throughout the month. Clouds and light rains occurred at times in parts of Northern Kordofan and Northern Darfur. Breeding conditions are expected to be favourable near Kassala and improving in many areas west of the Nile River to the Chad border, mainly in the White Nile Province and along Wadi Milk. On the Red Sea coast, light rain fell on the plains south of Suakin, Sudan and clouds were present late in the month over the southern plains in Eritrea. In Ethiopia, light rainfall was reported near Dire Dawa where conditions were becoming dry. In northwestern Somalia, light rains associated with the Kharan season fell near Hargeisa and surrounding areas on the escarpment.

In the **Near East**, no significant rainfall was reported during July except in Oman. During the second and third weeks of the month, light to heavy showers fell over a widespread area in the interior of northern Oman, stretching from Buraimi on the UAE border to the Sharkiya region in the northeast. Even though this area has received good rainfall every month since March, breeding conditions are less favourable due to prevailing high temperatures. Conditions are likely to be more favourable for breeding along the southern coastal plains of the Red Sea near Jizan, Saudi Arabia where moderate rains fell in late June. Significant clouds were present over the Red Sea coastal plains in Yemen during the last week of July. In the interior of Yemen, dry conditions persisted except between Ataq and Nisab where green vegetation was reported.

In **South-West Asia**, no significant rainfall was reported in the summer breeding areas along the Indo-Pakistan border during the first half of July. Consequently, breeding conditions were less favourable than normal except in some places in Rajasthan, India where good rains fell during the second half of June.

Area Treated

India	42 ha	(1-15 July, mixed with grasshoppers)
Morocco	251 ha	(26-27 June)

Desert Locust Situation and Forecast

(see also the summary on page 1)

WEST AFRICA

Mauritania

• **SITUATION**

No locusts were reported and no surveys were carried out during the second half of June and first half of July.

• **FORECAST**

Low numbers of adults are likely to be present in the summer breeding areas of the two Hodhs where small-scale breeding could be in progress in areas of recent rainfall. Additional adults may appear and breed in Tagant, Trarza and northern Brakna if

rains fall during the forecast period. No significant developments are likely.

Mali

• **Situation**

Although no surveys were carried out during July, there were unconfirmed reports of scattered adults in the Adrar des Iforas on the 12th at Adrar Namel and on the 17th at Tin Aouanene.

• **Forecast**

Scattered adults are likely to be present and breeding in areas of recent rainfall and the Adrar des Iforas. Small-scale breeding is expected to continue during the forecast period and locust numbers will gradually increase but remain below threatening levels.

Niger

• **Situation**

No locusts were seen during surveys carried out in the Air during July.

• **Forecast**

Isolated adults are likely to be present in a few parts of Tamesna and in western Air. Small-scale breeding is expected to occur during the forecast period and locust numbers will gradually increase but remain below threatening levels. No significant developments are likely.

Chad

• **Situation**

No reports received.

• **Forecast**

Isolated adults may be present in areas of recent rainfall in the northeast near Fada. Small-scale breeding could occur in these places if more rain falls during the forecast period. 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 reports received.

• **Forecast**

No significant developments are likely.

Morocco

• **Situation**

A late report indicated that an additional 251 ha of fifth instar hoppers and fledglings were treated on 26-27 June in the same area in Oued Draa where control operations were carried out on 23-24 June.

• **Forecast**

No significant developments are likely.

Libyan Arab Jamahiriya

• **Situation**

No locusts were reported during July.

• **Forecast**

No significant developments are likely.

Tunisia

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

EASTERN AFRICA

Sudan

• **Situation**

A single immature adult was seen in White Nile Province at Shaa El Din on 22 July. No other locusts were seen during surveys carried out in Northern Kordofan and White Nile provinces on the 23-27th.

• **Forecast**

Isolated adults are likely to present in Northern Kordofan, Northern Darfur and White Nile States where small-scale breeding will occur during the forecast period. No significant developments are likely.

Eritrea

• **Situation**

No locusts were reported up to mid July.

• **Forecast**

No significant developments are likely.

Somalia

• **Situation**

No locusts were seen during surveys on the escarpment west of Hargeisa (0931N/4402E) on 9-11 July. A small group of fourth instar hoppers was seen at the Ministry of Agriculture nursery in Hargeisa on the 15th.

• **Forecast**
No significant developments are likely.

Ethiopia
• **Situation**
No locusts were seen during surveys carried out near Dire Dawa on 16-18 July.
• **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.
• **Forecast**
A few isolated adults may be present and breeding near Jizan where good rains fell in late June. No significant developments are likely.

Yemen
• **Situation**
No locusts were seen during surveys in the interior of Hadhramaut and Shabwah on 23-25 July except for a single mature adult near Ataq at Thaouban (1436N/4631E) on the 23rd.
• **Forecast**
No significant developments are likely.

Egypt
• **Situation**
No reports received.
• **Forecast**
No significant developments are likely.

Kuwait
• **Situation**
No reports received.
• **Forecast**
No significant developments are likely.

Oman
• **Situation**
No locusts were reported in Musandam, Dakhliya and Dhahira regions in the north during 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 reported in Kerman and Hormozgan provinces on 6-7 July.
• **Forecast**
No significant developments are likely.

Pakistan
• **Situation**
During the second half of June, a few isolated solitarious mature adults, up to 4 per ha, persisted in the summer breeding areas at seven places along the Indo-Pakistan border in Cholistan and Tharparkar deserts and at one place in the Las Bela valley west of Karachi.

During the first half of July, the same populations were reported at eight places in Cholistan and Tharparkar.
• **Forecast**
Locusts will persist in Tharparkar and Cholistan deserts and breed on a small scale in areas of recent rainfall. Consequently, numbers will increase slightly but remain well below threatening levels.

India
• **Situation**
No locusts were reported during the second half of June.

During the first half of July, grasshoppers mixed with a few Desert Locust were present on crops at two locations in Rajasthan near Jalore at Sanchore (2445N/7146E) and Bhinmal (2500N/7215E) and at one location in Gujarat near Palanpur at Tharad (2424N/7138E). So far, 42 ha have been treated.

• **Forecast**

Scattered adults are likely to be present and breeding on a small scale in a few areas of Rajasthan where monsoon rains have fallen. Consequently, numbers will increase slightly but remain well below threatening levels.

Afghanistan

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Other Locusts

Afghanistan. The control campaign against a major outbreak of Moroccan Locust (*Dociostaurus maroccanus*) has been completed reasonably successfully given the difficult working conditions. Surveys are currently underway to establish where laying is occurring or has occurred in order to plan for early reaction in the spring of 2003. An international consultant retuns in August 2002 for two months to carry out training and to assist with planning next year's control campaign.

Tanzania. Funds have been approved by FAO's Technical Cooperation Programme and by Norway to carry out an emergency control campaign against Red Locust (*Nomadacris septemfasciata*) swarms in three outbreak areas. This will be followed up with hopper control in February/March 2003 including a large-scale application of *Metarhizium*.

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

Desert Locust Guidelines. The revised edition in English was issued on 24 September 2001 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: 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 (www.fao.org/news/global/locusts/pubslist.htm). New additions are:

- Report of the 23rd session of the NW Africa Commission (CLCPANO) in French and Arabic
- Report of the 36th session of the DLCC recently held in Rome (English and French; Arabic upon request)
- FAO Desert Locust Guidelines, revised edition, 2001 (English)
- FAO Spray Monitoring Form (English)

Desert Locust research award. The FAO Commission for Controlling the Desert Locust in the Central Region (CRC) is pleased to announce a cash award for outstanding research on Desert Locust. For more details, please contact the CRC Office in Cairo (munir.butrous@fao.org).

2002 events. The following are scheduled:

- **CLCPRO.** First Session, FAO Rome, 18-20 September
- **EMPRES/CR.** ULV sprayer evaluation workshop, Cairo (Egypt), 23-25 September
- **EMPRES/WR.** Improved locust control application techniques regional workshop, Nouakchott (Mauritania), 5-10 October
- **EMPRES/CR.** Training of trainers workshop, Oman, 7-17 October
- **EMPRES/CR.** 10th Liaison Officers meeting, Jeddah (Saudi Arabia), 27-31 October
- **EMPRES/WR.** 1st Liaison Officers meeting, Niamey (Niger), 15-20 December
- **SW Asia Commission.** 23rd Session, Islamabad (Pakistan), 15-19 December

2003 events. The following are provisionally scheduled:

- **DLCC Technical Group.** FAO Rome, 24-26 February
- **EMPRES.** 6th Consultative Committee and Phase III Planning Workshop, Cairo (Egypt), 24-28 March
- **CRC.** 24th Session of the Executive Committee, Beirut (Lebanon), 10-15 April
- **CLCPANO.** 24th Session, Tripoli (Libya), 4-8 May
- **DLCC.** 37th Session, FAO Rome, 22-26 September

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

- 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

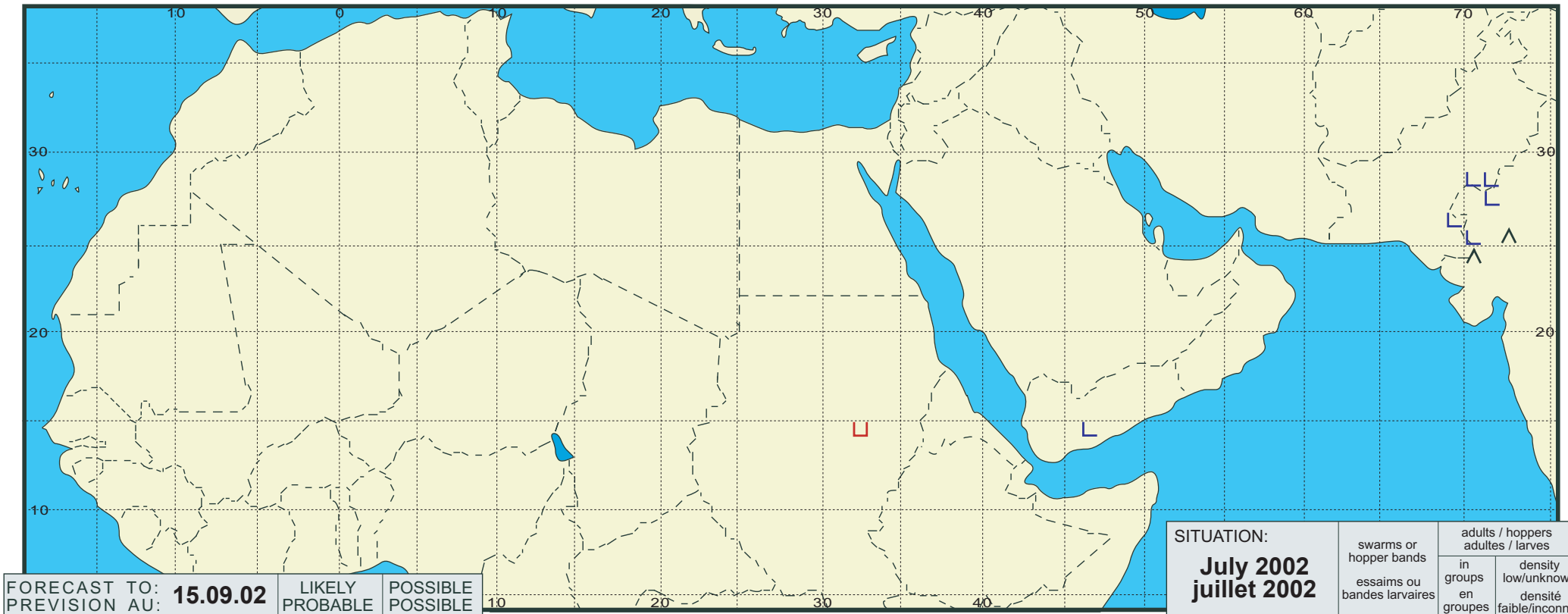
- period without widespread and heavy infestations by swarms.

