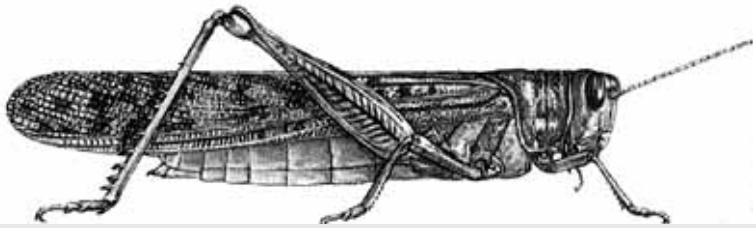

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations **No. 328**

(1 Feb 2006)

General Situation during January 2006 Forecast until mid-March 2006

The Desert Locust situation was calm during January. Small-scale breeding continued in Mauritania, Niger and Sudan but locust numbers remained low and only limited control operations were required in Mauritania. Although good rains fell at times in parts of the Sahara, low temperatures will delay locust maturation. Breeding is expected to continue along the Red Sea coast, primarily in Sudan and perhaps to a lesser extent in Eritrea and Yemen. Breeding should decline in Mauritania and Niger as vegetation dries out further. No significant developments are expected during the next six weeks.

Western Region. Small-scale breeding continued during January in western and central **Mauritania** where low numbers of late instar hoppers and adults were present. Ground control operations treated less than 100 ha. Only scattered adults were reported in northern Mauritania and similar populations are likely to be present in adjacent areas of **Western Sahara** where good rains fell at times during January. Limited breeding also occurred in Tamesna, **Niger** where low numbers of hoppers and adults were reported. A few adults may be present in parts of northern **Mali**. Small residual populations are likely to remain in these countries during the winter if ecological conditions remain favourable. No locusts were seen during surveys in southern and eastern **Algeria**.

Central Region. Small-scale breeding continued during January in the winter breeding areas along the Red Sea coast in **Sudan** where scattered hoppers and adults were present in the Tokar Delta. Isolated adults were seen in the interior of northeastern Sudan. Good rains fell along the Red Sea coast in southeastern **Egypt** but so far locusts have not been detected. Scattered locusts may be present and breeding on a small scale in a few places along the coast in **Eritrea** and **Yemen** where conditions remained favourable in January. Small-scale breeding is likely to continue in the winter breeding areas during February and, unless further rains fall, eventually come to an end by March. There were no other reports of locusts elsewhere in the region.

Eastern Region. Cool and mainly dry weather prevailed in the spring breeding areas in western **Pakistan** and southeastern **Iran** during January and no locusts were reported. Nevertheless, scattered adults are likely to be present in some areas and small-scale breeding should commence once temperatures increase.

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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/ag/locusts

Weather & Ecological Conditions in January 2006

Good rain fell in winter breeding areas on the Red Sea coast in southeast Egypt and breeding conditions were favourable in some coastal areas of Sudan, Eritrea and Yemen. Light rain fell in the winter breeding areas in northern Mauritania and Western Sahara where breeding conditions were favourable but temperatures were low. Dry conditions prevailed in western Pakistan and southeastern Iran.

In the **Western Region**, good rain fell at times during January in parts of the western and central Sahara. Dry weather prevailed during the first half of the month except for isolated showers in a few places in Western Sahara and northwest Mauritania. Localized showers also fell in southern Algeria and in northwest Libya. During the second half of January, widespread but light rain fell in parts of southern and eastern Algeria, extending to northwest Libya on the 18-20th and, again on the 22-25th from the Atlantic coast of Western Sahara and southwest Morocco to northern Mauritania and Algeria. Light rain may have fallen on the 26th in southeast Libya near Jebel Uweinat. Light rain fell at the end of the month along both sides of the Algerian/Libyan border. Although ecological conditions are likely to improve in some of these areas, low temperatures (less than 20°C during the day and close to 0°C at night) will limit breeding and delay egg development and locust maturation. In Western Sahara, breeding conditions were favourable in some places in the north between Laayoune and Smara. In Mauritania, vegetation continued to dry out in infested areas in central and western Mauritania near Tidjikja and Aftout Fai but was green in the north between Zouerate and Bir Moghrein. In northern Mali and Niger, conditions remained favourable enough to allow low numbers of locusts to survive in a few places in the Adrar des Iforas and Tamesna. In Algeria, green vegetation was limited to a few places south of Tamanrasset and along the Libyan border.

In the **Central Region**, very little rain fell in the winter breeding areas along both sides of the Red Sea during January except in southeast Egypt where good rains fell during the first decade along the coast and in subcoastal areas between Shalatyn and the Sudanese border. Breeding conditions are expected to become favourable in these areas in the coming weeks. Light rain fell on the 21st in a few places on the Sudanese coast. Ecological conditions remained favourable for breeding mainly in the Tokar Delta and in small areas south of Tokar to Mehimet in northern Eritrea. On 20-21 January, light rain fell on the plateau in northwest Somalia and along the coast in Djibouti. Although rain was not reported along the Red Sea coast in Yemen, breeding conditions remained favourable in some areas.

In the **Eastern Region**, cool and mainly dry weather prevailed during January in the spring breeding areas in Baluchistan in western Pakistan and southeastern Iran. Isolated light showers fell in a few places in Baluchistan, Pakistan along the coast near Lasbela and Pasni, and in the northern interior near Nushki.

Area Treated

Less than 100 ha were treated in January against small infestations in Mauritania.

Mauritania	278 ha (21-31 December 2005)
	73 ha (1-10 January 2006)

Note: Reporting delays and discrepancies may affect the accuracy of these figures.

Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• **SITUATION**

During January, locust infestations declined in western, central and northern regions. Most of the hoppers that were present in the Aftout Fai (1834N/1424W) area, north of Moudjeria (1752N/1219W) and near Tidjikja (1833N/1126W) had fledged by mid-month and, by the end of January, only a few fifth instar hoppers remained mixed with immature and mature adults. In the northwest, isolated mature adults were present near the coast at Banc d'Arguin in Inchiri. In the north, isolated immature and mature adults were present throughout the month near Zouerate (2244N/1221W) and Bir Moghrein (2510N/1135W). Ground teams treated 73 ha in the Aftout Fai area during the first decade of January.

• **Forecast**

Low numbers of solitarious adults are expected to persist in a few areas in Inchiri, Adrar and Tiris-Zemmour as well as in parts of Aftout Fai if conditions remain favourable. Small-scale breeding is likely to occur eventually in a few places in the north but low temperatures will delay egg and locust development.

Mali

• **Situation**

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

• **Forecast**

Isolated adults are likely to be present and will persist in the few places that remain green in the Tilemsi Valley, the Adrar des Iforas and Tamesna.

Niger

• **Situation**

During January, low numbers of second to fifth instar hoppers, at densities of 1-3 hoppers/bush, mixed with immature adults, at densities of less than 200 adults/ha, were present at a few places in Tamesna northwest and northeast of In Abangharit (1754N/0559E). No locusts were seen during surveys carried out in the Air Mountains.

• **Forecast**

Isolated adults are likely to persist in the few places that remain green in Tamesna and the Air Mountains.

Chad

• **Situation**

No reports were received during January.

• **Forecast**

No significant developments are likely.

Senegal

• **Situation**

No locusts were reported during the first two decades in January.

• **Forecast**

No significant developments are likely.

Benin, Burkina Faso, Cameroon, Cape Verde, Cote d'Ivoire, Gambia, Ghana, Guinea Bissau, Guinea, Liberia, Nigeria, Sierra Leone and Togo

• **Forecast**

No significant developments are likely.

Algeria

• **Situation**

No locusts were seen during surveys carried out in January southwest of Tamanrasset and along the Libyan border near Djanet and north of Illizi.

• **Forecast**

Isolated adults may persist in a few places along the southern side of the Hoggar Mountains.

Morocco

• **Situation**

No locusts were reported during January.

• **Forecast**

Scattered adults may be present in parts of Western Sahara and small-scale breeding could occur eventually in a few places but low temperatures will delay egg and locust development.

Libyan Arab Jamahiriya

• **Situation**

No locusts were reported during January.

• **Forecast**

Isolated locusts may be present and could persist in any areas that remain favourable in the southwest.

Tunisia

• **Situation**

No locusts were seen during surveys in the south along the Libyan and Algerian borders during January.

• **Forecast**

No significant developments are likely.

CENTRAL REGION

Sudan

• **Situation**

During January, scattered solitarious fourth and fifth instar hoppers and immature adults at densities up to 750 adults/ha persisted at several places in the Tokar Delta on the Red Sea coast. Further north in the interior near the Egyptian border, isolated solitarious mature adults were seen at one place in the Nubian Desert about 75 km west of W. Diib on the 25th. No locusts were seen elsewhere on the Red Sea coastal plains between Tokar and Port Sudan or along W. Diib.

• **Forecast**

Small-scale breeding is likely to continue during February in the Tokar Delta and locust numbers may increase slightly. By the end of the forecast period, breeding should come to an end as vegetation dries out and temperatures increase.

Eritrea

• **SITUATION**

No reports were received during January.

• **FORECAST**

Scattered locusts may be present and breeding on a small scale on the Red Sea coastal plains near Mehimet and Shelshela. If so, breeding could continue during February and locust numbers may increase slightly. By the end of the forecast period, breeding should come to an end as vegetation dries out and temperatures increase.

Ethiopia

• **SITUATION**

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

• **FORECAST**

No significant developments are likely.

Djibouti

• **SITUATION**

No locusts were reported during January.

• **FORECAST**

A few isolated adults could appear on the coastal plains between the capital and the Somali border.

Somalia

• **SITUATION**

No reports were received during January

• **FORECAST**

Isolated adults may be present on the northwest coast between Djibouti and Berbera and could breed on a limited scale if rainfall occurs.

Egypt

• **SITUATION**

No locusts were seen during surveys carried out in January along the Red Sea coast between Marsa Alam and the Sudanese border, in subcoastal areas along W. Diib and in the Red Sea Hills, along Lake Nasser and in Sh. Oweinat.

• **FORECAST**

Isolated adults may appear in the winter breeding areas along the Red Sea coast between Shalatyn and the Sudanese border and eventually breed if rainfall occurs.

Saudi Arabia

• **SITUATION**

No locusts were seen during surveys undertaken in January along the Red Sea coast and in the interior.

• **FORECAST**

Low numbers of solitarious adults may be present on the southern coastal plains of the Red Sea near Jizan and breed on a limited scale if rainfall occurs during the forecast period.

Yemen

• **SITUATION**

No surveys were undertaken and no locusts were reported during January.

• **FORECAST**

Scattered adults are likely to be present and breeding on a small scale along the Red Sea coastal plains and perhaps in a few places on the Gulf of Aden coast.

Oman

• **SITUATION**

No reports were received during January.

• **FORECAST**

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Lebanon, Palestine, Qatar, Syria, Tanzania, Turkey, UAE and Uganda

• **FORECAST**

No significant developments are likely.

EASTERN REGION

Iran

• **SITUATION**

No locusts were seen during surveys carried out in the southeast on 18-20 January.

• **FORECAST**

Low numbers of adults may be present in coastal and interior areas adjacent to Baluchistan, Pakistan. If so, small-scale breeding could eventually take place if rainfall occurs.

Pakistan

• **SITUATION**

No locusts were reported during the first half of January in Baluchistan. During the remainder of the month, no locusts were seen during surveys carried out near Turbat on the 24-27th.

• **FORECAST**

Scattered adults are likely to be present in parts of Baluchistan, mainly along the coast and in the Shooli area. Small-scale breeding may take place if rainfall occurs during the forecast period but low temperatures, especially in the interior, may delay hatching and hopper development.

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. During locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent twice/week and affected countries are encouraged to prepare decadal bulletins summarizing the situation. During recession periods, countries should report at least once/month. All information should be sent by e-mail to the FAO/ECLO Desert Locust Information Service (eclo@fao.org). Information received by the end of the month will be included in the FAO Desert Locust 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.

Desert Locust Mapper. The Locust Group has launched an updated version of the Desert Locust Mapper that allows users to access locust data, both historical and current, and display swarm, band, hopper and adult infestations on maps at different scales. See: www.fao.org/ag/locusts (Mapper)

eLocust2. FAO has developed a new version of eLocust in collaboration with affected countries and the French Space Agency (CNES/Novacom) that allows field officers to enter survey and control data directly in the field and transmit it in real time via satellite to their national locust centre. Data can also be downloaded to a PC. The software is in both English and French. FAO DLIS is currently distributing units to affected countries with the goal of becoming fully operational by this summer. Photos and more information are available at: www.fao.org/ag/locusts/en/activ/DLIS/index.html

Desert Locust environmental brochure. FAO has produced a brochure for the general public and donor community entitled *Fighting the Locusts… Safely*, available for download at www.fao.org/ag/locusts (Publications – documents). It is being translated into French and Arabic.