REMISSION

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

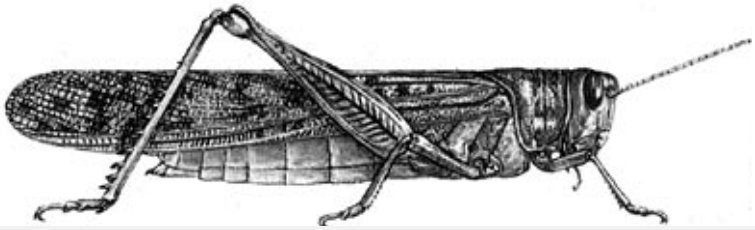
Desert Locust Summary
Criquet pèlerin - Situation résumée

286



FORECAST TO: PREVISION AU: **15.09.02**	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: **July 2002 juillet 2002**	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)	◘	◙	⌂



DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations **No. 287**

(5 Sep 2002)

General Situation during August 2002
Forecast until mid-October 2002

The Desert Locust situation continued to remain calm during August despite good rainfall and ecological conditions in the summer breeding areas of West Africa, Sudan and Yemen. Only low numbers of adults were reported in Mauritania and Niger. Isolated adults were present in the summer breeding areas in Pakistan but not in India due to unusually dry conditions. Although small-scale breeding is expected to occur in West Africa and Sudan during the forecast period, locust numbers will remain below threatening levels and no significant developments are likely. Breeding may commence on the Red Sea coast of Yemen and in adjacent areas of Saudi Arabia that received recent rainfall.

Western Region. Isolated adults were present in central and southern **Mauritania** and a few adults were reported in Tamesna, **Niger**. There was also an unconfirmed report of locusts in northern **Mali**. Although good rains fell during August and conditions are favourable throughout the Sahel, no breeding has been reported yet. Consequently, small-scale breeding is expected to occur in Mauritania and parts of northern Mali, Niger and perhaps in eastern **Chad**. By the end of the forecast period, low numbers of adults could start to appear in northwestern Mauritania. No significant developments are expected.

Central Region. Despite good rainfall and ecological conditions, no locusts were reported in the region except for a few adults on the southern coast of **Yemen**. Nevertheless, low numbers of locusts may be present in western and eastern **Sudan** where small-scale breeding could occur during the forecast period. Because of unusually heavy rainfall during August, breeding may also occur on the Red Sea coast of Yemen and in adjacent areas of Jizan, **Saudi Arabia** as well as in the interior of Yemen. Regular surveys are recommended in these areas. Light rain fell in places along the northern Red Sea coast of **Eritrea** and on the escarpment of northwestern **Somalia** and eastern **Ethiopia** but no locusts were reported.

Eastern Region. Unusually dry conditions prevailed in the summer breeding areas along the Indo-Pakistan border where only a few adults were present in **Pakistan**. Despite intensive survey efforts in **India**, no locusts have been reported. Consequently, few if any locusts are likely to move into Pakistan from the east. No significant developments are likely in the region.

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

No. 287

DESERT LOCUST BULLETIN

Weather & Ecological Conditions in August 2002

Good rains fell throughout the Sahel of West Africa and Sudan where conditions have become favourable for breeding. Conditions are improving along the Red Sea coast of southern Arabia where moderate to heavy rains occurred. Unusually dry conditions prevailed in the summer breeding areas along the Indo-Pakistan border.

In **West Africa**, the Inter-Tropical Convergence Zone (ITCZ) oscillated between 16-18N during the first half of August with periodic surges to 23-25N over northern Mali. During the second half of the month, it remained at 20N, occasionally reaching to 22-24N between Mauritania and Niger. Most of the rain was associated with these northward movements. Sufficient rain for breeding fell over a large portion of central and southern Mauritania, primarily in Hodhs Chargui and Gharbi, Assaba, Tagant (between Moudjeria and Tidjikja), and in parts of Brakna and southwestern Trarza. In the north, good rain fell during the first dekad in Tiris Zemmour between Bir Moghrein and El Hank. During the first and third dekads, lighter rain fell in parts of the northwest in Inchiri. In northern Mali, conditions are favourable for breeding in the central Adrar des Iforas where moderate rains fell at mid month and in the Tilemsi Valley where standing water was reported. Showers also fell in the northern Adrar des Iforas at Tilemsi and along the Algerian border as well as in the northern Tamesna. In Niger, breeding conditions were favourable in Tamesna and in central and southern Air where light to moderate rain fell during August. In Chad, heavy rain fell at times in the east near Abeche and Fada where conditions are expected to be favourable for breeding.

In **North-West Africa**, sporadic showers occurred south of the Atlas Mountains during August. In Morocco, light rain fell along the Atlantic coast between Tan-Tan and Sidi Ifni and in the Adrar Souttouf region of the extreme southwest during the first and third dekads. In Algeria, light rains fell mainly during the first half of the month in parts of the northern Sahara, in the west near Tindouf, in the southeast near the Hoggar Mountains and on the Malian border. Although conditions are expected to improve in the above areas, more rain is needed before they become favourable for breeding.

In **Eastern Africa**, good rains fell in the summer breeding areas of Sudan where conditions are favourable for breeding in Northern Darfur, Northern Kordofan, White Nile provinces and the eastern region between Kassala and Haiya. Some rain may have fallen in the northern parts of the breeding area near Wadi Howar and in the southern Baiyuda Desert where significant clouds were present at times. In Eritrea, localized moderate rains fell at mid month on the northern Red Sea coast where vegetation was becoming green in a few places and at the end of the month on the southern coastal plains. Vegetation was reported to be green in the western lowlands near Sudan. In Ethiopia, light rains fell near Dire Dawa and vegetation was green in surrounding areas. In northwestern Somalia, light rains associated with the Kharan season fell for the second consecutive month between Hargeisa and Boroma where conditions are favourable for breeding. In Djibouti, light showers fell in a few places on the northern coast of the Red Sea and in the interior.

In the **Near East**, moderate to heavy showers fell along the Red Sea coastal plains from Jizan, Saudi Arabia to Bait Al-Faqih, Yemen and light to moderate rains were reported in the interior desert in Yemen from the mouth of the Hadhramaut to Marib and Al Jawf during August. Breeding conditions are expected to be favourable in areas of recent rainfall along the Red Sea coast but less favourable in the interior where it was mainly dry except for a few places near Al Jawf. In Oman, light to moderate rains fell in parts of the northern interior and the Musandam Peninsula.

In **South-West Asia**, only a few light showers were reported in parts of the summer breeding area in Rajasthan, India during the first half of August. Consequently, breeding conditions continued to be less favourable than normal as most areas were dry except in Rajasthan between Jodhpur and Barmer and in the Cholistan Desert, Pakistan south of Bahawalpur.

Area Treated

No control operations were reported during August.

Desert Locust Situation and Forecast

(see also the summary on page 1)

WEST AFRICA

Mauritania

• **SITUATION**

During the second half of July, one solitarious adult was seen northwest of Moudjeria at 1815N/1256W.

During August, isolated mature adults were first seen near Aioun El Atrous (1702N/0941W) on the 6-15th. Thereafter, scattered adults were seen during the last dekad at several places in the same area and, to a lesser extent, near Nema (1632N/0712W), Tidjikja (1829N/1131W) and in the southwest near Rkiz (1658N/1514W). The largest infestation was seen north of Aioun where mature adults were present at a density of 50 locusts per ha over 8,000 ha.

• **FORECAST**

Small-scale breeding will occur during the forecast period causing a slight increase in locust numbers in the south and centre of the country. Hatching should commence from mid September onwards, suggesting that young adults could appear by the end of the forecast period and perhaps move towards Inchiri.

Mali

• **SITUATION**

Nomads reported adult populations in Timetrine at Assamalmat (1905N/0024W) on 17 August. No further details were available.

• **FORECAST**

Scattered adults are likely to be present and breeding in areas of recent rainfall in the Adrar des Iforas, Tilemsi, Timetrine and Tamesna. Small-scale breeding is expected to continue during the forecast period and locust numbers will gradually increase but remain below threatening levels.

Niger

• **SITUATION**

No locusts were seen during surveys carried out south of Agadez and in Tamesna from 26 July to 31 August except at one place, Anes Baraka (1831N/0552E), near In Abangharit where solitarious immature adults were present at densities of 5-10 locusts per ha on the 21st.

• **FORECAST**

Scattered adults will persist and breed on a small-scale in Tamesna and perhaps in western Air. Although locust numbers will increase slightly as a result, no significant developments are likely.

Chad

• **SITUATION**

No reports received.

• **FORECAST**

Scattered adults may be present and breeding on a small-scale in areas of recent rainfall in the east and northeast between Abeche and Fada.

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 August.

• **FORECAST**

No significant developments are likely.

Morocco

• **SITUATION**

No locusts were reported during August.

• **FORECAST**

Low numbers of locusts could appear by the end of the forecast period in areas of recent rainfall in the Adrar Souttouf region near the Mauritanian border.

Libyan Arab Jamahiriya

• **SITUATION**

No locusts were reported during August.

• **FORECAST**

No significant developments are likely.

Tunisia

• **SITUATION**

No locusts were reported during August.

• **FORECAST**

No significant developments are likely.

EASTERN AFRICA

Sudan

• **SITUATION**

No locusts were seen during surveys carried out from 27 July to 27 August in the summer breeding

areas in Northern Darfur (north of El Fasher), Northern Kordofan (Er Rahad to Sodiri), White Nile (north of Ed Dueim), Nahr El Nile (Shendi) states and in the Eastern Region (Kassala to Haiya). On 12 August, there was an unconfirmed report of swarms near El Fasher but this is not likely to be Desert Locust; instead, it may be grasshoppers or perhaps Tree Locust.

• **Forecast**

Isolated adults are likely to present and breeding on a small-scale in Northern Darfur, Northern Kordofan, White Nile and Nahr El Nile States as well as in the Eastern Region north of Kassala. By the end of the forecast period, low numbers of adults may appear on the Red Sea coastal plains.

Eritrea

• **Situation**

No locusts were seen during surveys carried out on the northern coastal plains of the Red Sea on 16-18 August.

• **Forecast**

Small-scale breeding may be in progress in parts of the western lowlands along Khor Barka and in adjacent areas. By the end of the forecast period, isolated adults may appear on the Red Sea coastal plains and start to breed if sufficient rain has fallen by then.