Publications on the Internet. New FAO publications and meeting reports are available for downloading at www.fao.org/ag/locusts (Publications):

- Report of the 3rd session of the FAO Commission for Controlling the Desert Locust in the Western Region (French, Arabic)
- Report of the 27th Executive Committee meeting of the FAO Commission for Controlling the Desert Locust in the Central Region (English, Arabic)

DLCC. The next session (38th) of the Desert Locust Control Committee (DLCC) has been postponed until 15-19 May so that a comprehensive report of an independent evaluation of the recent Desert Locust campaign can be presented and discussed.

2006 events. The following meetings are tentatively scheduled:

- **EMPRES/WR.** 4th Liaison Officers meeting, Algiers (Algeria), 25 February - 1 March
- **EMPRES/WR.** Steering committee meeting, Algiers (Algeria), 4-6 March
- **EMPRES/CR.** Advanced training for National Locust Information Officers (RAMSES/eLocust2), Cairo (Egypt), 19-23 March
- **SWAC.** 11th Desert Locust joint survey in the spring breeding areas of Iran and Pakistan, 1 April – 1 May
- **CRC.** 25th Session, Dubai (UAE), April
- **FAO/WMO.** Regional workshop on meteorological information for locust control – English-speaking countries, Oman, 8-12 April
- **DLCC.** 38th Session, Rome, 15-19 May
- **FAO Locust Group.** Extended Group meeting, Rome, 22-24 May
- **CLCPRO.** 2nd Session, end May or early June
- **SWAC.** 25th Session, Afghanistan or Iran, October

No. 328

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.

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

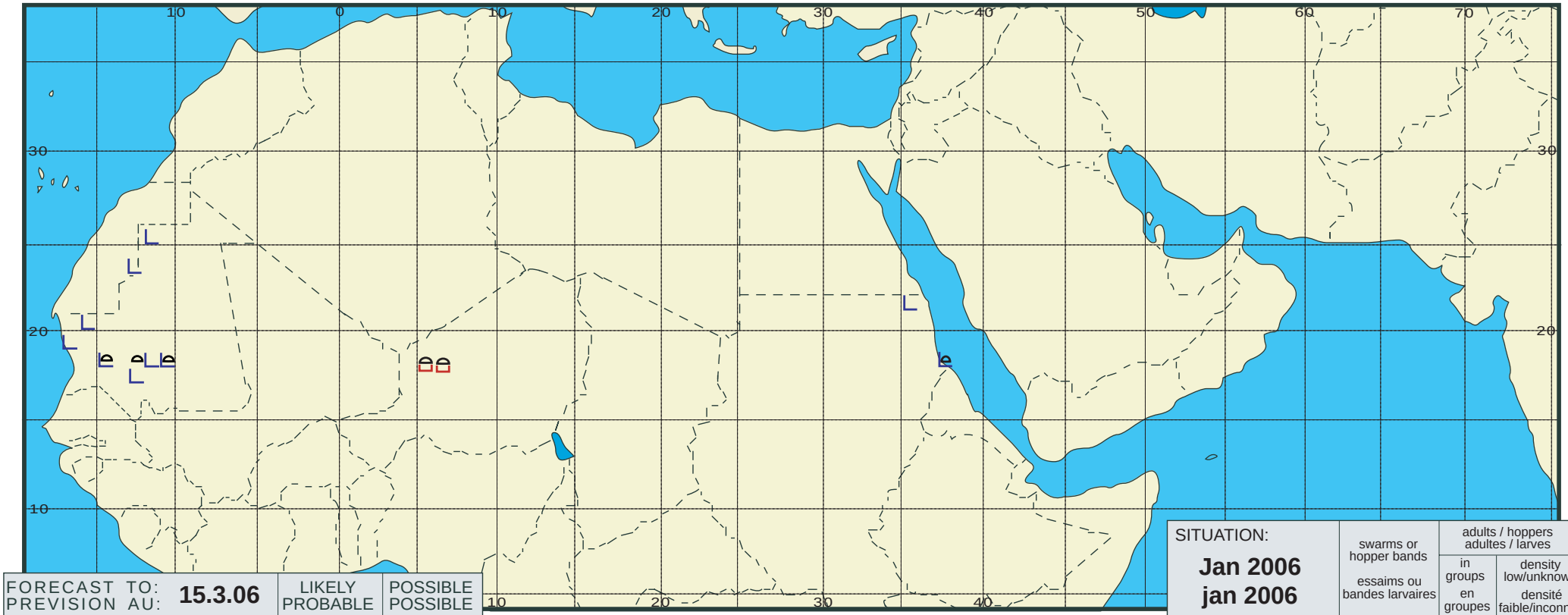
- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

EASTERN

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

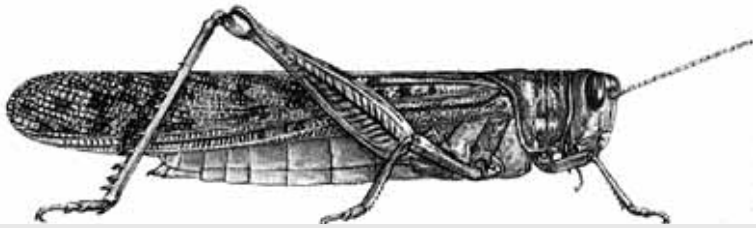
Desert Locust Summary
Criquet pèlerin - Situation résumée

328



FORECAST TO: PREVISION AU: **15.3.06**	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favourables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: **Jan 2006** **jan 2006**	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. 329**

(2 March 2006)

General Situation during February 2006 Forecast until mid-April 2006

The Desert Locust situation remained calm during February. Small-scale breeding by scattered adults occurred in northwest Mauritania and locust numbers increased slightly there and in the north of the country. Scattered adults were reported in southwest Libya and similar populations may be present in parts of Western Sahara and northern Mali and Niger. Small infestations persisted on the Red Sea coast in Sudan but no other locusts were seen in winter breeding areas along both sides of the Red Sea. Similarly, no locusts were reported in spring breeding areas in western Pakistan and eastern Iran. No significant developments are expected during the forecast period.

Western Region. There was a slight increase in solitarious locust adults in northwest and northern **Mauritania** during February, and localized breeding was reported at one location near Nouadhibou. If ecological conditions remain favourable and as temperatures increase during the forecast period, additional breeding could occur and cause locust numbers to increase slightly. Isolated adults may be present in adjacent areas of **Western Sahara**. Similar populations may also be present in a few places in northern **Mali** and **Niger** where surveys were not carried out in February. Scattered adults were present at one location in southwest **Libya**. No locusts were seen during surveys in **Morocco** and **Algeria**.

Central Region. In the winter breeding areas, only scattered adults were reported in the Tokar Delta and adjacent coastal areas in **Sudan**. Smaller populations were present on the northwest coast of northern **Somalia** and near Lake Nasser in **Egypt**. No significant developments are expected during the forecast period.

Eastern Region. No locusts were reported in the region although there is a slight possibility that scattered adults are present in parts of Baluchistan in western **Pakistan**. If ecological conditions are favourable, small-scale breeding could occur in a few places during the spring.

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Internet: www.fao.org
DLIS: www.fao.org/ag/locusts

Weather & Ecological Conditions in February 2006

Good rain fell in Northwest Africa where breeding conditions improved in northern Mauritania and perhaps in Western Sahara. Light to moderate rains fell at the end of the month in parts of the Central Region but ecological conditions remained unfavourable in most areas. Dry conditions prevailed in western Pakistan and southeastern Iran.

In the **Western Region**, light to moderate rainfall occurred during the first decade of February in parts of Western Sahara and in adjacent areas of northwest and northern Mauritania, extending to western Algeria (Tindouf, 79 mm). Light rains fell occasionally during the second decade in parts of the Sahara between northern Mali and western Libya. Showers associated with several eastward-moving Mediterranean depressions fell at times during the month in some places along the southern side of the Atlas Mountains in Morocco and Algeria as well as in northwest Libya. In Mauritania, breeding conditions improved in the north between Zouerate and Bir Moghrein but vegetation was drying out in previously infested areas in the centre and northwest of the country. In Western Sahara, annual vegetation was becoming green in parts of the north between Guelta Zemmur and Laayoune. In the Algerian Sahara, vegetation was green in the centre near Adrar and in the east near Illizi but was drying out in the south near Tamanrasset. Vegetation continued to dry out in northern Mali and northern Niger where only small localized areas of green vegetation persisted in parts of the Adrar des Iforas, Tamesna and the Air Mountains.

In the **Central Region**, dry weather prevailed during the first three weeks of February in the winter breeding areas along both sides of the Red Sea except for light rains in the Tokar Delta, Sudan. During the last week of February, good rains fell in coastal areas of Yemen (the Red Sea Tihama and near Aden), in the spring breeding areas in the interior of Saudi Arabia and in northern Oman. Although ecological conditions were dry in these areas, vegetation could become green in the coming weeks. Ecological conditions remained relatively dry along the Red Sea coast in southern Eritrea but were somewhat greener on the northern coastal plains and in southeastern Egypt. In Sudan, vegetation was drying out in the northern interior along Wadi Diib but remained green in the Tokar Delta and in a few places along the central coast. In northern Somalia, vegetation was starting to become green in some areas from rains that fell in January.

In the **Eastern Region**, cool and mainly dry weather prevailed during February in the spring breeding areas in Baluchistan in western Pakistan and southeastern Iran. Light rain may have fallen in some of these areas during the last week of February and ecological conditions are expected to be improving.

Area Treated

No control operations were reported during February.

Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• **SITUATION**

During February, low numbers of immature and mature solitarious adults persisted in central areas near Tidjikja (1833N/1126W) and in the Aftout Fai (1834N/1424W) area to the west. Locust numbers increased slightly in the northwest (Inchiri) and north (Tiris-Zemmour) as solitarious maturing adults were found at more locations between Nouadhibou (2054N/1701W) and Atar (2032N/1308W), and between Zouerate (2244N/1221W), Ghallaman (2410N/0952W) and Bir Moghrein (2510N/1135W). Localized breeding occurred near Nouadhibou close to the Western Sahara border where a few adults were copulating and isolated third to fifth instar hoppers were seen at mid-month.

• **FORECAST**

Low numbers of solitarious adults are expected to persist in parts of Inchiri, Adrar, Tiris-Zemmour and, if conditions remain favourable, in a few places of Aftout Fai. Small-scale breeding is likely to occur in the northwest and north where recent rains fell. Consequently, locust numbers will increase gradually in Inchiri and Tiris-Zemmour.

Mali

• **SITUATION**

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

• **FORECAST**

Isolated adults are likely to be present and will persist in the few places that remain green in the Tilemsi Valley, the Adrar des Iforas and Tamesna.

Niger

• **SITUATION**

No surveys were carried out and no locusts were reported during the first decade of February.

• **FORECAST**

Isolated adults are likely to persist in the few places that remain green in Tamesna and the Air Mountains.

Chad

• **SITUATION**

A late report indicated that the locust situation was calm from 21 December to 31 January. No reports were received during February.

• **FORECAST**

No significant developments are likely.

Senegal

• **SITUATION**

No reports were received during February.

• **FORECAST**

No significant developments are likely.

Benin, Burkina Faso, Cameroon, Cape Verde, Cote d'Ivoire, Gambia, Ghana, Guinea Bissau, Guinea, Liberia, Nigeria, Sierra Leone and Togo

• **FORECAST**

No significant developments are likely.

Algeria

• **SITUATION**

No locusts were seen during surveys carried out in February in the central Sahara near Adrar, in the east from Djanet to the Tunisian/Libyan border, and in the south near Tamanrasset and Bir Bou Mokhtar.

• **FORECAST**

Isolated adults may persist in a few places in the central and eastern Sahara. Low numbers of adults may be present in the west near Tindouf. Small-scale breeding could occur once temperatures warm up in areas of recent rainfall.

Morocco

• **SITUATION**

No locusts were seen during surveys carried out in mid February south of Tan-tan (2827N/1109W) and in the Western Sahara between Guelta Zemmur (2508N/1223W), Laayoune (2708N/1313W) and Smara (2644N/1142W).

• **FORECAST**

Scattered adults may be present in parts of Western Sahara and small-scale breeding could occur in a few places.

Libyan Arab Jamahiriya

• **SITUATION**

During February, scattered solitarious adults were present in the southwest near Ghat in Wadi Flazliz (2641N/1009E) at mid-month.

• **FORECAST**

Low numbers of adults are expected to persist in the southwest near Ghat. If conditions are favourable and as temperatures increase, small-scale breeding could occur.

Tunisia

• **SITUATION**

No locusts were reported during February.

• **FORECAST**

No significant developments are likely.

CENTRAL REGION

Sudan

• **SITUATION**

During February, scattered adults at densities up to 800 adults/ha persisted in the Tokar Delta where they continued to mature. Low numbers of adults were also present in a few places along the coast between Tokar (1827N3741E) and Suakin (1908N/3717E). No locusts were seen further north in the interior along W. Diib up to 12 February.

• **FORECAST**

Unless further rainfall occurs, breeding should come to an end along the Red Sea coastal plains and only low numbers of solitarious adults are expected to remain in the Tokar Delta.