Somalia

• **Situation**

No locusts were seen during surveys on the escarpment between Hargeisa (0931N/4402E) and Erigavo (1040N/4720E) on 8-12 August.

• **Forecast**

No significant developments are likely.

Ethiopia

• **Situation**

No locusts were seen during surveys carried out near Dire Dawa on 17-19 August.

• **Forecast**

No significant developments are likely.

Djibouti

• **Situation**

No surveys were conducted and no locusts were reported during August.

• **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 in areas of recent rainfall near Jizan where small-scale breeding could occur during the forecast period.

Yemen

• **Situation**

Isolated adults were seen on 23 August at one location (1249N/4414E) on the coastal plains west of Aden. No locusts were seen during surveys in the interior desert between Al Hazm (1609N/4447E) and Bayhan (1452N/4545E) on 1-2 August and during the rest of the month on the coastal plains of the Red Sea and the Gulf of Aden.

• **Forecast**

Scattered adults may be present in areas of recent rainfall on the Red Sea coast and in the interior. Small-scale breeding could occur during the forecast period in both these areas.

Egypt

• **Situation**

In the Western Desert, ground teams treated 400 ha of African Migratory Locust mixed with a few Desert Locust hoppers and adults in cropping areas at Sharq Oweinat (2240N/2845E) on 23-26 July.

• **Forecast**

No significant developments are likely.

Kuwait

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Oman

• **Situation**

No locusts were reported in Musandam, Dakhliya and Dhahira regions in the north during 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 reported in Kerman and Hormozgan provinces during August.

• **Forecast**

No significant developments are likely.

Pakistan

• **Situation**

During the second half of July, isolated immature and mature adults, at densities of up to six locusts per ha, were present at eight places in the Cholistan Desert along the Indian border east of Rahimyar Khan and Bahawalpur, at two locations in the Tharparkar Desert and at two places near Las Bela west of Karachi.

During the first half of August, the same populations persisted in Cholistan and Tharparkar, and there was no significant change in the locust situation.

• **Forecast**

Locust numbers will decline in Tharparkar and Cholistan and, unless further rains fall, the situation should be calm by the end of the forecast period. There is no evidence to suggest that significant numbers of locusts will appear from the east.

India

• **Situation**

No locusts were seen during surveys carried out in the summer breeding areas of Rajasthan and Gujarat from 15 July to the end of August.

• **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 all locust situation reports are sent to FAO HQ by the 28th 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 e-mail. After each survey or control operation, affected countries should send completed *FAO Desert Locust Survey and Control Forms* with a brief interpretation of the results by e-mail to eclo@fao.org.

Desert Locust Guidelines. The revised edition in English was issued on 24 September 2001 and is now available from FAO. Please contact the Locust Group for more information.

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2002 events. The following are scheduled:

- **CLCPRO.** First Session, FAO Rome, 18-20 September
- **EMPRES/CR.** ULV sprayer evaluation workshop, Cairo (Egypt), 23-25 September
- **EMPRES/WR.** Improved locust control application techniques regional workshop, Nouakchott (Mauritania), 5-10 October
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- **DLCC Technical Group.** FAO Rome, 24-26 February
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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

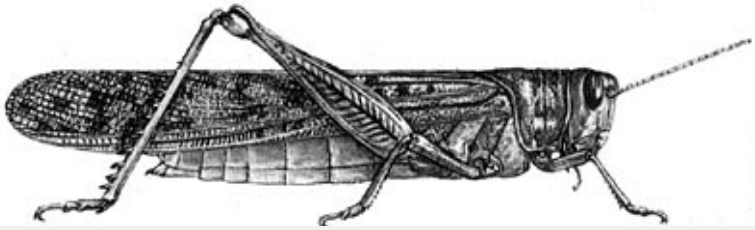
- period of deep recession marked by the complete absence of gregarious populations.

Desert Locust Summary
Criquet pèlerin - Situation résumée

287

FORECAST TO: PREVISION AU: **15.10.02**	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: **August 2002 août 2002**	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)	◘	◙	◒



DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations **No. 288**

(3 Oct 2002)

General Situation during September 2002
Forecast until mid-November 2002

The Desert Locust situation remained calm during September. Despite good rainfall and ecological conditions in the summer breeding areas of West Africa, Sudan and India, only a few hoppers were reported in Mauritania and Niger, and insignificant numbers of adults were present in northern Mali and eastern Pakistan. Local breeding occurred in southern Yemen resulting in small hopper groups. Unusually heavy rains fell along the southern Red Sea coastal plains that should lead to small-scale breeding during the forecast period.

Western Region. Isolated adults and a few solitarious hoppers were present in parts of southern **Mauritania** and western **Niger**. Scattered adults were also reported in northern **Mali**. The good rains that fell in many of these areas is likely to allow breeding to continue on a small-scale during the forecast period. Consequently, locust numbers are likely to increase but remain below threatening levels. Low numbers of locusts are likely to appear in western and northwestern Mauritania. No locusts were reported elsewhere in the region and no significant developments are expected.

Central Region. Results are awaited from surveys that are in progress in western and central **Sudan** where good rains fell during September in the summer breeding areas. Small-scale breeding has been reported from a traditional outbreak area on the southern coast of **Yemen** near Aden where groups of hoppers and fledglings were seen at one location while breeding was reported in another area nearby. Unusually heavy rain fell in the winter breeding areas along the southern coast of **Eritrea**, **Djibouti** and along the Red Sea coast of Yemen and adjacent areas of **Saudi Arabia**. Although no locusts were reported in these areas, conditions will improve to allow the possibility of small-scale breeding during the forecast period. No locusts were reported elsewhere in the region.

Eastern Region. Although breeding conditions are reported to be more favourable in Rajasthan, **India** than in adjacent summer breeding areas in **Pakistan**, only isolated adults were seen in the latter area. No significant developments are likely in the region.

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

No. 288

DESERT LOCUST BULLETIN

Weather & Ecological Conditions in September 2002

Good rains fell in parts of the Sahel of West Africa and Sudan where conditions continued to be favourable for breeding. Unusually heavy rains fell along both sides of the southern Red Sea where conditions are already favourable in many areas. In the summer breeding areas along the Indo-Pakistan border, conditions were more favourable in India than in Pakistan.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) oscillated between 10N and 25N during September with periodic surges to 22N over northern Mali on 11 and 18 September and 25N over southern Algeria on the 8th and 23rd. The unusually large fluctuation and the northward surges were associated with several depressions over the Mediterranean and the central Sahara. Consequently, good rains fell in many of the summer breeding areas between Mauritania and Chad. In Mauritania, rains were sporadic in southern areas during the first dekad of September but improved during the remainder of the month. In northern Mauritania, unusually good rains fell at Akjoujt (44 mm) and isolated showers are likely to have occurred near Bir Moghrein and in El Hank. Although conditions remain favourable for breeding in the south (Trarza, Brakna, the two Hodhs), some areas were starting to dry out by the end of the month. In northern Mali, moderate rains fell at times in Timetrine, the Adrar des Iforas and Tamesna where conditions continued to be favourable for breeding. In Niger, favourable breeding conditions persisted in southern and central Tamesna where good rains fell during the second half of the month and parts of southern Air. In Chad, good rains fell in the east near Abeche that will allow breeding conditions to remain favourable. Lighter rains fell in the northeast near Fada where green vegetation is present in the Ennedi Hills. In southern Algeria, light rains fell a few times, associated with northward surges of the ITCZ and depressions over the Mediterranean. Consequently, breeding conditions were improving in wadis and run-off areas near the Hoggar Mountains. In southern and southeastern Morocco, vegetation was reportedly becoming dry and conditions unfavourable for breeding because of a lack of rainfall.

In the **Central Region**, good rains fell for the second consecutive month in the summer breeding areas of central and western Sudan and in the western lowlands of Eritrea. Consequently, breeding conditions continued to be favourable in Northern Darfur, Northern Kordofan and White Nile provinces in Sudan and along Khor Barka in western Eritrea. Light rains fell in eastern Ethiopia and in some places on the escarpment in northwestern Somalia. Significant cloud activity was seen for the second month in a row along the Red Sea coast from Massawa, Eritrea to Djibouti. Moderate rains were reported in coastal and interior areas of Djibouti city and additional rainfall may have occurred in adjacent areas of the southern coast of Eritrea. Breeding conditions are likely to be improving in all of these areas. Moderate to heavy rains fell along the Red Sea coastal plains between Qunfidah, Saudi Arabia and Bait Al-Faqih, Yemen. In many of these places, good rains have fallen throughout most of the summer, suggesting that conditions are favourable in the winter breeding areas earlier than in most years. Conditions were also favourable for breeding on the southern coastal plains of Yemen near Aden where heavy showers fell in early September. Isolated light to moderate rainfall was reported in the interior of Yemen, extending to the edge of the Empty Quarter at Sharurah, Saudi Arabia where 37 mm were reported in early September. In northern Oman, light to moderate rainfall was reported at a few places in the interior.

In the **Eastern Region**, light to moderate rains fell during the first half of September in Barmer, Jaisalmer and Jodhpur areas in Rajasthan, India where conditions were reported to be favourable for breeding. In Pakistan, light rains fell in Cholistan at Bahawalpur and in the Tharparkar Desert at Chhor. Breeding conditions were said to be less favourable than in India.

Area Treated

No control operations were reported in Septmber.

Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• **SITUATION**

During September, isolated immature and mature adults were present at several places near Oualata

(1715N/0655W), north of Aioun El Atrous (1702N/0941W) and, to a lesser extent, between Tidjikja (1829N/1131W) and Moudjeria (1751N/1228W). Small-scale breeding was in progress near Aioun and Oualata where isolated second to fifth instar hoppers and copulating adults were seen from the second week of September onwards. No locusts were seen during surveys in the southwest near Rkiz.

• **Forecast**

Locust numbers will increase slightly as small-scale breeding continues during the forecast period in the south and centre of the country. Scattered adults are likely to appear in the southwest as well as in Inchiri where breeding could occur in areas of recent rainfall.

Mali

• **Situation**

During September, nomads reported seeing scattered immature and mature adults in the Adrar des Iforas at Tahalt (1912N/0052E), in the Timetrine at Terchichout (1922N/0010W) and Aril (1910N/0005W), and near Gao at In Azar (1627N/0022E).

• **Forecast**

Scattered adults are likely to persist in areas of recent rainfall in the Adrar des Iforas, Tilemsi, Timetrine and Tamesna. Small-scale breeding is expected to continue during the forecast period and locust numbers will gradually increase but remain below threatening levels.

Niger

• **Situation**

No locusts were seen during surveys carried out south of Agadez and in Tamesna from 26 July to 31 August except at one place, Anes Baraka (1831N/0552E), near In Abangharit where solitarious immature adults were present at densities of 5-10 locusts per ha on the 21st.

Small-scale breeding occurred during September northwest of Agadez where isolated first to third instar hoppers were seen at Aouguessess (1744N0715E) on the 12th. Isolated immature adults were present in Tamesna at two locations west of In Abangharit (1754N/0559E) and at another two locations southeast of Agadez.

• **Forecast**

Scattered adults will persist and breed on a small-scale in Tamesna and in western Air. Although locust numbers will increase slightly as a result, no significant developments are likely.

Chad

• **Situation**

No reports received.

• **Forecast**

Scattered adults may be present and breeding on a small-scale in areas of recent rainfall in the east and northeast between Abeche and Fada and in adjacent areas of the Ennedi Hills.

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.

Algeria

• **Situation**

No locusts were reported during September.

• **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 locusts were reported during September.

• **Forecast**

No significant developments are likely.

CENTRAL REGION

Sudan

• **Situation**

No locusts were seen during surveys carried out on 5-7 September in the north near Atbara (1742N/3400E). Surveys are in progress in Northern Kordofan.

• **Forecast**

Scattered adults are likely to present and breeding on a small scale in Northern Darfur, Northern

Kordofan, White Nile and Nahr El Nile States as well as in the Eastern Region north of Kassala. During the forecast period, locust numbers should decline in the summer breeding areas while low numbers of adults may appear on the Red Sea coastal plains.

Eritrea

• **Situation**

No reports received.

• **Forecast**

Scattered adults may be present in parts of the western lowlands along Khor Barka and in adjacent areas because of undetected local breeding. During the forecast period, locust numbers will decline in the western lowlands and increase along the Red Sea as scattered adults appear and breed in areas of recent rainfall.

Somalia

• **Situation**

No locusts were seen during surveys on the escarpment between Boroma (0956N/4313E) and Berbera (1028N/4502E) on 15-19 September.

• **Forecast**

No significant developments are likely.

Ethiopia

• **Situation**

No locusts were seen during surveys carried out near Dire Dawa and in adjacent areas to the north on 19-22 September.

• **Forecast**

No significant developments are likely.

Djibouti

• **Situation**

No locusts were seen during surveys carried out on the coastal plains between Djibouti town and the Somali border, on the northern coast from Tadjourah (1147N/4253E) and Obock (1157N/4317E) to the Eritrean border and in the interior near Ali Sabieh (1109N/4242E) and the Ethiopian border.

• **Forecast**

A few scattered adults may appear on the coastal plains north of Obock during the forecast period. No significant developments are likely.

Kenya, Tanzania and Uganda

• **Forecast**

No significant developments are likely.

Egypt

• **Situation**

In the Western Desert, ground teams treated 38 ha of African Migratory Locust mixed with a few Desert Locust hoppers and adults in cropping areas at Sharq Oweinat (2237N/2845E) on 4 September.

• **Forecast**

No significant developments are likely.

Saudi Arabia

• **Situation**

No locusts were reported during September.

• **Forecast**

Scattered adults are likely to be present in areas of recent rainfall along the Red Sea coastal plains between Qunfidah and Jizan where small-scale breeding is expected during the forecast period.

Yemen

• **Situation**

On 6 September, mature adults were seen copulating and laying on the coastal plains northwest of Aden. By the end of the month, solitarious and transiens fourth to sixth instar hoppers at densities of 2-13 hoppers per sq. m and fledglings at densities of 350-1500 adults per ha were present within an area of 2000 ha near Am Rija (1302N/4434E). Nearby, adults were seen copulating and laying. No locusts were seen during surveys carried out in September in the interior near Al Hazm (1609N/4447E), on the Red Sea coastal plains and near Aden.

• **Forecast**

On the coastal plains west of Aden, small groups of adults may form and additional hatching is likely to occur that could lead to the formation of small groups of hoppers. As local conditions become dry, the adults are expected to move towards the Red Sea coastal plains where scattered adults may already be present and breeding on a small scale in areas of recent rainfall.

Oman

• **Situation**

No locusts were reported in Musandam during September.

• **Forecast**

No significant developments are likely.

United Arab Emirates

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

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

• **Forecast**

No significant developments are likely.

EASTERN REGION

Iran

• **Situation**

No locusts were reported in Kerman, Hormozgan and Sistan-Baluchistan provinces during September.

• **Forecast**

No significant developments are likely.

Pakistan

• **Situation**

During the second half of August, isolated immature and mature adults, at densities of 1-4 adults per ha, were seen at five places in the Cholistan Desert along the Indian border south of Bahawalpur, at three places in Tharparkar and at three places near Las Bela west of Karachi.

During the first half of September, similar populations and densities persisted at eight places in Cholistan and three in Tharparkar.

• **Forecast**

Locust numbers will continue to decline in Tharparkar and Cholistan and, unless further rains fall, the situation should be calm by the end of the forecast period. There is no evidence to suggest that significant numbers of locusts will appear from the east.

India

• **Situation**

No locusts were seen during surveys carried out in the summer breeding areas of Rajasthan and Gujarat during the first half of September.

• **Forecast**

No significant developments are likely.

Afghanistan

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MEDIUM

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LARGE

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VERY LARGE

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- 1 - 20 mm of rainfall.

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- 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.

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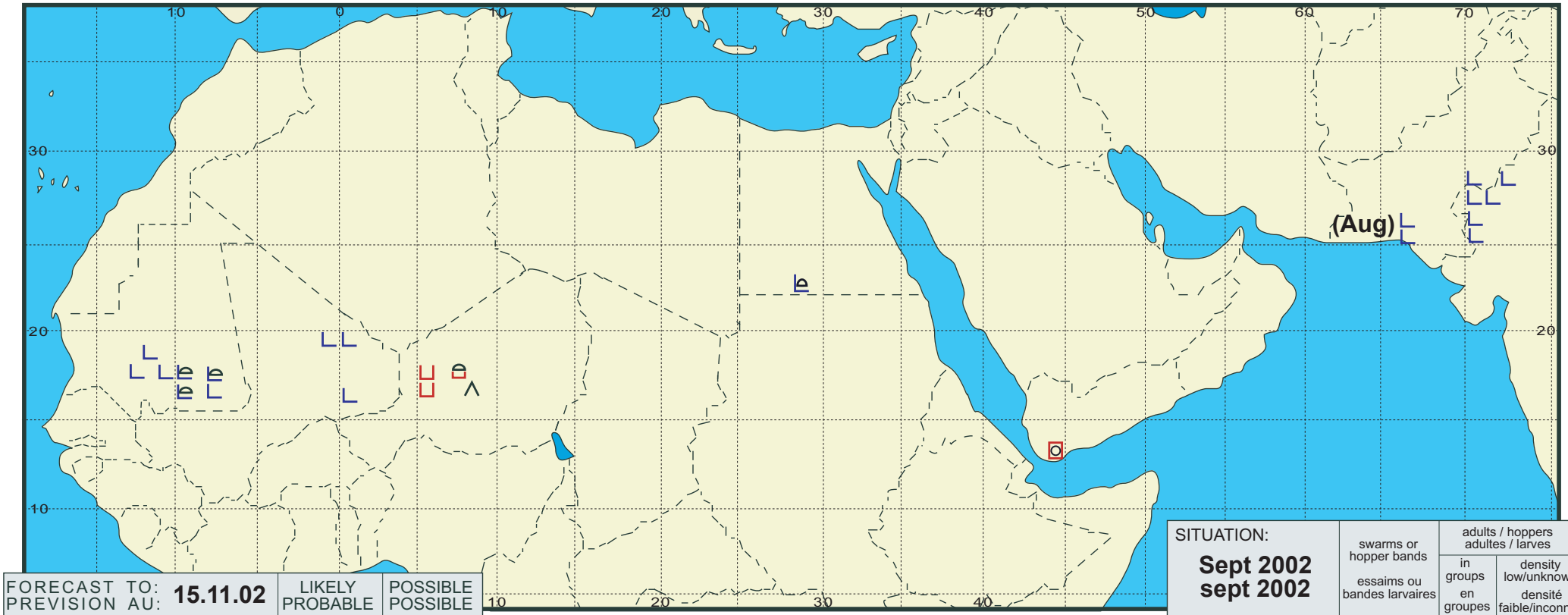
REMISSION

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

Desert Locust Summary
Criquet pèlerin - Situation résumée

288



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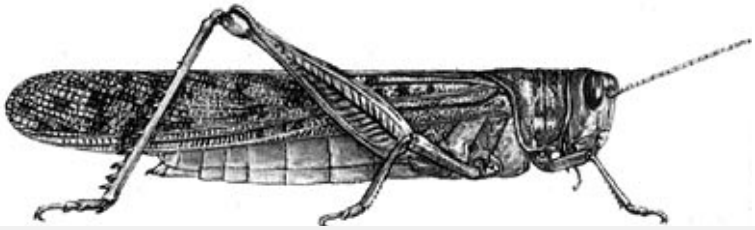
		in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures	■	□	⊔
mature or partly mature adults adultes matures ou partiellement matures	◣	◺	L
adults, maturity unknown adultes, maturité inconnue	▲	△	⋀
egg laying or eggs pontes ou œufs	▼	▽	⋁
hoppers larves	●	○	◡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



DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations **No. 289**

(5 Nov 2002)

General Situation during October 2002
Forecast until mid-December 2002

The Desert Locust situation remained calm during October. Although vegetation started to dry out in the summer breeding areas of West Africa, localized breeding was reported in parts of Mauritania, Mali and Niger. Small groups of hoppers and adults were treated in southern Yemen. Any escapees are likely to move to the southern Red Sea coastal plains where conditions continue to be favourable for breeding. During the forecast period, breeding will continue in northwest Mauritania and should commence along the Red Sea coastal plains.

Western Region. Small-scale breeding was in progress during October in a few places of central and western **Mauritania**. An increasing number of solitarious adults appeared in the northwest where laying occurred during September giving rise to solitarious hoppers in October. Breeding occurred in northern **Mali** where there were unconfirmed reports of hopper bands in September and October as well as adults flying further north into southern Algeria. A survey in late October found only low densities of adults and hoppers. Nevertheless, some adults could move north into southern Algeria. Breeding was also reported on a smaller scale in **Niger**. Unusually good rains fell over southern **Algeria** that may cause vegetation to become green and provide a suitable habitat for any adults moving out of the summer breeding areas in Mali and Niger.

Central Region. Ground control operations treated 200 ha of hopper and adult groups on the coastal plains near Aden, **Yemen**. Adults that escaped control are likely to move to the Red Sea coastal plains of Yemen where isolated adults are present and breeding conditions are already favourable. There is a low possibility that some adults may reach **Eritrea** and northern **Somalia**. During the forecast period, small-scale breeding will commence along the Red Sea coast from Yemen to Jizan, **Saudi Arabia**. Although no adults have been reported so far on the coasts of **Sudan** or Eritrea, they are likely to appear in the coming weeks and breed on small scale if rainfall occurs.

Eastern Region. No locusts were reported in the summer breeding areas of **India** and **Pakistan** where vegetation was drying out because of a lack of rainfall. No significant developments are likely in the region.