Eritrea

• **SITUATION**

No locusts were seen during surveys carried out along the Red Sea coastal plains between Tio (1441N/4057E) and Mehimet (1723N/3833E) from 30 January to 9 February.

• **FORECAST**

Scattered locusts may be present and could breed on a limited basis in the few places that remain green on the Red Sea coastal plains north of Massawa.

Ethiopia

• **Situation**

No locusts were seen during surveys carried out on 1 February in the Dire Dawa region.

• **Forecast**

No significant developments are likely.

Djibouti

• **Situation**

No locusts were reported during February.

• **Forecast**

No significant developments are likely.

Somalia

• **Situation**

No locusts were seen during surveys carried out on 24 to 29 January on the escarpment and along the coast between Hargeisa (0931N/4402E) and Berbera (1028N/4502E).

During February, isolated mature adults were present at five places on the coastal plains west of Berbera from the 16th to the 22nd. No locusts were seen on the escarpment.

• **Forecast**

Isolated adults will persist on the northwest coast between Djibouti and Berbera and could breed on a limited scale in areas of recent rainfall.

Egypt

• **Situation**

During February, isolated mature adults were seen in an agricultural area along the shores of Lake Nasser. Elsewhere, no locusts were seen during surveys carried out along the Red Sea coast between Marsa Alam and the Sudanese border, in subcoastal areas along W. Diib, in the Red Sea Hills and in the Western Desert at Sh. Oweinat.

• **Forecast**

Isolated adults may appear in the winter breeding areas along the Red Sea coast between Shalatyn and the Sudanese border and perhaps breed if rainfall occurs.

Saudi Arabia

• **Situation**

No locusts were seen during February along the central Red Sea coastal plains and in the spring breeding areas in the interior.

• **Forecast**

No significant developments are likely.

Yemen

• **Situation**

No locusts were seen during surveys carried out in February on the Red Sea coastal plains between Bayt Al Faqih (1430N4317E) and the Saudi Arabian border and on the Gulf of Aden coast near Aden (1250N/4503E).

• **Forecast**

Isolated adults may be present and could persist in any areas that remain green on the coastal plains of the Red Sea and Gulf of Aden. Breeding is unlikely unless further rainfall occurs.

Oman

• **Situation**

No locusts were seen during survey carried out in January and February in the interior and on the coastal plains of the north.

• **Forecast**

Scattered adults may appear on the Batinah coast and perhaps in the northern interior where they could breed on a small-scale in areas of recent rainfall.

Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Lebanon, Palestine, Qatar, Syria, Tanzania, Turkey, UAE and Uganda

• **Forecast**

No significant developments are likely.

EASTERN REGION

Iran

• **Situation**

No locusts were seen during surveys carried out on the southern coastal plains between Jask (2540N/5746E) and Chabahar (2517N/6036E) on 17-18 February.

• **Forecast**

Low numbers of adults may be present in coastal and interior areas adjacent to Baluchistan, Pakistan. If so, small-scale breeding could take place if rainfall occurs.

Pakistan

• **Situation**

The situation was reported to calm during the first half of February.

• **Forecast**

Scattered adults are likely to be present in parts of Baluchistan, mainly along the coast and in the Shooli area. Small-scale breeding will occur in those places where rains have recently fallen. Low temperatures, especially in the interior, may delay hatching and hopper development.

India

• **Situation**

No locusts were seen during surveys carried out in Rajasthan during the second half of January and first half of February.

• **Forecast**

No significant developments are likely.

Afghanistan

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Announcements

Locust reporting. During locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent twice/week and affected countries are encouraged to prepare decadal bulletins summarizing the situation. During recession periods, countries should report at least once/month and send RAMSES data with a brief interpretation. All information should be sent by e-mail to the FAO/ECLO Desert Locust Information Service (eclo@fao.org). Information received by the end of the month will be included in the FAO Desert Locust 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.

Desert Locust Mapper. The Locust Group has launched an updated version of the Desert Locust Mapper that allows users to access locust data, both historical and current, and display swarm, band, hopper and adult infestations on maps at different scales. See: www.fao.org/ag/locusts (Mapper)

eLocust2. FAO has developed a new version of eLocust in collaboration with affected countries and the French Space Agency (CNES/Novacom) that allows field officers to enter survey and control data directly in the field and transmit it in real time via satellite to their national locust centre. Data can also be downloaded to a PC. The software is in both English and French. FAO DLIS is currently distributing units to affected countries with the goal of becoming fully operational by this summer. Photos and more information are available at: www.fao.org/ag/locusts/en/activ/DLIS/index.html

Publications on the Internet. New FAO publications and meeting reports are available for downloading at www.fao.org/ag/locusts (Publications):

- Report of the 3rd session of the FAO Commission for Controlling the Desert Locust in the Western Region (French, Arabic)
- Report of the 27th Executive Committee meeting of the FAO Commission for Controlling the Desert Locust in the Central Region (English, Arabic)

2006 events. The following meetings are tentatively scheduled:

- **EMPRES/CR.** Advanced training for National Locust Information Officers (RAMSES/eLocust2), Cairo (Egypt), 19-23 March
- **SWAC.** 11th Desert Locust joint survey in the spring breeding areas of Iran and Pakistan, 1 April – 1 May
- **FAO/WMO.** Regional workshop on meteorological information for locust control – English-speaking countries, Oman, 8-12 April
- **FAO/World Bank.** Pesticide management workshop, Bamako (Mali), 10-14 April
- **DLCC.** 38th Session, Rome, 15-19 May
- **FAO Locust Group.** Extended Group meeting, Rome, 22-24 May
- **EMPRES/WR.** Advanced training for National Locust Information Officers (RAMSES/eLocust2), June
- **CLCPRO.** 2nd Session, June
- **CRC.** 25th Session, Doha (Qatar), 8-12 July
- **SWAC.** 25th Session, Tehran (Iran), November
- **EMPRES/CR.** 14th Liaison Officer Meeting, Oman, November
- **EMPRES/WR.** 5th Liaison Officer Meeting, December

No. 239

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.

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

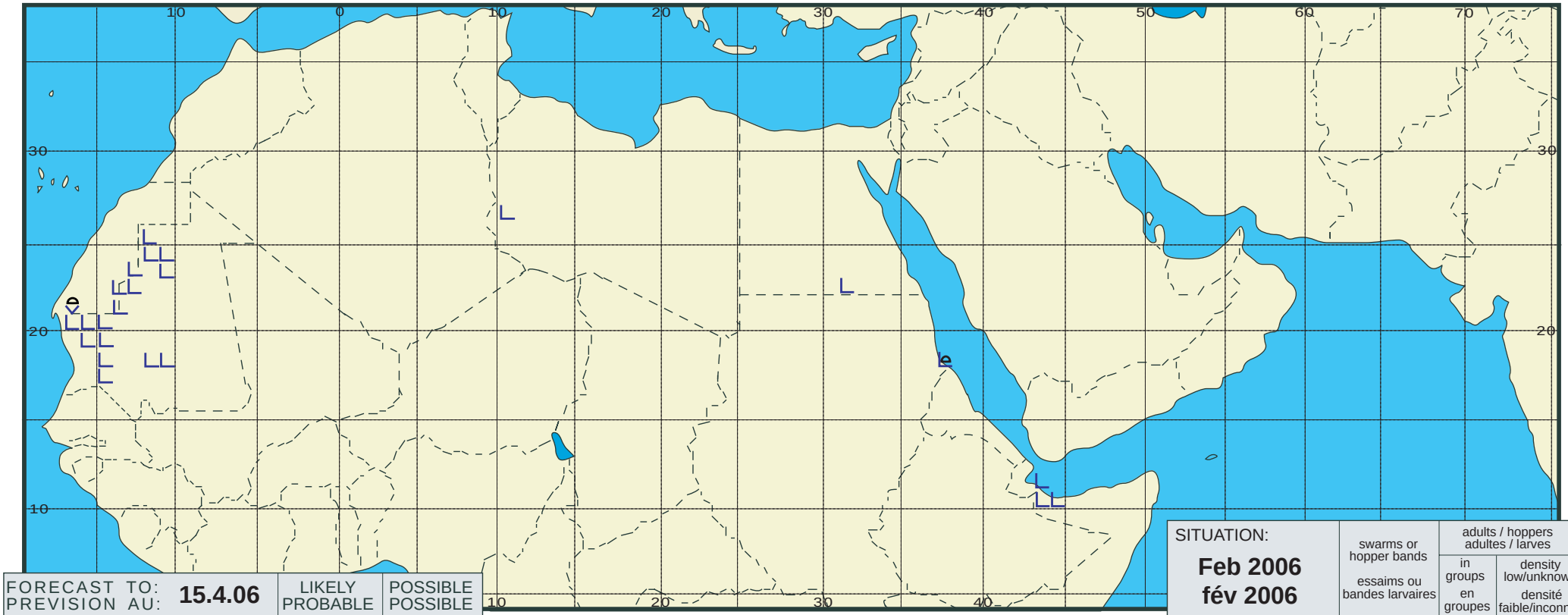
- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

EASTERN

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

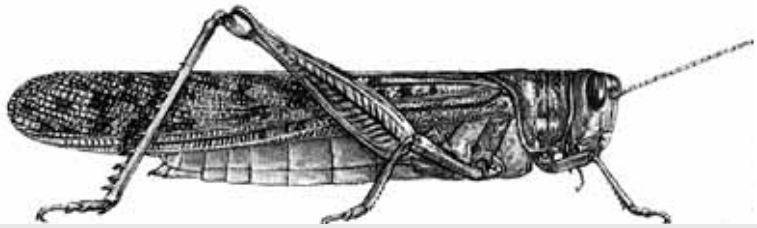
Desert Locust Summary
Criquet pèlerin - Situation résumée

329



FORECAST TO: PREVISION AU: **15.4.06**	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 2006 fév 2006**	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. 330**

(3 April 2006)

General Situation during March 2006
Forecast until mid-May 2006

The Desert Locust situation remained calm during March. Low numbers of solitarious adults were present in parts of Northwest Africa and small-scale breeding occurred in northwest Mauritania. Limited control operations were undertaken against solitarious adults that were breeding in Algeria and Libya. In the Central Region, locusts declined along the Red Sea coast as vegetation dried out. No locusts were reported in the spring breeding areas in western Pakistan and southeastern Iran. During the forecast period, locust numbers may increase slightly in northern Mauritania as a result of small-scale breeding.

Western Region. Scattered adults were maturing in northwest and northern **Mauritania** during March, and small-scale breeding was in progress in one area. More breeding could occur in April and extend to the north if ecological conditions remain favourable but locust numbers are expected to remain low. Isolated adults were present in southern **Western Sahara** and in southwest **Morocco** where breeding may take place in the coming weeks. Ground teams treated 30 ha of copulating adults in eastern **Algeria** and 150 ha of solitarious and *transiens* adults that were forming a few small groups and laying eggs in southwest **Libya**. Limited breeding could continue in a few places of both countries during the forecast period. Isolated adults may be present in a few places in northern **Mali** and **Niger**.

Central Region. Locusts declined in the winter breeding areas along the Red Sea coast in **Sudan** and only isolated adults remained in the Tokar Delta by the end of March. No locusts were reported elsewhere in the region, and no significant developments are expected during the forecast period.

Eastern Region. No locusts were reported in the region although there is a possibility that scattered adults are present in parts of the spring breeding areas in Baluchistan, western **Pakistan**. If ecological conditions are favourable, small-scale breeding could occur in a few places 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 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/ag/locusts

No. 330

DESERT LOCUST BULLETIN

Weather & Ecological Conditions in March 2006

Although little rain fell in Northwest Africa, ecological conditions remained favourable in parts of Mauritania, Western Sahara, Algeria and Libya. Good rains fell in the spring breeding areas in Saudi Arabia and vegetation was drying out along both sides of the Red Sea. Dry conditions prevailed in the spring breeding areas in western Pakistan and southeastern Iran.

In the **Western Region**, dry weather prevailed in most countries during March. During the first half of the month, light rain may have fallen in southern Algeria (on the 5th), in northeast Niger (8-9th), in southern Libya (9-10th), in the Tibesti Mountains in northwest Chad (14th) and in southeast Libya near the Sudan/Chad border. During the second half of March, light rain fell along the Atlantic coast in Morocco between Sidi Ifni and Agadir from the 19th to the 21st and in southeast Libya at Kufra Oasis. Even though little rain fell during March, ecological conditions were favourable for locust survival and breeding in parts of Mauritania in the northwest (Dakhlet Nouadhibou) and in the north (Zouerate to Bir Moghrein), in the northern Western Sahara between Smara and Laayoune, along some places of the Draa Valley in southwest Morocco, near Tamanrasset and Illizi in southern and eastern Algeria, and near Ghat in southwest Libya.