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Telephone: +39 06 570 52420 (7 days/week, 24 hr)
Facsimile: +39 06 570 55271
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Internet: www.fao.org
DLIS: www.fao.org/news/global/locusts/locuhome.htm

No. 289

DESERT LOCUST BULLETIN

Weather & Ecological Conditions in October 2002

Although seasonal rains have ended in the summer breeding areas of West Africa, Sudan and along the Indo-Pakistan border where vegetation is drying out, conditions are favourable for breeding in parts of northwest Mauritania and northern Mali. Unusually heavy rains fell in southern Algeria where conditions are improving. Breeding conditions continue to be favourable along the Red Sea coast in Yemen and southern Saudi Arabia.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) oscillated between 15N and 20N during the first half of October and gradually retreated southwards, remaining well south of 15N during the last decade of the month where it remained around 10N. Consequently, only a few showers were reported in the Sahel of West Africa and vegetation was drying out. In Mauritania, good rains fell during the first decade of October in the southwest (Trarza) and in the southern parts of the two Hodhs. During the second decade, rainfall was limited to a few places in the extreme southwest of the country. Light rains also fell in Adrar near Atar early in the month. Conditions were favourable for breeding in the east near Oualata, in the centre near Agane and in a few places in the northwest in Inchiri. In Mali, good rains fell during the first decade in the northern Adrar des Iforas from Tessalit to the Algerian border where vegetation remains green in some spots. These rains extended northwards into southern Algeria from Bordj Bou Mokhtar (29 mm) to Tamanrasset (80 mm). Other rainfall occurred in Algeria over the central and northern Sahara during the same period. Conditions are still favourable for breeding in a few areas of northern Mali and are improving in parts of southern Algeria. In Niger, conditions are less favourable and limited to just a few areas in Tamesna and western Air because of a lack of rainfall. Elsewhere in the region, conditions were dry.

In the **Central Region**, only a few isolated showers were reported in the summer breeding areas in the interior of Sudan during October. Consequently, vegetation is starting to dry out in most places. Conditions are already favourable for breeding in some of the winter breeding areas along the Red Sea coast, primarily from Hodeidah, Yemen to Jizan, Saudi Arabia where additional rainfall, heavy at times, occurred during October. Good rains also fell on the coastal plains north of Jeddah at Yenbo (20 mm). In Eritrea, vegetation is green on the central coast near Shieb, Sheleshela and Wakiro. In Djibouti, green vegetation persisted along the northern coast from September rainfall. Conditions were dry and unfavourable along the southeastern coast of the Red Sea in Egypt because of lack of rainfall. Similarly, no rainfall was reported along the coast of Sudan. Conditions were becoming dry on the coastal plains near Aden, Yemen where only localized areas of green vegetation remain. Isolated showers were reported near Dire Dawa, Ethiopia and Burao, Somalia during the first half of October. In Oman, isolated showers fell during the first days of October in the northern interior.

In the **Eastern Region**, no significant rainfall was reported in the summer breeding areas along the Indo-Pakistan border during October. Consequently, vegetation was drying out in both areas.

Area Treated

Yemen 200 ha (21 October)

Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• **SITUATION**

During the first decade of October, isolated fledglings, immature and mature adults were present near Aioun El Atrous (1702N/0941W) and in a few places between Tidjikja (1829N/1131W) and Nouakchott. Small-scale breeding continued near Aioun El Atrous where a fifth instar hopper was seen and commenced near Moudjeria (1751N/1228W) where first instar hoppers were present.

From the second decade onwards, there was a shift in locust populations towards the west and northwest. An increasing number of mature adults were seen west of Moudjeria and there were new reports of mature adults, some copulating near Akjoujt (1945N/1421W) in southern Inchiri. Locust densities also increased, up to 200 adults per ha near Akjoujt.

First to third instar hoppers were reported at two places near Akjoujt on the 17-18th, suggesting that laying occurred in September. Solitarious hoppers of all instars, including new hatchlings, were seen near Moudjeria up to the 30th. In the southeast, scattered immature adults persisted north of Aioun and, to a less extent, near Oualata (1715N/0655W).

• **Forecast**

Locust numbers will continue to increase in Inchiri and probably southern Adrar from small-scale breeding that will occur during the forecast period supplemented by low numbers of adults arriving from the summer breeding areas as vegetation dries out there.

Mali

• **Situation**

During the first decade of October, there were unconfirmed reports from nomads and travelers of third and fourth instar hopper bands and adults at several locations in the Tilemsi Valley, Timetrine and in the Adrar des Iforas north of Aguelhoc (1927N/0052E). Some damage was reported by locusts and grasshoppers on natural vegetation and adults were said to be seen flying further north towards the Algerian border. A survey undertaken at the end of the month found adults at densities up to 300 per ha and hoppers at densities up to 2 per sq. metre at several places in the Tilemsi Valley.

• **Forecast**

Small-scale breeding is expected to continue during the forecast period in parts of the Adrar des Iforas, Tilemsi and Timetrine that could cause locust numbers to gradually increase. There is a low possibility that some adults will move northwards into adjacent areas of southern Algeria.

Niger

• **Situation**

Low numbers of first to third instar solitarious hoppers and mature adults at densities of 500-3,000 adults per ha were reported during the second decade of October at three places on the Talak plains northeast of Arlit near Agaliouk (1846N/0732E). Some adults were seen copulating.

• **Forecast**

Small-scale breeding will continue as hoppers mature and additional hatching occurs near Arlit early in the forecast period. Nevertheless, locust numbers will decline in Tamesna and in western Air as vegetation dries out and breeding conditions become unfavourable. No significant developments are likely.

Chad

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Senegal

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Algeria

• **Situation**

No locusts were reported during October.

• **Forecast**

Low numbers of adults may be present in the extreme south between Bordj Bou Mokhtar and Tamanrasset. These may be augmented by any locusts that appear from adjacent areas of northern Mali and Niger during periods of warm southerly winds. Small-scale breeding could occur in areas of recent rainfall south of the Hoggar Mountains. Regular surveys are highly recommended in these areas to monitor and clarify the situation.

Morocco

• **Situation**

No locusts were reported during October.

• **Forecast**

No significant developments are likely.

Libyan Arab Jamahiriya

• **Situation**

A late report indicated that there were no locusts during September.

• **Forecast**

No significant developments are likely.

Tunisia

• **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.

CENTRAL REGION

Sudan

• **Situation**

No locusts were seen during surveys carried out in Northern Kordofan between El Obeid (1311N/3010E) and Wadi Milk (1641N/2951E) on 27 September to 2 October except for isolated mature adults at two places northwest of El Obeid. Surveys in the winter breeding areas on the Red Sea coast will commence in early November.

• **Forecast**

Isolated adults are expected to appear on the Red Sea coastal plains between Port Sudan and Karora and breed on a small scale if rainfall occurs.

Eritrea

• **Situation**

A late report indicated that no locusts were seen during surveys carried out on the Red Sea coastal plains near Massawa (1537N/3928E) on 14-15 September.

• **Forecast**

Isolated adults may be present in some areas along the Red Sea coastal plains between Massawa and Karora. There is a low possibility of additional adults appearing from Yemen. Small-scale breeding is likely to occur in areas of recent rainfall and lead to a gradual increase in locust numbers.

Somalia

• **Situation**

No reports received.

• **Forecast**

A few scattered adults may appear on the coastal plains between Berbera and the Djibouti border during the forecast period. No significant developments are likely.

Ethiopia

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Djibouti

• **Situation**

No surveys were conducted and no locusts were reported during October.

• **Forecast**

A few scattered adults may appear on the coastal plains north of Obock and near Djibouti town during the forecast period. No significant developments are likely.

Egypt

• **Situation**

No locusts were reported during October along the Red Sea coast or in the Western Desert.

• **Forecast**

No significant developments are likely.

Saudi Arabia

• **Situation**

No locusts were reported during October near Jeddah and Mecca. No reports were received of surveys elsewhere on the Red Sea coastal plains.

• **Forecast**

Scattered adults are likely to be present in areas of recent rainfall along the Red Sea coastal plains between Qunfidah and Jizan where small-scale breeding is expected during the forecast period.

Yemen

• **Situation**

On the coastal plains northwest of Aden, small-scale breeding continued during October. Scattered solitarious and transiens third to fifth instar hoppers and groups of fledglings and immature adults were reported in crops at three locations near Am Mashrabah (1301N/4423E) and Dar Al-Gudaimi (1302N/4423E) at mid month. Densities were 20-30 hoppers per sq. m. and 6,000 adults per ha. Ground control operations treated 200 ha on 21 October. Another location was set aside for a field trial using the biocontrol agent *Metarhizium*.

No locusts were seen on the Red Sea coast between Zabid (1410N/4318E) and Suq Abs (1600N/4312E) during surveys carried out on 28 September to 2 October. Isolated mature adults were seen at two locations near Bayt Al Faqih (1430N4317E) during surveys conducted on 29-31 October from Zabid to the Saudi Arabian border.

• **Forecast**

Further hatching is likely to occur on a limited scale on the coastal plains west of Aden that may lead to the formation of a few small groups of hoppers and adults. Once vegetation becomes dry, adults will almost certainly move to the Red Sea coast and join others that are already likely to be present. Small-scale breeding will occur there during the forecast period in areas of recent rainfall. Regular monitoring of the Red Sea coastal plains is recommended.

Oman

• **SITUATION**

No locusts were reported in the Dakhliya region during October.

• **FORECAST**

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria Arab Republic, Tanzania, Turkey, UAE and Uganda

• **FORECAST**

No significant developments are likely.

EASTERN REGION

Iran

• **SITUATION**

No locusts were reported in Kerman and Hormozgan provinces on 13-14 October.

• **FORECAST**

No significant developments are likely.

Pakistan

• **SITUATION**

A late report indicated that isolated mature adults were present at three places in Tharparkar Desert, five places in Cholistan Desert and one place near Las Bela west of Karachi during the second half of September.

During the first half of October, locusts decreased in the summer breeding areas where only a few immature and mature adults were seen at three places in Cholistan. No locusts were reported during the last half of the month.

• **FORECAST**

No significant developments are likely.

India

• **SITUATION**

No locusts were seen during surveys carried out in the summer breeding areas of Rajasthan near Jodhpur and Bikaner during the second half of September and first half of October. No reports were received from Barmer or Jaisalmer.

• **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 all locust situation reports are sent to FAO HQ by the 28th 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 e-mail. After each survey or control operation, affected countries should send completed *FAO Desert Locust Survey and Control Forms* with a brief interpretation of the results by e-mail to eclo@fao.org.

Desert Locust Guidelines. The revised edition in English was issued on 24 September 2001 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: 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 (www.fao.org/news/global/locusts/pubslist.htm). New additions are:

- Report of the 23rd session of the NW Africa Commission (CLCPANO) in French and Arabic
- Report of the 36th session of the DLCC recently held in Rome (English and French; Arabic upon request)
- FAO Desert Locust Guidelines, revised edition, 2001 (English)
- FAO Spray Monitoring Form (English)

Desert Locust research award. The FAO Commission for Controlling the Desert Locust in the Central Region (CRC) is pleased to announce a cash award for outstanding research on Desert Locust. For more details, please contact the CRC Office in Cairo (munir.butrous@fao.org).