In the **Central Region**, good rains fell in parts of the Arabian Peninsula at the end of March. Heavy rain was reported in the spring breeding areas in central Saudi Arabia at Gassim, Hail and Riyadh, moderate to heavy rains fell in the Marib, Al-Jawf and Shabwah regions in the interior of Yemen, and light rain fell on the edge of the Empty Quarter near Sharurah, Saudi Arabia. Lighter rain fell at mid-month along parts of the Red Sea coast in Yemen and perhaps in Eritrea between Massawa and Tio. Ecological conditions were improving in the interior of Saudi Arabia but vegetation was drying out on the coastal plains on both sides of the Red Sea. In Djibouti, vegetation was becoming green along the coast between Tadjourah and Obock, and in northern Oman along the Batinah coast.

In the **Eastern Region**, unusual rains fell along the Indo-Pakistan border in mid-March. Most of the rain fell in Rajasthan, India near Barmer (54 mm), Jaisalmer (23 mm) and Bikaner (17 mm), and in adjacent areas of southeast Pakistan near Chhor (12 mm). In the spring breeding areas of Baluchistan, Pakistan, light rain fell in the north at Dalbandin and Nokkundi, and on the coast near Pasni and Jiwani. In the adjacent areas in southeast Iran, light rain fell at Saravan. Consequently, ecological conditions were improving in parts of the spring breeding areas in Pakistan and Iran.

Area Treated

During March, limited ground control operations were conducted in two countries:

Algeria	30 ha
Libya	150 ha

Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• **SITUATION**

During March, scattered immature and mature adults were present in the northwest, mainly in the Dakhlet Nouadhibou region where isolated fourth and fifth instar hoppers were also reported, and to a lesser extent in northern Inchiri and near Tmeimichat (2119N/1420W). In the north (Tiris-Zemmour), low numbers of solitarious adults were scattered between Zouerate (2244N/1221W), Ghallaman (2410N/0952W) and Bir Moghrein (2510N/1135W). By mid-month, adult densities had increased in a few places near Zouerate to 100-380 adults/ha and some adults were seen copulating. In Dakhlet Nouadhibou, additional hatching occurred during the second decade and low numbers of solitarious hoppers of all instars were present in a few places.

• **FORECAST**

Low numbers of solitarious adults are expected to persist in parts of the northwest and north. Small-scale breeding is likely to continue in the northwest and may commence in the north in areas where ecological conditions remain favourable. Consequently, locust numbers will increase gradually in Dakhlet Nouadhibou, Inchiri, southwest Adrar and Tiris-Zemmour regions.

Mali

• **SITUATION**

No locusts were reported during March.

• **FORECAST**

Isolated adults may be present in a few places in the Adrar des Iforas.

Niger

• **SITUATION**

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

• **FORECAST**

Isolated adults may be present in a few places in the Air Mountains.

Chad

• **SITUATION**

A late report indicated that no surveys were carried out and no locusts were reported during February.

• **FORECAST**

No significant developments are likely.

Senegal

• **SITUATION**

No locusts were reported up to 25 March.

• **FORECAST**

No significant developments are likely.

Benin, Burkina Faso, Cameroon, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea Bissau, Guinea, Liberia, Nigeria, Sierra Leone and Togo

• **FORECAST**

No significant developments are likely.

Algeria

• **SITUATION**

During March, solitarious immature and mature adults were present at a few places near Illizi (2630N/0825E) at densities of up to 200 adults/ha. At mid-month, ground control operations treated 30 ha of copulating adults at one location. No locusts were seen during surveys near Tamanrasset, west of Djanet and near the Tunisian/Libyan border.

• **FORECAST**

Low numbers of adults are likely to persist in a few places in the central and eastern Sahara, and low numbers of adults may be present in the west near Tindouf. Small-scale breeding could take place in those areas where conditions are favourable.

Morocco

• **SITUATION**

During March, a few solitarious adults were seen near Tan-tan (2827N/1109W) and nomads reported isolated adults in the southern part of Western Sahara near Bir Anzarane (2353N/1431W), near the coast south of Dakhla (2343N/1557W) and in the Adrar Settouf in W. Jalwa (2152N/1543W).

• **FORECAST**

Scattered adults are expected to persist and breed on a small-scale in parts of Western Sahara and the southwestern extreme of the Draa Valley.

Libyan Arab Jamahiriya

• **SITUATION**

During March, scattered solitarious adults persisted in the southwest near Ghat (2459N/1011E). Ground control teams treated 150 ha of solitarious adult groups mixed with a few *transiens*, at densities of 2-3 adults/m^2, that were seen copulating and laying in Wadi Intalug (2607N/0932E) on 21-22 March.

• **FORECAST**

Hatching is expected to commence early in the forecast period near Ghat and hoppers could form a few small groups.

Tunisia

• **SITUATION**

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

• **FORECAST**

No significant developments are likely.

CENTRAL REGION

Sudan

• **SITUATION**

During March, solitarious adults persisted and continued to mature in the Tokar Delta but locust numbers were much lower than in February. By the end of the month, only isolated adults remained in a few places in Tokar and no further adults were seen elsewhere along the Red Sea coastal plains. No locusts were seen further north along the Egyptian border or in W. Diib during a Joint Survey with Egypt.

• **FORECAST**

No significant developments are likely.

Eritrea

• **SITUATION**

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

• **FORECAST**

Isolated locusts may be present in a few places that remain green on the Red Sea coastal plains north of Massawa.

Ethiopia

• **SITUATION**

No locusts were seen during surveys carried out on 16-17 March in the Somali region.

• **FORECAST**

No significant developments are likely.

Djibouti

• **SITUATION**

No locusts were reported during March.

• **FORECAST**

No significant developments are likely.

Somalia

• **SITUATION**

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

• **FORECAST**

Isolated adults may be present in a few places on the northwest coast between Djibouti and Berbera.

Egypt

• **SITUATION**

During March, no locusts were seen during a joint Egyptian/Sudanese survey carried out on the Red Sea coast and in subcoastal areas along their common border. No locusts were seen during other surveys undertaken along Lake Nasser, in the Western Desert at Sh. Oweinat and on the Sinai Peninsula.

• **FORECAST**

No significant developments are likely.

Saudi Arabia

• **SITUATION**

No locusts were seen during March along the central Red Sea coastal plains and in the spring breeding areas in the interior.

• **FORECAST**

No significant developments are likely.

Yemen

• **SITUATION**

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

• **FORECAST**

Isolated adults may be present and could persist in any areas that remain green on the coastal plains of the Red Sea and Gulf of Aden. Small-scale breeding could occur in areas of recent rainfall.

Oman

• **SITUATION**

No locusts were seen during surveys carried out in March in the interior and on the coastal plains of the north.

• **FORECAST**

Isolated adults may appear on the Batinah coast and perhaps in the northern interior where they could breed on a small-scale in areas of recent rainfall.

Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Lebanon, Palestine, Qatar, Syria, Tanzania, Turkey, UAE and Uganda

• **FORECAST**

No significant developments are likely.

EASTERN REGION

Iran

• **SITUATION**

No locusts were seen during surveys carried out on the southern coastal plains near Chabahar (2517N/6036E) and in the interior near Iranshahr (2715N/6141E) on 13-14 March.

• **FORECAST**

Low numbers of adults may be present in coastal and interior areas adjacent to Baluchistan, Pakistan. If so, small-scale breeding could take place if rainfall occurs.

Pakistan

• **SITUATION**

During the second half of February, no locusts were seen during surveys carried out in coastal and interior areas of Baluchistan.

No locust reports were received during March.

• **FORECAST**

Scattered adults are likely to be present in parts of Baluchistan, mainly along the coast and in the Shooli area. Small-scale breeding will take place if rainfall occurs.

India

• **SITUATION**

No locusts were seen during surveys carried out in Rajasthan during the second half of February and all of March.

• **FORECAST**

No significant developments are likely.

Afghanistan

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Announcements

Locust reporting. During locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent twice/week and affected countries are encouraged to prepare decadal bulletins summarizing the situation. During recession periods, countries should report at least once/month and send RAMSES data with a brief interpretation. All information should be sent by e-mail to the FAO/ECLO Desert Locust Information Service (eclo@fao.org). Information received by the end of the month will be included in the FAO Desert Locust 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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Desert Locust warning levels. DLIS has initiated an experimental colour-coded scheme on the Locust Watch web page to indicate the seriousness of the current Desert Locust situation: green for *calm*, yellow for *caution* and red for *danger*. The levels indicate the perceived risk or threat of current Desert Locust infestations to crops and appropriate actions are suggested for each level. Your feedback on the usefulness of this scheme and any suggested improvements is welcome.

New information on Locust Watch. New material is available on the Locust Group's web page, Locust Watch (www.fao.org/ag/locusts):

- Report of the 13th EMPRES/CR Liaison Officers meeting (English) – Publications section
- EMPRES/CRC regional workshop on RAMSES, eLocust2 and remote sensing – Activities section

2006 events. The following meetings are tentatively scheduled:

- **SWAC.** 11th Desert Locust joint survey in the spring breeding areas of Iran and Pakistan, 1 April – 1 May
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- **EMPRES/CR.** 14th Liaison Officer Meeting, Muscat (Oman), 11-15 November
- **SWAC.** 25th Session, Tehran (Iran), 20-23 November
- **EMPRES/WR and CLCPRO.** 5th EMPRES Liaison Officer Meeting and 2nd Session CLCPRO, Nouakchott (Mauritania), December

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

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

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SPRING RAINS AND BREEDING

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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.

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, Niger, Senegal, Tunisia; during plagues only: Burkino Faso, Cape Verde, Gambia, Guinea and Guinea-Bissau.

CENTRAL

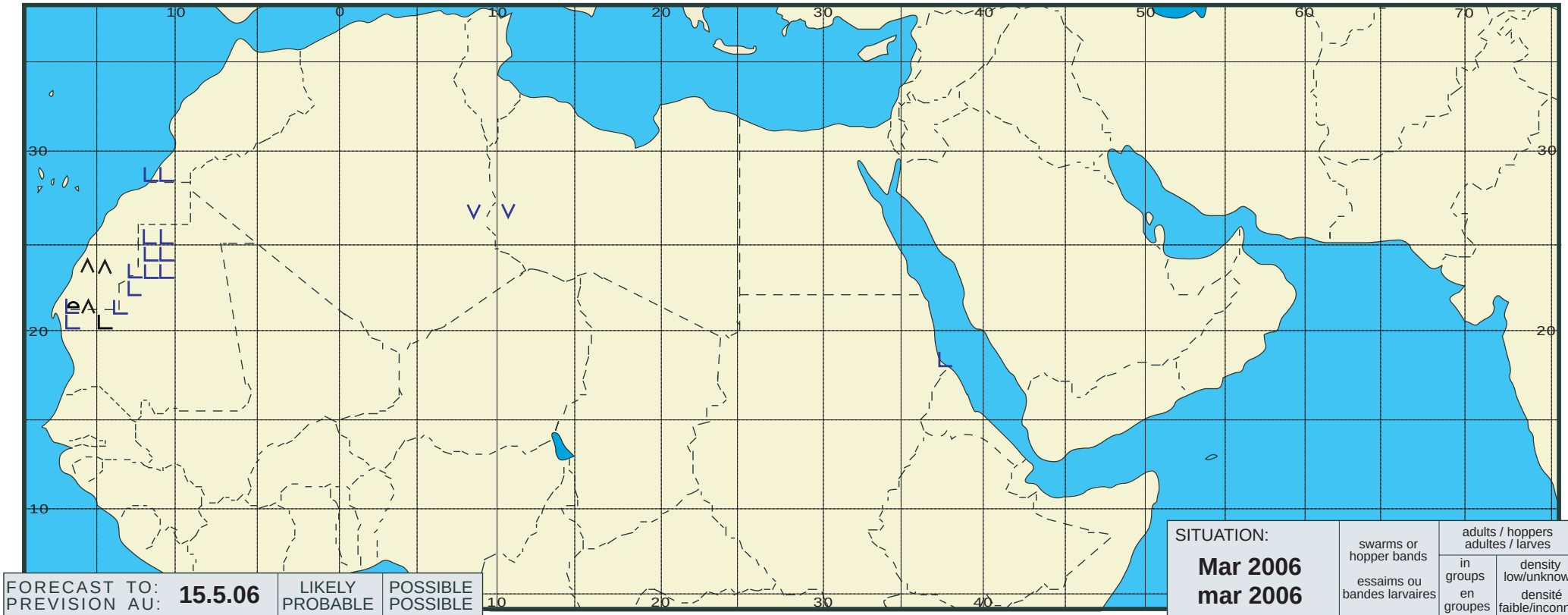
- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

EASTERN

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

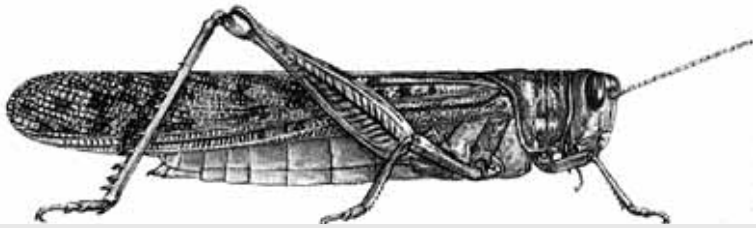
Desert Locust Summary
Criquet pèlerin - Situation résumée

330



FORECAST TO: / PREVISION AU: **15.5.06**	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: **Mar 2006 mar 2006**	swarms or hopper bands essaims ou bandes larvaires	adults / hoppers adultes / larves in groups en groupes	adults / hoppers adultes / larves 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. 331**

(2 May 2006)

General Situation during April 2006
Forecast until mid-June 2006

The Desert Locust situation remained calm during April. Small-scale breeding occurred in northwest Mauritania, near the Algerian border in Morocco, and in the eastern Sahara in Algeria. Low numbers of solitarious adults were present in parts of northern Mauritania and northern Mali. No locusts were reported in other regions where rainfall was poor and conditions were generally dry. During the forecast period, limited hatching will occur in Morocco and some breeding could take place in parts of northern Mauritania and Western Sahara. No significant developments are expected.