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DESERT LOCUST BULLETIN

Master Trainer Course. Details and photos of a FAO training-of-trainers course on Desert Locust survey, control and training skills recently held in Oman are available at: www.fao.org/news/global/locusts/omntot/totmain.htm

2002 events. The following are scheduled:

- **FAO/CRC/DLCO-EA.** Harmonization of activities, Cairo (Egypt), 26-27 November
- **EMPRES/WR.** Improved locust control application techniques regional workshop, Nouakchott (Mauritania), 15-19 December
- **SW Asia Commission.** 23rd Session, Islamabad (Pakistan), 16-20 December

2003 events. The following are provisionally scheduled:

- **EMPRES/WR.** 1st Liaison Officers meeting, Niamey (Niger), 27-31 January
- **DLCC Technical Group.** FAO Rome, 24-26 February
- **EMPRES.** 6th Consultative Committee and Phase III Planning Workshop, Cairo (Egypt), 24-28 March
- **CRC.** 24th Session of the Executive Committee, Beirut (Lebanon), April
- **CLCPANO.** 24th Session, Tripoli (Libya), 4-8 May
- **CLCPRO.** 2nd Session, Alger (Algeria), June
- **DLCC.** 37th Session, FAO Rome, 22-26 September
- **EMPRES/CR.** 11th Liaison Officers meeting, December

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.

REGIONS

WESTERN

- locust-affected countries in West and North-West Africa: Algeria, Chad, Libya, Mali, Mauritania, Morocco, Senegal, Tunisia; during plagues only: Burkino Faso, Cape Verde, Gambia, Guidea Bissau and Guinea Conakry.

CENTRAL

- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

EASTERN

- locust-affected countries in South-West Asia: Afghanistan, India, Iran and Pakistan.

Desert Locust Summary
Criquet pèlerin - Situation résumée

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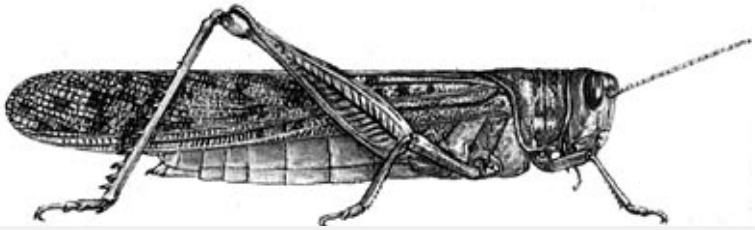
FORECAST TO: PREVISION AU: **15.12.02**	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favourables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: **Oct 2002 oct 2002**	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. 290**

(4 Dec 2002)

General Situation during November 2002 Forecast until mid-January 2003

The Desert Locust situation remained calm during November. Although small-scale breeding occurred in western Mauritania, northern Mali, Niger and southern Yemen, locust numbers remained below threatening levels. Isolated adults were present in southern Algeria. In the winter breeding areas along the Red Sea, unusually heavy rainfall occurred on the coast of Sudan where scattered adults were already present. During the forecast period, breeding is likely to occur along the Red Sea coasts and low numbers of adults may persist in Mauritania, Mali, Niger and Algeria.

Western Region. Small-scale breeding in western **Mauritania**, northern **Mali** and **Niger** led to a slight increase in locust numbers during November but control operations were only required in Niger where 435 ha were treated. As no rain fell in these areas in the past month, further breeding is unlikely unless additional rainfall occurs in the coming weeks. Consequently, only low numbers of adults will persist in these areas. Some adults appeared in southern **Algeria** that are thought to have originated from the breeding in northern Mali. No locusts were reported elsewhere in the region.

Central Region. As a result of control operations carried out in October, only scattered adults remained on the Gulf of Aden coastal plains in **Yemen**. Nevertheless, localized breeding continued during November giving rise to small patches of hoppers. Low numbers of adults were present on the Red Sea coastal plains in **Sudan**. Small-scale breeding is expected to occur over a widespread area due to unusually heavy rains that fell several times during November on the coast and in adjacent subcoastal areas. Limited breeding is also likely to occur along parts of the Red Sea coast in **Saudi Arabia** where good rains fell during November and on the coastal plains of Yemen and **Eritrea**. No locusts were reported elsewhere in the region.

Eastern Region. Although light rains fell in Baluchistan, **Pakistan** and along the Indo-Pakistan border, breeding conditions remained unfavourable and no locusts were reported in the region. No significant developments are likely during the forecast period.

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

Weather & Ecological Conditions in November 2002

Good rains fell along the Red Sea coastal plains of Sudan and Saudi Arabia where conditions should become favourable for breeding. Good rains also fell along the southern side of the Atlas Mountains in Morocco and Algeria. Green vegetation persisted in a few places in northwest Mauritania, northern Mali and Niger.

In the **Western Region**, light to moderate rains fell in northwestern Morocco and northern Algeria during November. Most of these rains were associated with several depressions that formed over the Atlantic and moved eastward across the Mediterranean from mid month onwards. In Morocco, rainfall occurred along the Atlantic coast from Tan-Tan to Agadir and further inland from the southern foothills of the Atlas Mountains to the Oued Draa Valley. Some of these showers extended to adjacent areas of northwestern Algeria. As the depressions moved further east, light showers fell at times in parts of eastern Algeria, southern Tunisia and northwestern Libya. Small patches of green vegetation were reported near the Hoggar Mountains and Tamanrasset, Algeria. Although no significant rainfall was reported or is thought to have occurred in the Sahel between Mauritania and Chad, green vegetation was reported in a few places. In Mauritania, vegetation was green between Magta Lahjar and Tidjikja, near Akjoujt and in the Aguilal Fai. In northern Mali, vegetation was drying out in most places except for a few small spots in the Tilemsi Valley and Timetrine. In Niger, vegetation was green in the Talak region near Arlit.

In the **Central Region**, good rains fell in some coastal and subcoastal areas on both sides of the Red Sea in Sudan and Saudi Arabia. In Sudan, unusually heavy rains were reported several times on the coastal plains between Tokar Delta and Port Sudan as well as on the western side of the Red Sea Hills along Wadi Oko/Diib from Tomala nearly to the Egyptian border. Most of these rains occurred during the second half of November and were associated with northern surges of the Red Sea Convergence Zone (RSCZ) that are linked to depression further north in the Mediterranean. In Saudi Arabia, good rains associated with a strong depression over the eastern Mediterranean fell at the end of the month on the central and northern coastal plains between Jeddah and Yenbo. Consequently, breeding conditions should improve in these areas in the coming weeks. Elsewhere, no significant rainfall was reported during November. Nevertheless, vegetation was becoming green in a few places along the Red Sea coastal plains near Halaib, Egypt and on the Eritrean coastal plains between Massawa and the Sudanese border. In Yemen, on the other hand, vegetation was drying up in a few places along the central plains of the Red Sea coast as well as on the Gulf of Aden coastal plains. In northern Somalia, vegetation is dry on the northwestern coastal plains but green in some places further inland on the escarpment. In Oman, light rains fell in early November on the northern Batinah coast extending to the Musandam Peninsula and eastern UAE but conditions remained dry.

In the **Eastern Region**, the rains that fell in northern Oman were part of a larger system that extended to Baluchistan, Pakistan where widespread light rains were reported on 7-8 November on the coast between Jiwani and Pasni, and further inland near Panjgur as well as south of the Afghanistan border between Nokkundi and Nushki. Unusually heavy showers were reported on the 25th at Dalbandin. In India, light rains fell in Rajasthan at Barmer, Jaisalmer, Jodhpur and Bikaner during the second week. Some of these extended into the Cholistan and Tharparkar Deserts in Pakistan. Despite these showers, vegetation conditions remained dry in the Desert Locust breeding areas in both countries.

Area Treated

Niger 435 ha (2-5 November)

Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• **SITUATION**

During November, solitarious immature adults from earlier breeding were scattered near Aioun El Atrous (1702N/0941W). Small-scale breeding that started in September and October continued in the west and northwest between Moudjeria (1751N/1228W) and

Akjoujt (1945N/1421W). Although most of the hoppers were of all instars, some had reached fifth instar and had fledged into new adults. The largest infestation was reported near Moudjeria where third to fifth instar hoppers at densities of 5,000 per ha were seen on 2.5 ha. Some of these were transiens.

• **Forecast**

If additional rainfall occurs, small-scale breeding will continue between Moudjeria and Akjoujt, and perhaps extend further north in Inchiri. Otherwise, breeding will decline in these areas and some grouping may occur as vegetation starts to dry out. Locust maturation may be delayed as temperatures decline during the forecast period.

Mali

• **Situation**

During November, solitarious hoppers and immature and mature adults mixed with some transiens were present in a few places in the Tilemsi Valley and in the Timetrine. Hopper densities were highest in the Timetrine west of Tessalit (2011N0102E) where there were up to 10 hoppers per sq. metre but no bands were reported. Adults were generally scattered in very low numbers except for one location, Bolrech (2047N/0001E), where an estimated 10,000 per ha were seen.

• **Forecast**

Unless more rain falls, breeding will come to an end in northern Mali and only low numbers of solitarious adults are likely to persist in a few places in the Timetrine, Tilemsi Valley and the Adrar des Iforas. There is a low possibility that some adults will move northwards into adjacent areas of southern Algeria during periods of warm southerly winds associated with Mediterranean depressions.

Niger

• **Situation**

In early November, scattered immature and mature adults mixed with isolated first instar hoppers were reported on the Talak plains northeast of Arlit near Agaliouk (1846N/0732E). Ground control operations treated 435 ha, and, by the 21st, scattered adults at densities of 200 per ha and solitarious and transiens hoppers at densities of 10 per bush remained. Nearby, solitarious adults, up to 1,000 per ha, were reported as well as a few fourth instar hoppers. Elsewhere, an individual immature adult was seen on the 8th east of Agadez (1700N/0756E) in southeastern Air. A single hopper and adult were also seen in Tamesna north of In Abangharit (1754N/0559E) on the 22nd.

• **Forecast**

Locust numbers will decline in Tamesna and in western Air as vegetation dries out and breeding conditions become unfavourable. Nevertheless, low numbers may persist in a few places near Talak. No significant developments are likely.

Chad

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Senegal

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Algeria

• **Situation**

From 30 October to 2 November, isolated mature adults were seen at four places in W. Amded (2249N/0424E), W. In Chikchi (2311N/0240E) and W. Agherfenou (2318N/0230E) west of Tamanrasset. No locusts were seen during surveys carried out between Tamanrasset and In Salah as well as near Tindouf during November

• **Forecast**

Low numbers of adults are likely to persist near Tamanrasset and small-scale breeding could occur in areas where conditions are suitable.

Morocco

• **Situation**

No locusts were reported in the south and southeast during November.

• **Forecast**

No significant developments are likely.

Libyan Arab Jamahiriya

• **Situation**

No locusts were reported during October.

• **Forecast**

No significant developments are likely.

Tunisia

• **Situation**

No locusts were reported during October and November.

• **Forecast**

No significant developments are likely.

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

• **Forecast**

No significant developments are likely.

CENTRAL REGION

Sudan

• **Situation**

Isolated mature adults at densities up to 16 locusts per ha were reported at four places in Tokar Delta on 29 November. Isolated mature adults were also present at two places on the coastal plains between Tokar (1827N3741E) and Suakin (1908N/3717E). No locusts were seen elsewhere on the Red Sea coastal plains south of Port Sudan or in the northern subcoastal areas along Wadi Oko/Diib between Tomala (2002N/3551E) and the Egyptian border during the last week of November.