Western Region. Isolated solitarious adults were maturing in northern **Mauritania** during April, and small-scale breeding continued in a small area in the northwest. The situation may be similar in adjacent areas of **Western Sahara**. Unless further rainfall occurs, locusts will decline and start to move in May towards the summer breeding areas in southern Mauritania. Small-scale breeding is in progress in a limited area along the Algerian border in **Morocco** where hatching is likely in early May, giving rise to low numbers of solitarious hoppers that should fledge and become adults by mid-June. Local breeding also occurred in the eastern Sahara in **Algeria** where ground teams treated 20 ha of hoppers. A few isolated individual solitarious adults were reported on the Tamesna Plains in northeast **Mali**. Similar populations could be present in the Air Mountains in **Niger**.

Central Region. Although no locusts were reported in the region during April, there is a possibility of low numbers of solitarious adults on the Red Sea coastal plains in **Yemen**. As good rains fell early in the month over the southwestern part of the Arabian Peninsula, small-scale breeding could occur on the coast near the Yemen / Saudi Arabia border.

Eastern Region. No locusts were seen during a joint survey in the spring breeding areas in eastern **Iran** and western **Pakistan** in April. Although light rain fell at times, breeding conditions were generally unfavourable. By the end of the forecast period, a few isolated adults may start to appear in the summer breeding areas along the Indo-Pakistan border but no significant developments are expected.

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E-mail: eclo@fao.org
Internet: www.fao.org
DLIS: www.fao.org/ag/locusts

No. 331

DESERT LOCUST BULLETIN

Weather & Ecological Conditions in April 2006

Good rains fell over the southwestern part of the Arabian Peninsula in early April. Elsewhere in the recession area, ecological conditions remained generally unfavourable for breeding except for a few places in Northwest Africa.

In the **Western Region**, light to moderate rain fell in a few places at times during April. In northern Mauritania, moderate rainfall was reported in Tiris-Zemmour between Zouerate and Bir Moghrein. Vegetation was green near Zouerate but dry elsewhere in the north as well as in the northwest (Dakhlet Nouadhibou and Inchiri). Mainly dry conditions persisted in the Algerian Sahara except in the east near In Amenas, Illizi and Djanet where vegetation was green in a few places. Dry conditions also prevailed in northern Mali and Niger except for a few isolated patches of green vegetation in the Adrar des Iforas between Aguelhoc and Kidal in Mali. In the spring breeding areas, light rain fell in a few places along the southern side of the Atlas Mountains in Morocco and Algeria, and in northwest Libya. Breeding conditions were improving in some areas, mainly in the Ziz and Ghris Valleys in Morocco as well as along some wadis in the Western Sahara between Laayoune and Smara.

In the **Central Region**, light to moderate rains fell during the first decade of April over the Arabian Peninsula from the Red Sea coast of Yemen to the central interior of Yemen and Saudi Arabia. Rainfall was heaviest on the northern Tihama coast in Yemen and some flooding was reported between Al-Zuhra and the Saudi Arabian border. Light to moderate rain also fell at times during the first half of April in northern Oman, mainly along the Batinah coast and in the interior near UAE. In Eritrea, rain was reported on the coast near Massawa. Unfavourable breeding conditions prevailed along the Red Sea coast in Sudan and Egypt. Vegetation was drying out along the coast in Djibouti.

In the **Eastern Region**, showers fell at times during the first half of April in parts of the spring breeding areas in Baluchistan in eastern Iran and western Pakistan. In Iran, light rain was reported along the southeastern coast between Jask and the Pakistani border and in the interior in the Jaz Murian Basin. In Pakistan, light to moderate rain fell in a few places of the interior in Baluchistan near Panjgur. Despite these rains, vegetation remained mostly dry and ecological conditions were not favourable for breeding.

Area Treated

Algeria	20 ha	(24 April)

Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• **SITUATION**

During the first decade of April, isolated first to fifth instar solitarious hoppers were present at a few locations in the northwest about 60 km east of Nouadhibou (2054N/1701W). In the north, isolated immature and mature solitarious adults were present between Zouerate (2244N/1221W) and Bir Moghrein (2510N/1135W).

• **FORECAST**

Unless further rainfall occurs, locust numbers will decline in the northwest and north. Adults are expected gradually to move southwards and, by the end of the forecast period, they could start to appear in the summer breeding areas of the south.

Mali

• **SITUATION**

Isolated immature and mature solitarious adults were seen at two places on the Tamesna Plains about 75 km east of Tin Essako (1826N/0229E) during the last half of April.

• **FORECAST**

Isolated adults may be present in a few places in the Adrar des Iforas. A few adults could eventually appear from the Algerian Sahara at the end of the forecast period.

Niger

• **SITUATION**

No surveys were carried out and no locusts were reported up to 20 April.

• **FORECAST**

Isolated adults may be present in a few places in the Air Mountains. A few adults could eventually

appear from the Algerian Sahara at the end of the forecast period.

Chad

• **SITUATION**

No locusts were reported during April.

• **FORECAST**

No significant developments are likely.

Senegal

• **SITUATION**

No locusts were reported up to 28 April.

• **FORECAST**

No significant developments are likely.

Benin, Burkina Faso, Cameroon, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea Bissau, Guinea, Liberia, Nigeria, Sierra Leone and Togo

• **FORECAST**

No significant developments are likely.

Algeria

• **SITUATION**

During April, local breeding occurred at one place in the eastern Sahara where solitarious and transiens second and third instar hoppers were present at densities up to 80 hoppers/bush on the 24th near Illizi (2630N/0825E). Ground control operations treated 20 ha. Elsewhere, no locusts were seen during surveys carried out in the central Sahara north of Adrar (2753N/0017W), in the south near the Malian border and in the east along the Libyan border between In Amenas (2803N/0933E) and Djanet (2434N/0930E).

• **FORECAST**

Small-scale breeding will continue near Illizi where new adults could start to appear by the end of May. Low numbers of adults may be present in a few other places in the central and eastern Sahara and limited breeding could occur in those areas that received recent rainfall. These adults may gradually move south towards the summer breeding areas in the northern Sahel.

Morocco

• **SITUATION**

During the first decade of April, scattered mature solitarious adults, at densities up to 200 adults/ha, were seen laying eggs in the spring breeding areas south of Erfoud (3128N/0410W) and near the Algerian border in Wadi Ziz and in the Dayt Maader Basin (3045N/0446W).

• **FORECAST**

Small-scale hatching is likely to occur early in the forecast period south of Erfoud, giving rise to low numbers of hoppers that should fledge by the end of the forecast period. Scattered adults are likely to be present in parts of the Western Sahara where small-scale breeding could occur in favourable areas.

Libyan Arab Jamahiriya

• **SITUATION**

No locusts were reported during April.

• **FORECAST**

Low numbers of hoppers and adults may be present in areas of previous breeding near Ghat.

Tunisia

• **SITUATION**

No reports were received during April.

• **FORECAST**

No significant developments are likely.

CENTRAL REGION

Sudan

• **SITUATION**

No locusts were seen during surveys carried out on the Red Sea coast in the Tokar Delta in April.

• **FORECAST**

Isolated adults may start to appear in a few places in the summer breeding areas at the end of the forecast period.

Eritrea

• **SITUATION**

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

• **FORECAST**

Isolated locusts may be present and breeding in a few places on the central coast near Massawa where rain fell in April.

Ethiopia

• **SITUATION**

No reports were received during April.

• **FORECAST**

No significant developments are likely.

Djibouti

• **SITUATION**

No locusts were reported during April.

• **FORECAST**

No significant developments are likely.

Somalia

• **SITUATION**

No reports were received during April.

• **FORECAST**

Isolated adults may be present in a few places on the northwest coast between Djibouti and Berbera.

Egypt

• **SITUATION**

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

• **FORECAST**

No significant developments are likely.

Saudi Arabia

• **SITUATION**

No locusts were reported during April

• **FORECAST**

Isolated adults may be present on the Red Sea coast near Jizan and could breed on a limited scale in areas of recent rainfall.

Yemen

• **SITUATION**

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

• **FORECAST**

Isolated adults may be present and could persist in any areas that remain green on the coastal plains of the Red Sea and Gulf of Aden. Small-scale breeding could occur in areas of recent rainfall.

Oman

• **SITUATION**

No locusts were seen during surveys carried out in April along the Batinah coastal plains of the north and on the Musandam Peninsula.

• **FORECAST**

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Lebanon, Palestine, Qatar, Syria, Tanzania, Turkey, UAE and Uganda

• **FORECAST**

No significant developments are likely.

EASTERN REGION

Iran

• **SITUATION**

No locusts were seen during surveys carried out on the southern coastal plains near Chabahar (2517N/6036E) and in the interior near Iranshahr (2715N/6141E) on 13-14 March.

• **FORECAST**

No significant developments are likely.

Pakistan

• **SITUATION**

No locusts were seen during surveys carried out in the spring breeding areas in Baluchistan in March and the first half of April.

• **FORECAST**

Isolated adults may start to appear in a few places in the summer breeding areas at the end of the forecast period.

India

• **SITUATION**

No locusts were seen during surveys carried out in Rajasthan up to 27 April.

• **FORECAST**

Isolated adults may start to appear in a few places in the summer breeding areas at the end of the forecast period.

Afghanistan

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

Announcements

Locust reporting. During locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent twice/week and affected countries are encouraged to prepare decadal bulletins summarizing the situation. During recession periods, countries should report at least once/month and send RAMSES data with a brief interpretation. All information should be sent by e-mail to the FAO/ECLO Desert Locust Information Service (eclo@fao.org). Information received by the end of the month will be included in the FAO Desert Locust 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.

Desert Locust Mapper. The Locust Group has launched an updated version of the Desert Locust Mapper that allows users to access locust data, both historical and current, and display swarm, band, hopper and adult infestations on maps at different scales. See: www.fao.org/ag/locusts (Mapper)

eLocust2. FAO has developed a new version of eLocust in collaboration with affected countries and the French Space Agency (CNES/Novacom) that allows field officers to enter survey and control data directly in the field and transmit it in real time via satellite to their national locust centre. Data can also be downloaded to a PC and visualized on GoogleEarth. The software is in both English and French. FAO DLIS is currently distributing units to affected countries with the goal of becoming fully operational by this summer. Photos and more information are available at: www.fao.org/ag/locusts/en/activ/DLIS/index.html

Desert Locust warning levels. DLIS has initiated an experimental colour-coded scheme on the Locust Watch web page to indicate the seriousness of the current Desert Locust situation: green for *calm*, yellow for *caution* and red for *danger*. The levels indicate the perceived risk or threat of current Desert Locust infestations to crops and appropriate actions are suggested for each level. Your feedback on the usefulness of this scheme and any suggested improvements is welcome.

New information on Locust Watch. New material is available on the Locust Group's web page, Locust Watch (www.fao.org/ag/locusts):

- Report of the 13th EMPRES/CR Liaison Officers meeting (English) – Publications section
- EMPRES/CRC regional workshop on RAMSES, eLocust2 and remote sensing – Activities section
- Report of the 4th EMPRES/WR Liaison Officers meeting (French) – Publications section
- Report of the 1st EMPRES/WR Steering Committee (French) – Publications section

2006 events. The following meetings are tentatively scheduled:

- **FAO/World Bank.** Pesticide management workshop, Bamako (Mali), 15-18 May
- **CRC.** 25th Session, Doha (Qatar), 28 May – 1 June (tentative)
- **SWAC.** Advanced training for National Locust Information Officers (RAMSES/eLocust2), Jodhpur (India), 12-16 June (tentative)
- **EMPRES/WR.** Advanced training for National Locust Information Officers (RAMSES/eLocust2), Agadir (Morocco), 3-7 July
- **DLCC.** 38th Session, Rome, 11-15 September
- **EMPRES/CR.** 14th Liaison Officer Meeting, Muscat (Oman), 11-15 November
- **SWAC.** 25th Session, Tehran (Iran), 20-23 November
- **EMPRES/WR and CLCPRO.** 5th EMPRES Liaison Officer Meeting and 2nd Session CLCPRO, Nouakchott (Mauritania), 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, Niger, Senegal, Tunisia; during plagues only: Burkino Faso, Cape Verde, Gambia, Guinea and Guinea-Bissau.