• **Forecast**

Small-scale breeding will occur in areas of good rainfall on the Red Sea coastal plains from Karora to Port Sudan including the Tokar Delta. Additional breeding may occur in Wadi Oko/Diib. Consequently, locust numbers will increase during the forecast period but remain below threatening levels.

Eritrea

• **Situation**

A late report indicated that no locusts were seen on the central and southern Red Sea coastal plains between Idd (1357N/4138E) and Mersa Gulbub (1633N/3908E) on 27-30 September. No locusts were seen during surveys carried out on 16-18 November on the northern coast between Massawa (1537N/3928E) and the Sudanese border at Karora (1745N/3820E).

• **Forecast**

Isolated adults may be present in some areas along the Red Sea coastal plains between Massawa and Karora. There is a low possibility of additional adults appearing from Yemen. Small-scale breeding will occur in areas of recent rainfall and lead to a gradual increase in locust numbers.

Somalia

• **Situation**

No locusts were seen during surveys carried out on the northwestern coastal plains between Berbera (1028N/4502E) and the Djibouti border as well as on the escarpment between Hargeisa (0931N/4402E) and Boroma (0956N/4313E) on 10-13 November.

• **Forecast**

A few scattered adults may appear on the coastal plains between Berbera and the Djibouti border during the forecast period. No significant developments are likely.

Ethiopia

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Djibouti

• **Situation**

No locusts were seen on the coastal plains between Djibouti town and the Somali border on 14 November.

• **Forecast**

A few scattered adults may appear on the coastal plains north of Obock and near Djibouti town during the forecast period. No significant developments are likely.

Egypt

• **Situation**

No locusts were reported during November along the Red Sea coast or in the Western Desert.

• **Forecast**

No significant developments are likely.

Saudi Arabia

• **Situation**

No reports received.

• **Forecast**

Scattered adults are likely to be present in areas of recent rainfall along the Red Sea coastal plains between Jeddah and Yenbo as well as further south near Jizan where small-scale breeding is expected during the forecast period.

Yemen

• **Situation**

On 30-31 October, scattered fledglings and immature solitarious adults persisted on the coastal plains of Aden near Am Rija (1302N/4434E) where previous breeding had occurred and control operations had been carried out. Nearby, first and second instar hoppers at densities of 5-10 per sq. m. mixed with immature adults were present in an area of recent breeding northwest of Lahij (1303N/4453E). No locusts were seen elsewhere along the coastal plains to the west and east of Aden.

On the central Red Sea coast, no locusts were seen during surveys between Bajil (1458N/4314E) and Bayt

Al Faqih (1430N4317E) on 18-20 November.

• **Forecast**

Locust numbers will decline on the Gulf of Aden coastal plains as vegetation becomes dry and low numbers of adults move towards the Red Sea coast where scattered adults may already be present and breeding on a small scale in those areas that are green. Breeding is expected to continue during the forecast period. Regular monitoring of the Red Sea coastal plains is recommended.

Oman

• **Situation**

No locusts were reported in the Musandam and Dakhliya regions during November.

• **Forecast**

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria Arab Republic, Tanzania, Turkey, UAE and Uganda

• **Forecast**

No significant developments are likely.

EASTERN REGION

Iran

• **Situation**

No locusts were reported on the coastal plains west of Bandar Abbas on 7 November.

• **Forecast**

No significant developments are likely.

Pakistan

• **Situation**

No locusts were reported during November.

• **Forecast**

No significant developments are likely.

India

• **Situation**

No locusts were reported during the second half of October and first half of November.

• **Forecast**

No significant developments are likely.

Afghanistan

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Announcements

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No. 290

DESERT LOCUST BULLETIN

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2002 events. The following are scheduled:

- **EMPRES/WR.** Improved locust control application techniques regional workshop, Nouakchott (Mauritania), 15-19 December
- **SW Asia Commission.** 23rd Session, Islamabad (Pakistan), 16-20 December

2003 events. The following are provisionally scheduled:

- **EMPRES/WR.** 1st Liaison Officers meeting, Niamey (Niger), 27-31 January
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- **CLCPRO.** 2nd Session, Alger (Algeria), June
- **DLCC.** 37th Session, FAO Rome, 22-26 September
- **EMPRES/CR.** 11th Liaison Officers meeting, December
- **DLCC Technical Group.** FAO Rome, *to be advised*

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.

REGIONS

WESTERN

- locust-affected countries in West and North-West Africa: Algeria, Chad, Libya, Mali, Mauritania, Morocco, Senegal, Tunisia; during plagues only: Burkino Faso, Cape Verde, Gambia, Guidea Bissau and Guinea Conakry.

CENTRAL

- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

EASTERN

- locust-affected countries in South-West Asia: Afghanistan, India, Iran and Pakistan.

Desert Locust Summary
Criquet pèlerin - Situation résumée

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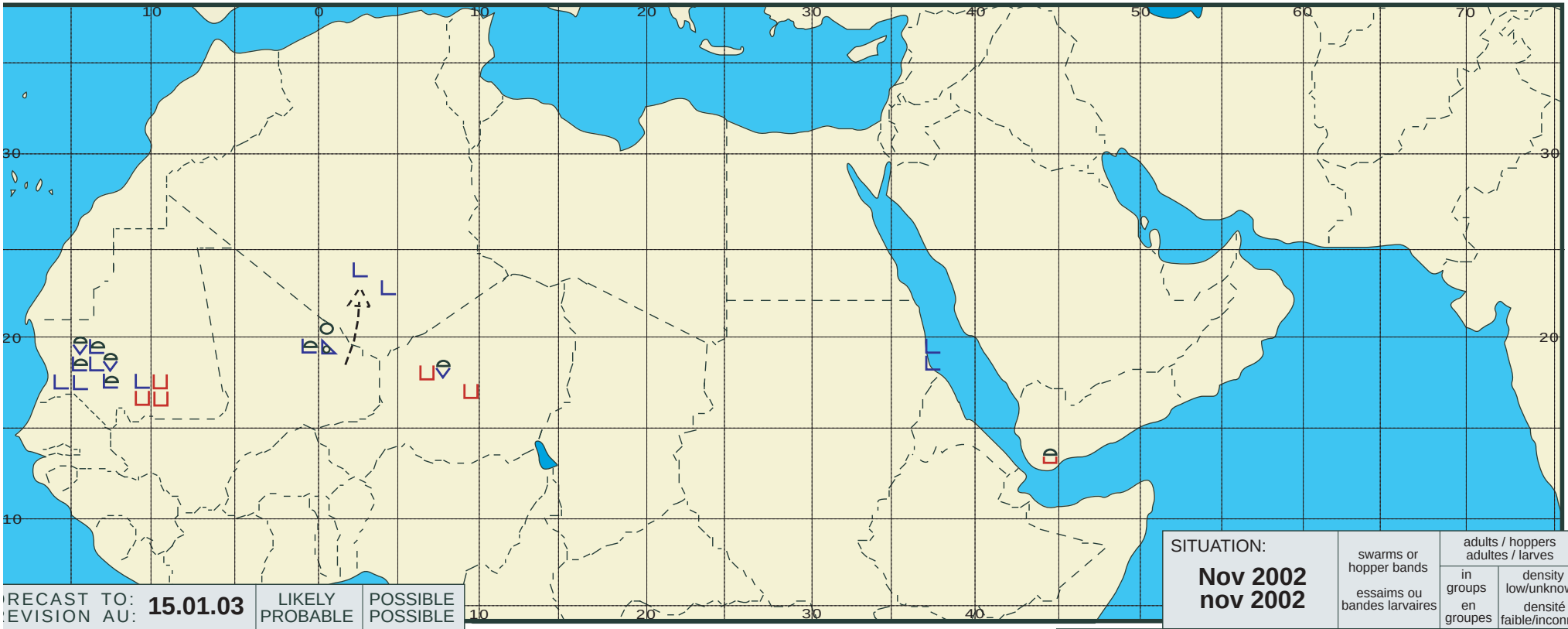
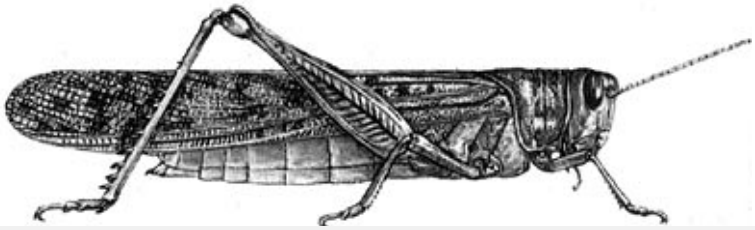


FORECAST TO: / REVISION AU: **15.01.03**	LIKELY PROBABLE	POSSIBLE POSSIBLE
ourable breeding conditions nditions favourables à la reproduction		
jor swarm(s) saim(s) important(s)		
nor swarm(s) saim(s) limité(s)		
n swarming adults ultes non essaimant		

SITUATION: **Nov 2002 nov 2002**	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. 291**

(7Jan 2003)

General Situation during December 2002 Forecast until mid-February 2003

The Desert Locust situation remained calm during December. Small-scale breeding continued in western Mauritania and insignificant numbers of adults were present in Morocco and Yemen. Although good rains fell in Morocco, they are expected to have little impact on the locust situation. During the forecast period, small-scale breeding is likely to occur along the Red Sea coasts of Yemen and Saudi Arabia and, if additional rains fall, on the coasts of Sudan and Eritrea as well as in northwestern Mauritania. Elsewhere, low numbers of locusts may persist in parts of northern Mali.

Western Region. Small-scale breeding continued in central and western **Mauritania** during December where low numbers of hoppers and adults were reported. A few adults were also seen in the Draa Valley in **Morocco** and in southern **Algeria**. Unless further rains fall in these areas, only low numbers of adults will persist in these areas. In northern **Mali**, scattered adults may be present in a few wadis where vegetation is still green. No locusts were reported elsewhere in the region.

Central Region. Isolated adults were reported at one place on the Red Sea coast in **Yemen** as well as on the coastal plains near Aden. Small-scale breeding is likely to occur during the forecast period on the Red Sea coast of Yemen and in adjacent areas near Jizan, **Saudi Arabia** where light rains fell during December. This will lead to a slight increase in locust numbers but they will remain well below threatening levels. If additional rains fall in the coming weeks, small-scale breeding could occur on the coastal plains and adjacent subcoastal areas in **Sudan** where adults may already be present and, to a lesser extent, in **Eritrea**. No locusts were reported elsewhere in the region.

Eastern Region. Although light rains fell in Baluchistan, **Pakistan** and in Rajasthan, **India**, breeding conditions remained unfavourable and no locusts were reported in the region. No significant developments are likely 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.
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

No. 291

DESERT LOCUST BULLETIN

Weather & Ecological Conditions in November 2002

Good rains fell during December in Morocco and in some places along the Red Sea coastal plains where conditions are favourable for breeding. Although conditions were becoming unfavourable in northwestern Mauritania, northern Mali and southern Algeria, there may be sufficient vegetation to allow low numbers of locusts to survive.