CENTRAL

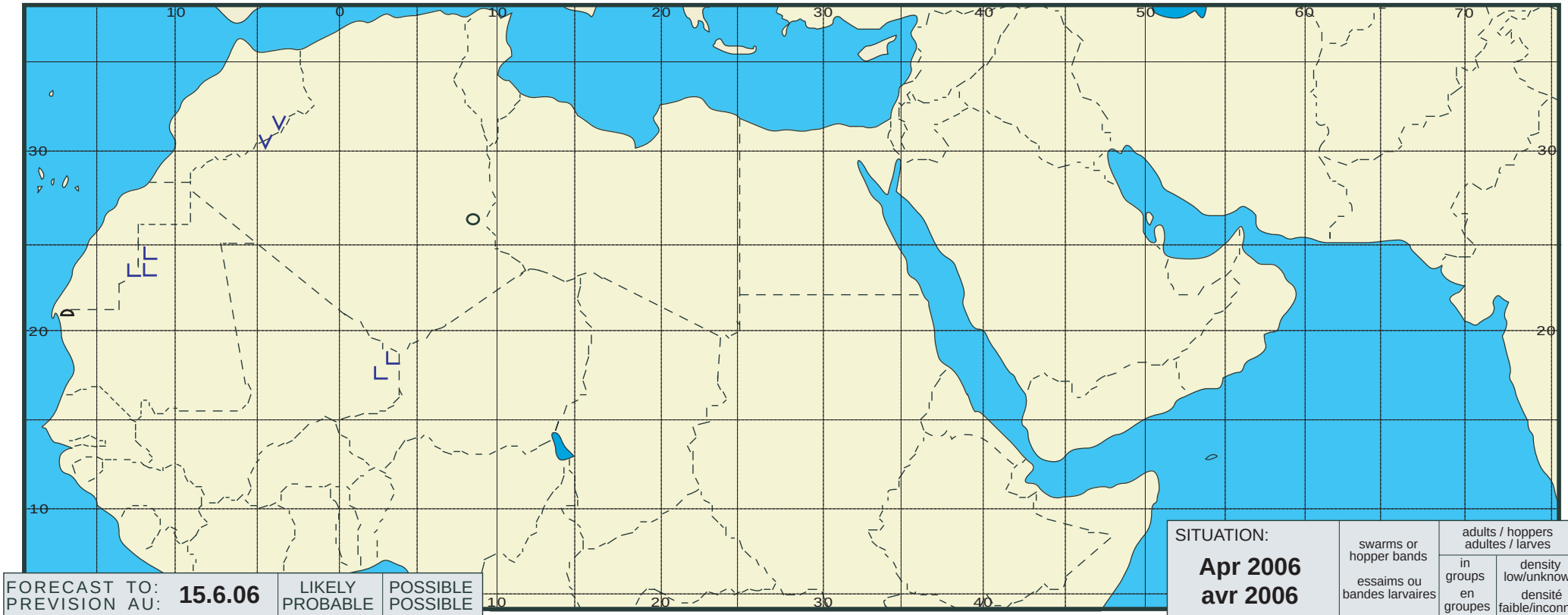
- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

EASTERN

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

Desert Locust Summary
Criquet pèlerin - Situation résumée

331



FORECAST TO: / PREVISION AU: **15.6.06**	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: **Apr 2006 avr 2006**	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			
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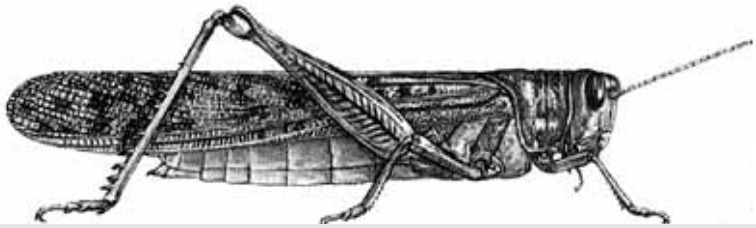
adults, maturity unknown adultes, maturité inconnue			
egg laying or eggs pontes ou œufs			
hoppers larves			
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)			



DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations **No. 332**

(1 June 2006)

General Situation during May 2006 Forecast until mid-July 2006

The Desert Locust situation remained calm during May. The only significant locust activity was in Algerian Sahara where locust numbers increased slightly because of small-scale breeding in parts of the centre and southeast. Ground control teams treated nearly 4,000 ha. Elsewhere in the spring breeding areas in Northwest Africa, isolated adults and hoppers were present at one place along the Moroccan/Algerian border. Dry conditions prevailed in nearly all the other recession countries and very few locusts were reported. During the forecast period, low numbers of locusts should start to appear in parts of the summer breeding areas in the northern Sahel in West Africa and Sudan as well as along the Indo-Pakistan border. Small-scale breeding will commence in these areas with the onset of the seasonal rains.

Western Region. Small-scale breeding continued in eastern **Algeria**, giving rise to an increasing number of solitarious and *transiens* adults. Limited breeding occurred in central Algeria where solitarious hoppers and adults were present. Control operations were conducted mainly in eastern Algeria against the higher density infestations. Very little breeding is thought to have occurred this spring in other areas of Northwest Africa because of poor rainfall and dry conditions. Only a few isolated hoppers and adults were seen in **Morocco** near the Algerian border. No locusts were reported elsewhere in the region although isolated adults may be present in a few places in **Western Sahara**, northern **Mauritania**, northern **Mali**, and the Air Mountains in **Niger**. Surveys should commence during the forecast period in the summer breeding areas in the northern Sahel in Mauritania, Mali and Niger as low numbers of locusts are likely to appear and lay eggs once the summer rains commence.

Central Region. Ecological conditions remained dry in the region and few locusts were reported during May. A solitary adult was seen on the Red Sea coastal plains in **Eritrea** and there was an unconfirmed report of locusts on the coast in northwest **Somalia**. No locusts were reported elsewhere in the region. Low numbers of adults are likely to appear and eventually lay eggs in the summer breeding areas in **Sudan** and in the interior of **Yemen** once the rains start. Surveys should commence in both countries during the forecast period.

Eastern Region. Mainly dry conditions prevailed and no locusts were reported in the region during May. Low numbers of adults are expected to appear along both sides of the **Indo-Pakistan** border and breed on a small scale once the monsoon rains start. No significant developments are expected.

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No. 332

DESERT LOCUST BULLETIN

Weather & Ecological Conditions in May 2006

Mainly dry conditions prevailed in the recession area during May. The Inter-Tropical Convergence Zone started moving northwards but remained south of the summer breeding areas in the Sahel in West Africa and Sudan.

In the **Western Region**, very little rain fell during May and vegetation continued to dry out in most areas. Light rain fell in a few places in the central Algerian Sahara near Adrar and In Salah as well as along the Libyan border between Illizi and Djanet. Towards the end of the month, showers fell in central and northwest Mauritania near Tidjikja and Atar. In the spring breeding areas along the southern side of the Atlas Mountains, vegetation was drying out in most places in Morocco and Algeria even though light rain fell along the Moroccan-Algerian border. In the Sahel of West Africa, the Inter-Tropical Convergence Zone (ITCZ) began its seasonal movement northwards but remained south of the summer breeding areas. Isolated showers may have occurred in a few places in the Adrar des Iforas in northern Mali, on the Tamesna Plains in Mali and Niger, and in the Tibesti Mountains in northwest Chad. Nevertheless, vegetation was either dry or drying out and ecological conditions were not favourable for breeding in the above-mentioned areas.

In the **Central Region**, mainly dry conditions prevailed during May except for some coastal areas of the Red Sea. The ITCZ began its seasonal movement northwards and reached the southern edge of the summer breeding areas in western and central Sudan (Geneina – El Fasher – south of El Obeid – Kassala). Consequently, sporadic light showers occurred in Sudan in the west near Nyala and Geneina, in the centre near El Obeid, in the north between Khartoum and Dongola, in the east between the Nile River and the Red Sea Hills. Along the Red Sea coastal plains, light rain fell near Suakin, Sudan, on the northern coast in Eritrea near Mehimet, on the southern coast near Jizan, Saudi Arabia, and in a few places on the Yemeni coast. Light rain also fell at times in parts of northwestern Somalia near Hargeisa, Upper Egypt near Lake Nasser and in parts of the Western Desert, and northern Oman. Seasonal rains commenced in the summer breeding areas in the interior of Yemen and some rain may have fallen on the coast near the Yemen/Oman border at the end of May. Despite these showers, ecological conditions remained generally unfavourable for breeding except for perhaps a few places on the Red Sea coastal plains in northern Eritrea and Yemen.

In the **Eastern Region**, light rain fell in a few places in Rajasthan, India during May. Dry conditions prevailed in both the spring and summer breeding areas.

Area Treated

Algeria 3,832 ha (16-26 May)

Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• **SITUATION**

During the last two decades of April, isolated solitarious adults persisted in the north near Zouerate (2244N/1221W) and a few solitarious hoppers of mixed instars continued to be reported in the northwest east of Nouadhibou (2054N/1701W).

No surveys were carried out and no locusts were reported during the first decade of May.

• **FORECAST**

Unless further rainfall occurs, locust numbers will decline in the northwest and north. Adults are expected gradually to move southwards and reach the summer breeding areas of the south where they will mature and breed on a small scale if rainfall occurs.

Mali

• **SITUATION**

No locusts were reported during May.

• **FORECAST**

Isolated adults may be present in a few places in the Adrar des Iforas. A few adults could eventually appear from the Algerian Sahara and breed on a small scale if rainfall occurs.

Niger

• **SITUATION**

No surveys were carried out and no locusts were reported up to 10 May.

• **Forecast**

Isolated adults may be present in a few places in the Air Mountains. A few adults could eventually appear from the Algerian Sahara and breed on a small scale in Tamesna if rainfall occurs.

Chad

• **Situation**

No reports were received during May.

• **Forecast**

No significant developments are likely.

Senegal

• **Situation**

No locusts were reported during May.

• **Forecast**

No significant developments are likely.

Benin, Burkina Faso, Cameroon, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea Bissau, Guinea, Liberia, Nigeria, Sierra Leone and Togo

• **Forecast**

No significant developments are likely.

Algeria

• **Situation**

During May, local breeding was in progress in the eastern Sahara near Illizi (2630N/0825E) where solitarious and *transiens* hoppers continued to mature and had reached the fourth and fifth instar stage by mid month. Compared to the previous month, hopper densities declined to 1-6 hoppers/m^2 and 6-10 hoppers/bush. During the second half of the month, most of the hoppers had fledged and there was an increasing number of solitarious and *transiens* immature adults, reaching densities up to 6 adults/m^2, seen during surveys. Ground control operations were undertaken in these areas and treated 3,832 ha from 16 to 26 May.

In the central Sahara, control teams treated 200 ha of *transiens* mature adults north of Tamanrasset (2250N/0528E). Isolated second to fourth instar hoppers mixed with solitarious immature and mature adults were present near Adrar (2753N/0017W) at mid-month.

No locusts were seen during surveys carried out elsewhere in the central Sahara near In Salah (2712N/0229E), in the south near Tamanrasset and the Malian border, and in the southeast near Djanet (2434N/0930E).

• **Forecast**

Small-scale breeding will continue early in the forecast period near Adrar but should end soon near Illizi. New adults, as well as any other adults that may be present in the central Sahara, may concentrate in the few areas that remain green and gradually move south towards the summer breeding areas in the northern Sahel. This movement is not expected to be significant.

Morocco

• **Situation**

During the first decade of May, a solitarious hopper and a mature adult were seen south of the Atlas Mountains near Wadi Ziz and the Algerian border at Talekhnafissine (3055N/0357W) where adults were seen copulating in early April. No locusts were reported elsewhere in the country.

• **Forecast**

Locust numbers will decline as vegetation dries out in the spring breeding areas. No significant developments are likely.

Libyan Arab Jamahiriya

• **Situation**

No reports were received during May.

• **Forecast**

Low numbers of hoppers and adults may be present in areas of previous breeding near Ghat.

Tunisia

• **Situation**

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

• **Forecast**

No significant developments are likely.

CENTRAL REGION

Sudan

• **Situation**

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

• **Forecast**

Isolated adults are expected to appear in a few places in the summer breeding areas and breed on a limited scale once seasonal rains commence.

Eritrea

• **Situation**

No locusts were seen during a survey carried out on the Red Sea coastal plains from Massawa to Mehimet from 5 to 15 May except for one solitary adult near Shelshela (1553N/3906E).

• **Forecast**

No significant developments are likely.

Ethiopia

• **Situation**

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

• **Forecast**

No significant developments are likely.

Djibouti

• **Situation**

No locusts were reported during May.

• **Forecast**

No significant developments are likely.

Somalia

• **Situation**

There was an unconfirmed report from travellers of locust adults on the northwestern coast west of Berbera near Geerisa (1022N/4434E) on 24 May.

• **Forecast**

Isolated adults may be present in a few places on the northwest coast between Djibouti and Berbera.

Egypt

• **Situation**

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

• **Forecast**

No significant developments are likely.

Saudi Arabia

• **Situation**

No locusts were seen during surveys carried out along the Red Sea coastal plains and in the interior during May.

• **Forecast**

Isolated adults may be present on the Red Sea coast near Jizan and could breed on a limited scale in areas of recent rainfall.

Yemen

• **Situation**

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

• **Forecast**

Isolated adults may be present and could persist and breed on a limited scale in any areas that remain green on the coastal plains of the Red Sea and Gulf of Aden. Isolated adults could start to appear in the summer breeding areas in the interior between Marib and Shabwah in areas where rainfall occurs.

Oman

• **Situation**

No locusts were seen during surveys carried out in May along the Batinah coastal plains of the north and on the Musandam Peninsula, and no locusts were reported from other regions in the country.

• **Forecast**

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Lebanon, Palestine, Qatar, Syria, Tanzania, Turkey, UAE and Uganda

• **Forecast**

No significant developments are likely.

EASTERN REGION

Iran

• **Situation**

No locusts were seen during a joint survey in coastal and interior areas in the southeast during the second half of April. During May, no locusts were seen during surveys carried out on the coast near Jask.

• **Forecast**

No significant developments are likely.

Pakistan

• **Situation**

No locusts were seen during surveys carried out in the spring breeding areas in Baluchistan in the second half of April and first half of May.

• **Forecast**

Isolated adults may start to appear in a few places in the summer breeding areas at the end of the forecast period.

India

• **Situation**

No locusts were seen during surveys carried out in Rajasthan and Gujarat during May.

• **Forecast**

Isolated adults may start to appear in a few places in the summer breeding areas at the end of the forecast period.

Afghanistan

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Announcements

Locust reporting. During locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent twice/week and affected countries are encouraged to prepare decadal bulletins summarizing the situation. During recession periods, countries should report at least once/month and send RAMSES data with a brief interpretation. All information should be sent by e-mail to the FAO/ECLO Desert Locust Information Service (eclo@fao.org). Information received by the end of the month will be included in the FAO Desert Locust 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.

Desert Locust Mapper. The Locust Group has launched an updated version of the Desert Locust Mapper that allows users to access locust data, both historical and current, and display swarm, band, hopper and adult infestations on maps at different scales. See: www.fao.org/ag/locusts (Mapper)

eLocust2. FAO has developed a new version of eLocust in collaboration with affected countries and the French Space Agency (CNES/Novacom) that allows field officers to enter survey and control data directly in the field and transmit it in real time via satellite to their national locust centre. Data can also be downloaded to a PC and visualized on GoogleEarth. The software is in both English and French. FAO DLIS is currently distributing units to affected countries with the goal of becoming operational by this summer. Photos and more information are available at: www.fao.org/ag/locusts/en/activ/DLIS/index.html

Desert Locust warning levels. DLIS has initiated an experimental colour-coded scheme to indicate the seriousness of the current Desert Locust situation: green for *calm*, yellow for *caution* and red for *danger*. The scheme has been applied to the Locust Watch web page and the monthly bulletin's header. The levels indicate the perceived risk or threat of current Desert Locust infestations to crops and appropriate actions are suggested for each level. Your feedback on the usefulness of this scheme and any suggested improvements is welcome.

New information on Locust Watch. New material is available on the Locust Group's web page, Locust Watch (www.fao.org/ag/locusts):

- Report of the 13th EMPRES/CR Liaison Officers meeting (English) – Publications section
- EMPRES/CRC regional workshop on RAMSES, eLocust2 and remote sensing – Activities section
- Report of the 4th EMPRES/WR Liaison Officers meeting (French) – Publications section
- Report of the 1st EMPRES/WR Steering Committee (French) – Publications section

2006 events. The following meetings are tentatively scheduled:

- **SWAC.** Advanced training for National Locust Information Officers (RAMSES/eLocust2), Jodhpur (India), 12-16 June
- **EMPRES/WR.** Advanced training for National Locust Information Officers (RAMSES/eLocust2), Agadir (Morocco), 3-7 July
- **DLCC.** 38th Session, Rome, 11-15 September
- **EMPRES/CR.** 14th Liaison Officer Meeting, Muscat (Oman), 11-15 November
- **SWAC.** 25th Session, Tehran (Iran), 20-23 November
- **EMPRES/WR and CLCPRO.** 5th EMPRES Liaison Officer Meeting and 2nd Session CLCPRO, Nouakchott (Mauritania), 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.

WARNING LEVELS

GREEN

- Calm. No threat to crops. Maintain regular surveys and monitoring.

YELLOW

- Caution. Potential threat to crops. Increased vigilance is required; control operations may be needed.

RED

- Danger. Significant threat to crops. Intensive survey and control operations must be undertaken.

REGIONS

WESTERN

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

CENTRAL

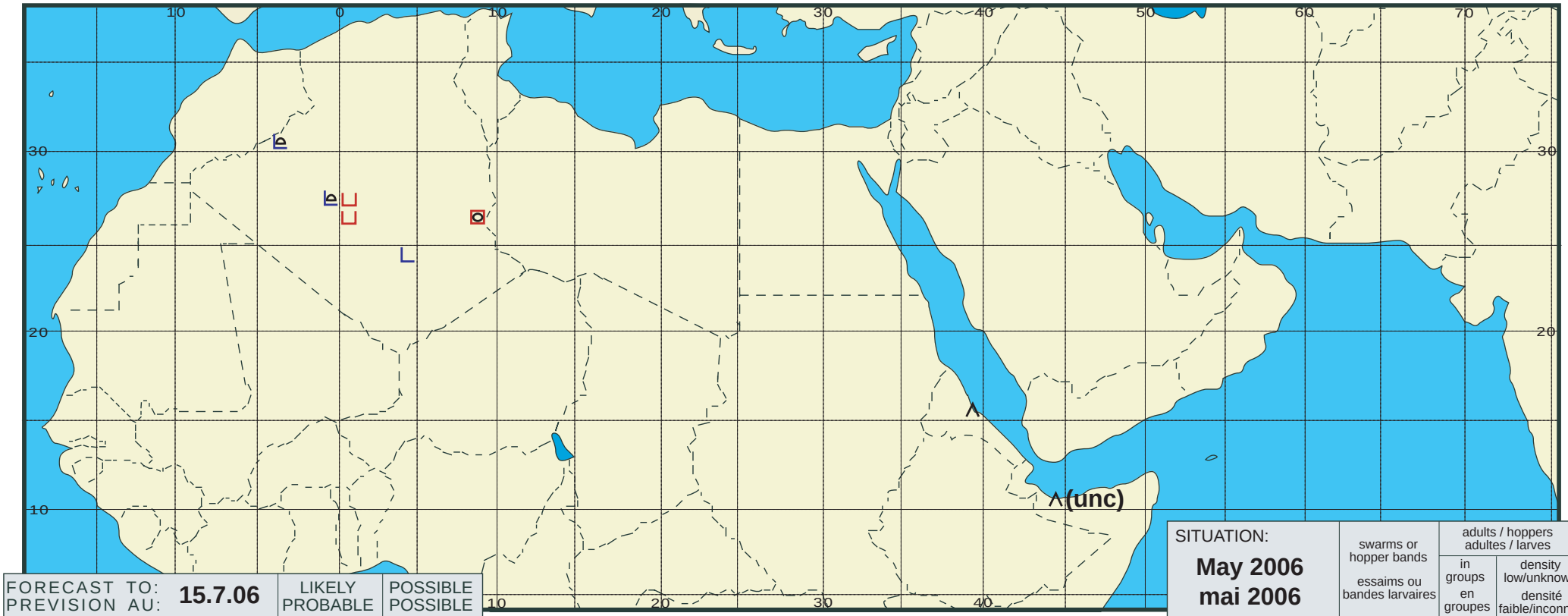
- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

EASTERN

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

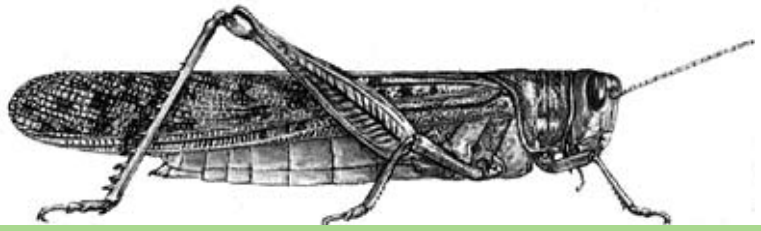
Desert Locust Summary
Criquet pèlerin - Situation résumée

332



FORECAST TO: PREVISION AU: **15.7.06**	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 2006 mai 2006**	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. 333**

(3 July 2006)

General Situation during June 2006
Forecast until mid-August 2006

The Desert Locust situation remained calm during June. Small-scale breeding occurred in Algeria and Libya causing locust numbers to increase slightly and ground control operations were undertaken in both countries. Isolated adults were reported in Niger and are probably present in other parts of the summer breeding areas in the Sahel. Although seasonal rains commenced in a few places in the Sahel in late June, ecological conditions were still dry and unfavourable for breeding. Nevertheless, small-scale breeding will occur in the summer breeding areas in the Sahel in West Africa and Sudan and along the Indo-Pakistan border once more rains fall. Elsewhere, isolated adults were seen in Egypt and local breeding occurred in northwest Somalia.

Western Region. Small-scale breeding has been in progress in eastern **Algeria** since March and in southwest **Libya** since May. Consequently, locust numbers have increased gradually and some populations became *transiens* and formed groups of hoppers and adults in June. Ground control operations treated 394 ha in Algeria (up to 15 June) and 1,995 ha in Libya (12-28 June). More groups could form as vegetation dries out. The situation requires careful monitoring. Local populations of isolated solitarious adults were reported in the summer breeding areas in **Niger**. Although surveys were not conducted in **Mauritania** or **Mali** during June, similar populations are likely to be present there as well. Summer rains have started in a few places in the Sahel and, as they become more widespread, conditions will improve and small-scale breeding is expected to occur during the forecast period in parts of southern Mauritania, northern Mali and northern Niger.

Central Region. No locusts were reported in the region during June except for isolated solitarious adults in southern **Egypt** and local breeding in northwest **Somalia**. As ecological conditions improve, small-scale breeding is expected to occur in the interior of **Sudan** during the forecast period. Breeding could also take place in western **Eritrea** and in the interior of **Yemen** if rains fall. Surveys should be conducted regularly in all three countries throughout the summer

Eastern Region. Mainly dry conditions prevailed and no locusts were reported in the region during June. Low numbers of adults are expected to appear along both sides of the **Indo-Pakistan** border and breed on a small scale once the monsoon rains start. 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 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/ag/locusts

No. 333

DESERT LOCUST BULLETIN

Weather & Ecological Conditions in June 2006

Rains began to fall from mid-June onwards in parts of the summer breeding areas in the Sahel in West Africa and Sudan where ecological conditions are expected to improve. Pre-monsoon showers fell in early June along the Indo-Pakistan border but conditions remained dry and unfavourable for breeding.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) continued its seasonal movement northwards during June, reaching 19N over Mauritania (Tidjikja) and occasionally as far north as 20N over Mali. During the second half of the month, light rain fell in parts of the summer breeding areas, mainly in the Hodh Ech Chargui and Hodh El Gharbi regions in southeastern Mauritania, in the Timetrine, Tilemsi Valley, Adrar des Iforas and Tamesna in northern Mali, and in Tamesna and, to a lesser extent, the western Air in Niger. Light rain may also have extended northwards into southern and central Algeria. Although vegetation was dry or drying in nearly all of these areas, ecological conditions are expected to improve in the coming weeks from the recent rainfall. Vegetation was drying up in most places along the southern side of the Atlas Mountains in Morocco and Algeria except for the Ziz and Ghris Valleys in Morocco.

In the **Central Region**, the ITZC moved progressively northwards during June, reaching 14-15N by the end of the month. Consequently, light rain occurred and ecological conditions were improving in parts of the summer breeding area in Sudan, mainly in West and North Darfur (Geneina – Kutum – El Fasher), in North Kordofan (Umm Badr – Sodiri – Abu Uruq), between Khartoum and Shendi, and near Kassala. Light rains may have fallen in the southern part of the western lowlands in Eritrea but ecological conditions remained dry. Some rain may also have occurred along the Red Sea coastal plains in Yemen but dry conditions prevailed in the interior summer breeding areas. In northern Oman, light to moderate rain fell at times and green vegetation was present in some places.

In the **Eastern Region**, pre-monsoon showers fell on 1-2 June along both sides of the Indo-Pakistan border. The rains were mainly concentrated in the summer breeding areas near Jaisalmer and Bikaner in India, and extended to parts of Pakistan east of Sukkur and near Bahawalpur. As very little rain fell after this in June, ecological conditions remained mainly dry in both countries. Light rain fell in the spring breeding areas near Turbat, Pakistan during the first half of June.

Area Treated

Algeria	3 ha (28-31 May)
	394 ha (1-14 June)
Libya	1,995 ha (12-28 June)

Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• **SITUATION**

No surveys were carried out and no locusts were reported up to 20 June.