In the **Western Region**, good rains fell during December in northwestern and southern Morocco, extending at times to western Algeria. These rains were associated with several depressions that originated in the Atlantic Ocean and moved eastward across the Mediterranean on the 10-13th, the 18th and on the 27th. Heavy rains fell in the Souss Valley (154 mm at Taroudant, 121 at Agadir) and along the southern side of the Atlas Mountains (141 mm at Ouarzazate). Rainfall was lighter in the Draa Valley and on the coast between Sidi Ifni and Dakhla. Most of the rain fell during the second week when light showers fell as far south as Dakhla and east to Samara and Tindouf. Consequently, vegetation is green or becoming green in most of these areas. On 10 December, light rains also fell in southern Mauritania from Aioun El Atrous south to Nioro du Sahel, Mali. On the 12th, the Inter-Tropical Convergence Zone (ITCZ) reached as far north as 25N over northeastern Niger but no rainfall was reported or is thought to have occurred. Although vegetation was becoming dry, conditions remained favourable for Desert Locust survival in parts of Inchiri in northwestern Mauritania, in a few wadis in the Adrar des Iforas in northern Mali and near Tamanrasset in southern Algeria.

In the **Central Region**, light to moderate rains fell along parts of the Red Sea coast in Eritrea near Massawa and in Saudi Arabia near Jizan during the third week of December. Light to moderate rains also fell several times on the Red Sea coast of Yemen between Bayt Al Faqih and the Saudi border. Consequently, conditions are expected to be favourable for small-scale breeding in these areas. Light rainfall also occurred in eastern Ethiopia near Dire Dawa and in northwestern Somalia near Boroma, but vegetation was reported to be drying out in these places. In Djibouti, light rain fell in the capital in the 26th and 29th. No rainfall was reported on the Red Sea coast in Sudan and Egypt.

In the **Eastern Region**, isolated showers fell in some places along the coast and in the interior of Baluchistan in western Pakistan during the second half of December. Similar showers were reported in parts of Rajasthan, India between Jodhpur, Jaisalmer and Bikaner at the end of the month. Despite this rainfall, temperatures remained low and conditions were unfavourable for locust survival or breeding in both areas.

Area Treated

No control operations were reported during December.

Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• **SITUATION**

Although breeding declined during the first two decades of December in the Takhça region near Moudjeria (1751N/1228W), a few individual hoppers of all instars mixed with isolated immature and mature adults persisted in this area during the remainder of the month. Small-scale breeding continued to the northeast, northwest and south of Moudjeria, and near Akjoujt (1945N/1421W) where isolated hoppers, fledglings and adults were present.

• **FORECAST**

Small-scale breeding will continue between Moudjeria and Akjoujt, and perhaps extend further north in Inchiri, if additional rains fall during the forecast period. Otherwise, breeding will decline in these areas. Locust maturation is likely to be delayed due to low temperatures.

Mali

• **SITUATION**

A report was received with information up to 3 December but further details are awaited.

• **FORECAST**

Low numbers of solitarious adults are likely to persist in a few places in the Timetrine, Tilemsi Valley and the Adrar des Iforas.

Niger

• **Situation**

In early November, scattered immature and mature adults mixed with isolated first instar hoppers were reported on the Talak plains northeast of Arlit near Agaliouk (1846N/0732E). Ground control operations treated 435 ha, and, by the 21st, scattered adults at densities of 200 per ha and solitarious and transiens hoppers at densities of 10 per bush remained. Nearby, solitarious adults, up to 1,000 per ha, were reported as well as a few fourth instar hoppers. Elsewhere, an individual immature adult was seen on the 8th east of Agadez (1700N/0756E) in southeastern Air. A single hopper and adult were also seen in Tamesna north of In Abangharit (1754N/0559E) on the 22nd.

• **Forecast**

Locust numbers will decline in Tamesna and in western Air as vegetation dries out and breeding conditions become unfavourable. Nevertheless, low numbers may persist in a few places near Talak. No significant developments are likely.

Chad

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Senegal

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Algeria

• **Situation**

A few immature adults were present in wadis near Tamanrasset (2250N/0528E) during December.

• **Forecast**

Low numbers of adults are likely to persist near Tamanrasset and small-scale breeding could occur if rains fall during the forecast period.

Morocco

• **Situation**

Three individual immature adults were seen near Guelmim at Msied (2801N/1049W) on 26 December. No locusts were seen during surveys carried out in adjacent areas near Tan-Tan.

• **Forecast**

Low numbers of adults are expected to slowly mature and eventually breed on a limited scale in some places along Wadi Draa and in adjacent areas on the coast.

Libyan Arab Jamahiriya

• **Situation**

No locusts were reported during December.

• **Forecast**

No significant developments are likely.

Tunisia

• **Situation**

No locusts were reported during December.

• **Forecast**

No significant developments are likely.

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

• **Forecast**

No significant developments are likely.

CENTRAL REGION

Sudan

• **Situation**

No locusts were reported during December.

• **Forecast**

Small-scale breeding is likely to be in progress on the Red Sea coastal plains in areas that received good rainfall during November, primarily between Suakin and Tokar Delta and in the northern subcoastal areas in Wadi Oko/Diib. Consequently, locust numbers should increase during the forecast period but remain below threatening levels.

Eritrea

• **Situation**

No locusts were seen during surveys carried out on 22-23 December on the northern coast between Massawa (1537N/3928E) and the Sudanese border at Karora (1745N/3820E).

• **Forecast**

Isolated adults may be present in some areas along the Red Sea coastal plains between Massawa and Karora. Small-scale breeding could occur in areas of recent rainfall and lead to a gradual increase in locust numbers.

Somalia

• **Situation**

No locusts were seen during surveys carried out on the northwestern coastal plains near Berbera (1028N/4502E) and on the escarpment Hargeisa

(0931N/4402E) and Boroma (0956N/4313E) on 10-12 December.

• **Forecast**

No significant developments are likely.

Ethiopia

• **Situation**

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

• **Forecast**

No significant developments are likely.

Djibouti

• **Situation**

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

• **Forecast**

No significant developments are likely.

Egypt

• **Situation**

No locusts were reported during December along the Red Sea coast or in the Western Desert.

• **Forecast**

No significant developments are likely.

Saudi Arabia

• **Situation**

No locusts were reported during November and December.

• **Forecast**

Scattered adults are likely to be present in areas of recent rainfall along the Red Sea coastal plains near Jizan where small-scale breeding is expected during the forecast period.

Yemen

• **Situation**

An isolated mature adult was seen on the Red Sea coastal plains south of Hodeidah at Khabt Majbol (1441N/4312E) on 12 December. Isolated mature adults were seen on the 31st on the coastal plains northwest of Aden in areas where breeding had occurred during October.

• **Forecast**

Locust numbers will continue to decline on the Gulf of Aden coastal plains as vegetation becomes dry. Small-scale breeding is expected to occur during the forecast period along parts of the Red Sea coastal plains. Regular monitoring of these areas is recommended.

Oman

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria Arab Republic, Tanzania, Turkey, UAE and Uganda

• **Forecast**

No significant developments are likely.

EASTERN REGION

Iran

• **Situation**

No locusts were seen during surveys carried out in Hormozgan and Kerman provinces on 23-24 December.

• **Forecast**

No significant developments are likely.

Pakistan

• **Situation**

No locusts were reported during December.

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India

• **Situation**

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

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No. 291

DESERT LOCUST BULLETIN

Glossary of terms

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- 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.

REGIONS

WESTERN

- locust-affected countries in West and North-West Africa: Algeria, Chad, Libya, Mali, Mauritania, Morocco, Senegal, Tunisia; during plagues only: Burkino Faso, Cape Verde, Gambia, Guidea Bissau and Guinea Conakry.

CENTRAL

- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

EASTERN

- locust-affected countries in South-West Asia: Afghanistan, India, Iran and Pakistan.

Desert Locust Summary
Criquet pèlerin - Situation résumée

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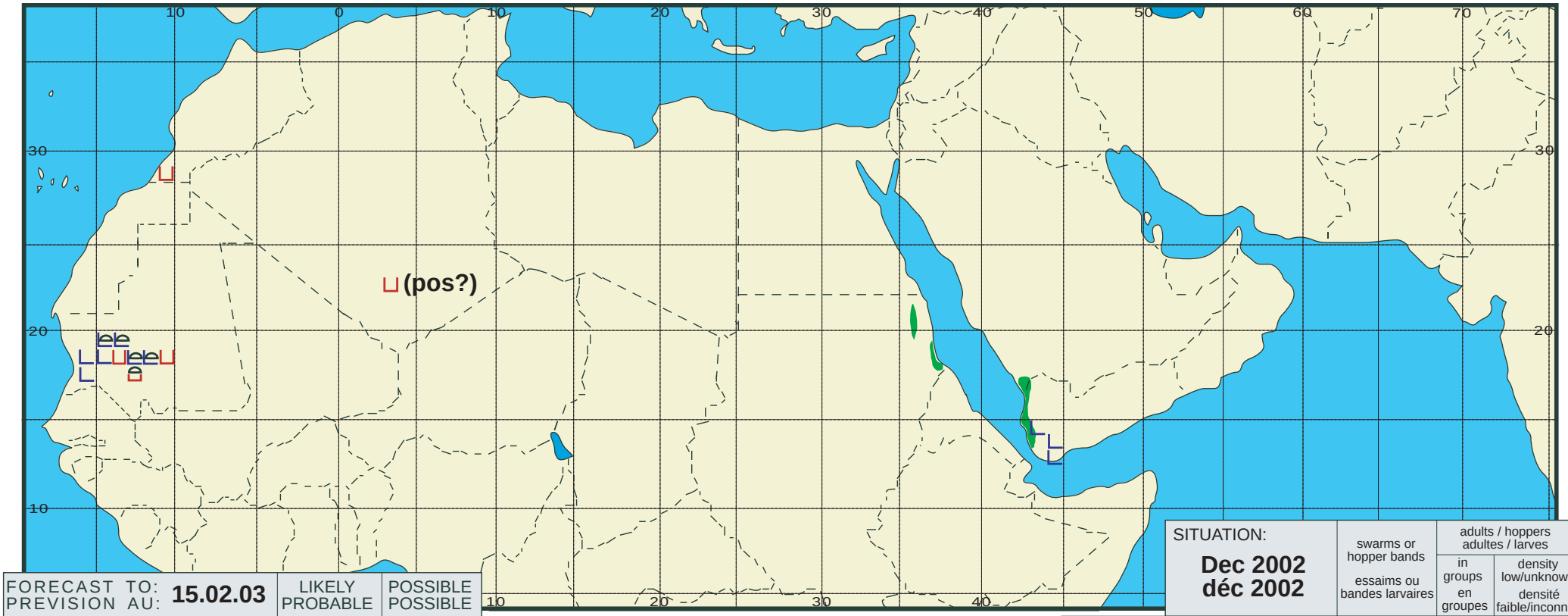

FORECAST TO: PREVISION AU: **15.02.03**	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favourables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: **Dec 2002 déc 2002**	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)	◘	◙	⊍