• **FORECAST**

Scattered adults are likely to be present in some places in the south, mainly in the two Hodhs and to a lesser extent in Tagant and Trarza. Small-scale breeding is expected to commence with the onset of the summer rains.

Mali

• **SITUATION**

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

• **FORECAST**

Scattered adults are likely to be present in a few places in Timetrine, Tilemsi Valley, Adrar des Iforas and Tamesna where small-scale breeding is expected to occur in areas of rainfall.

Niger

• **SITUATION**

During June, isolated immature and mature adults were present at five places in the Air Mountains and at two places in Tamesna between In Gall (1651N/0701E) and In Abangharit (1754N/0559E). Further south, a single solitarious mature adult was seen north of Tahoua (1457N/0519E) near Adehan on the 23rd.

• **Forecast**

Small-scale breeding will occur in areas of recent rainfall in Tamesna, especially on the Tazerzait Plateau, and to a lesser extent in parts of the Air Mountains. Consequently, locust numbers may increase slightly during the forecast period.

Chad

• **Situation**

A late report indicated that no surveys were carried out and no locusts were reported in May.

• **Forecast**

Isolated adults may start to appear in a few places in the east and centre of the country by the end of the forecast period.

Senegal

• **Situation**

No locusts were reported during June.

• **Forecast**

No significant developments are likely.

Benin, Burkina Faso, Cameroon, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea Bissau, Guinea, Liberia, Nigeria, Sierra Leone and Togo

• **Forecast**

No significant developments are likely.

Algeria

• **Situation**

During the first half of June, solitarious immature adults were present at densities up to 600 adults/ha in three areas near Illizi (2630N/0825E) where local breeding occurred in May. Small-scale breeding continued near agricultural areas to the north and south of Adrar (2753N/0017W) where infestations of solitarious and *transiens* third to fifth instar hoppers and hopper groups, at densities of 100-200 hoppers/bush, mixed with immature adults, at densities of 400-1,500 adults/ha, were present. Ground control operations treated 394 ha in both areas from 1 to 14 June. In the west, *transiens* adults were seen at one location near Tindouf (2741N/0811W) on 5 June.

No locusts were seen during surveys in the south between the Hoggar Mountains and the Mali/Niger border.

• **Forecast**

Small-scale breeding should end soon near Illizi but may continue near Adrar up to mid-July. New adults, as well as any other adults that may be present in the central Sahara, may concentrate in the few areas that remain green and gradually move south towards the summer breeding areas in the northern Sahel. This movement is not expected to be on a significant scale.

Morocco

• **Situation**

No locusts were reported during June.

• **Forecast**

No significant developments are likely.

Libyan Arab Jamahiriya

• **Situation**

During the second and third decades of June, groups of fledglings and immature adults mixed with isolated solitarious adults were seen in some places in the southwest near Ghat and in the Al Hamada Al Hamra near the Algerian border. These infestations developed from breeding that occurred during the spring. Ground control operations treated 1,995 ha from 12 to 28 June.

• **Forecast**

Any locusts that escape control operations are expected to concentrate in the few areas that remain green near Ghat and to a lesser extent in the Al Hamada Al Hamra. Consequently, there is a risk that a limited number of additional groups could form during the forecast period.

Tunisia

• **Situation**

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

• **Forecast**

No significant developments are likely.

CENTRAL REGION

Sudan

• **Situation**

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

• **Forecast**

Scattered adults are likely to be present in a few places in the summer breeding areas. Small-scale breeding is expected to occur in areas that receive rainfall.

Eritrea

• **Situation**

No locusts were seen during a survey carried out in the western lowlands from 23 to 25 June.

• **Forecast**

Isolated adults could appear in parts of the western lowlands and breed on a limited scale if rainfall occurs.

Ethiopia

• **Situation**

No locusts were reported during June.

• **Forecast**

No significant developments are likely.

Djibouti

• **Situation**

No locusts were reported during June.

• **Forecast**

No significant developments are likely.

Somalia

• **Situation**

Scattered fifth instar hoppers and mature adults were seen at two locations west of Hargeisa in mid-June.

• **Forecast**

Scattered adults may persist in a few places on the escarpment between Boroma and Burao.

Egypt

• **Situation**

During June, isolated solitarious adults were seen in one of the farms in the Western Desert at Sh. Oweinat (2219N/2845E) on the 23rd. No locusts were seen elsewhere during surveys in the Western Desert.

• **Forecast**

No significant developments are likely.

Saudi Arabia

• **Situation**

No locusts were seen during surveys carried out along the Red Sea coastal plains and in the interior during June.

• **Forecast**

Isolated adults may be present on the Red Sea coast near Jizan and could breed on a limited scale in areas where conditions are favourable.

Yemen

• **Situation**

No locusts were seen during surveys carried out in the summer breeding areas in the interior in Al Jawf, Marib and Shabwah regions in mid-June.

• **Forecast**

Isolated adults may be present in a few places on the coastal plains of the Red Sea and Gulf of Aden. Isolated adults could start to appear in the summer breeding areas in the interior between Marib and Shabwah in areas where rainfall occurs.

Oman

• **Situation**

No locusts were seen during surveys carried out in June in the northern interior, along the Batinah coastal plains and on the Musandam Peninsula.

• **Forecast**

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Lebanon, Palestine, Qatar, Syria, Tanzania, Turkey, UAE and Uganda

• **Forecast**

No significant developments are likely.

EASTERN REGION

Iran

• **Situation**

No reports were received during June.

• **Forecast**

No significant developments are likely.

Pakistan

• **Situation**

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

• **Forecast**

As monsoon rainfall is forecasted to be poorer than normal, locust numbers may increase only slightly as a result of limited breeding in a few areas between Tharparkar and Cholistan.

India

• **Situation**

No locusts were seen during surveys carried out in Rajasthan and Gujarat during the first half of June.

• **Forecast**

As monsoon rainfall is forecasted to be poorer than normal, locust numbers may increase only slightly as a result of limited breeding in a few areas of Rajasthan, mainly near the Pakistani border and along the Rajasthan Canal.

Afghanistan

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Announcements

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Desert Locust warning levels. DLIS is experimenting with a colour-coded scheme to indicate the seriousness of the current Desert Locust situation: green for *calm*, yellow for *caution* and red for *danger*. The scheme has been applied to the Locust Watch web page and to the monthly bulletin's header. The levels indicate the perceived risk or threat of current Desert Locust infestations to crops and appropriate actions are suggested for each level. Your feedback on the usefulness of this scheme and any suggested improvements is welcome.

Post Graduate Diploma in Desert Locust management. Applications are being accepted for the 2006-07 one-year diploma course at the University of Khartoum (Sudan) until the second week of July. For more information, please contact the CRC Secretariat, Munir Butrous (munir.butrous@fao.org).

EMPRES/CRC website. Detailed information on EMPRES/CR and the FAO Central Region Commission as well as member country profiles can be found on the new EMPRES/CRC website at: www.crc-empres.org.

New information on Locust Watch. New material is available on the Locust Group's web page, Locust Watch (www.fao.org/ag/locusts):

- Report of the 2006 Iran/Pakistan Joint Border Survey (English) – Publications section
- Fighting the Locusts … Safely brochure (French and Arabic) – Publications section
- Report of the 25th Session of the Central Region Commission (English and Arabic) – Publications section

DLCC documentation. The working documents for the 38th Session of the Desert Locust Control Committee (DLCC) will be posted on LocustWatch web page (www.fao.org/ag/locusts) as they become available in English, French and Arabic.

2006 events. The following meetings are tentatively scheduled:

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Retirement. The Senior Officer of the Locust and Other Migratory Pests Group at FAO Headquarters, Clive Elliott, will retire in July. Mr. Elliott was appointed Senior Officer in February 2004 and was instrumental in organizing the 2003-05 Desert Locust upsurge campaign. His active support and contribution to improvements in the Locust Group, the Regional Commissions and the EMPRES programme are very much appreciated. Although he will be missed, we wish him good luck in the future.

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- 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.

WARNING LEVELS

GREEN

- Calm. No threat to crops. Maintain regular surveys and monitoring.

YELLOW

- Caution. Potential threat to crops. Increased vigilance is required; control operations may be needed.

RED

- Danger. Significant threat to crops. Intensive survey and control operations must be undertaken.

REGIONS

WESTERN

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

CENTRAL

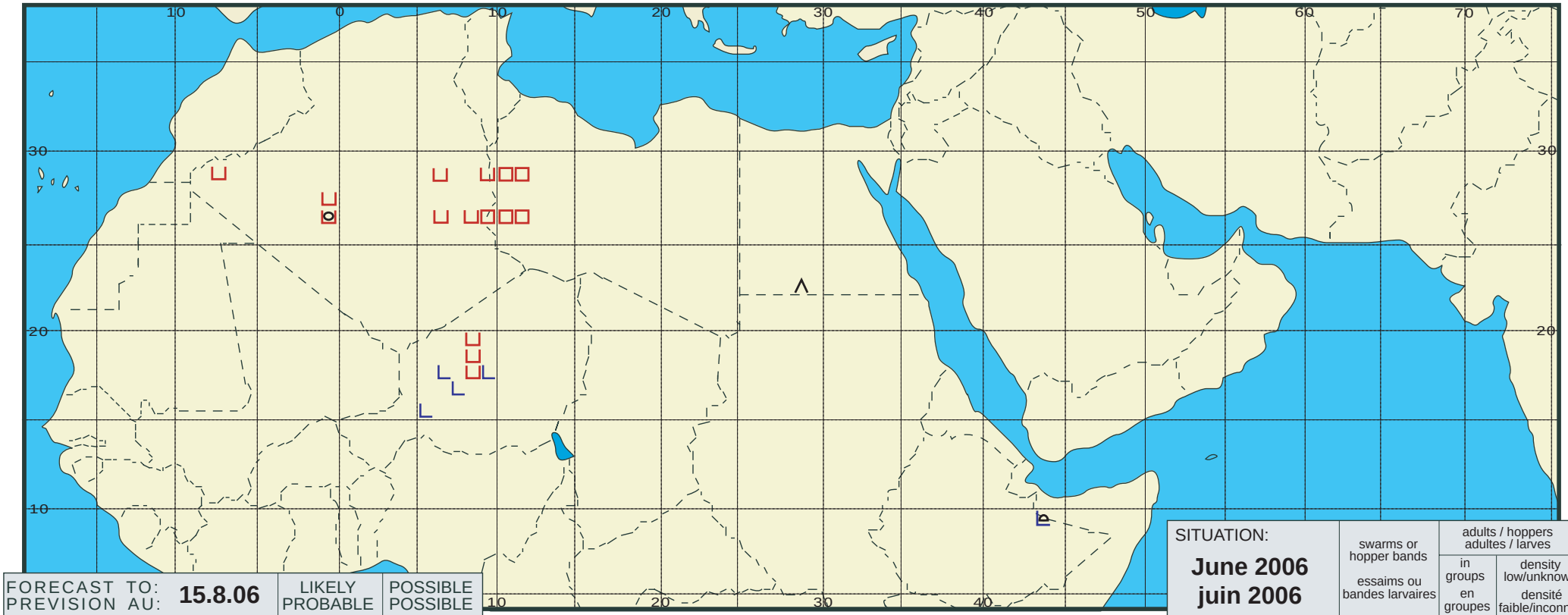
- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

EASTERN

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

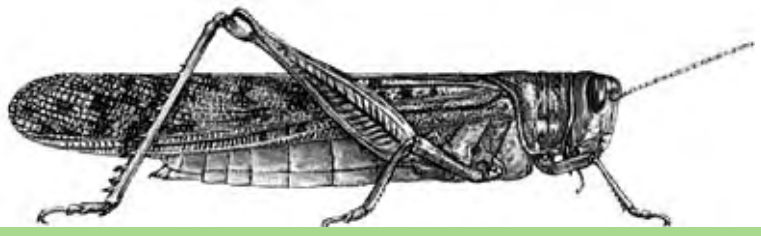
Desert Locust Summary
Criquet pèlerin - Situation résumée

333



FORECAST TO: PREVISION AU: **15.8.06**	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 2006 juin 2006**	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. 334**

(2 August 2006)

General Situation during July 2006
Forecast until mid-September 2006

The Desert Locust situation remained calm during July. Small isolated populations of solitarious locusts were reported in the Sahel of West Africa in Mauritania, Mali and Niger and in Southwest Asia along the Indo-Pakistan border. As ecological conditions improve, small-scale breeding will occur in these areas during August and locust numbers are expected to increase slightly. In Northwest Africa, local breeding continued in central Algeria where control teams treated 244 ha in agricultural areas, and isolated adults were seen in northeast Morocco. In the Central Region, a few adults were present in northern Somalia and southern Egypt.

Western Region. Small-scale breeding continued in irrigated areas near Adrar, **Algeria** where solitarious hoppers and adults were treated. A few adults from spring populations persisted in northeast **Morocco**. During July, good rains fell in much of the summer breeding areas in the Sahel of West Africa. Solitarious adults were seen during surveys in the Tamesna and Air Mountains in **Niger**. Although no surveys were undertaken in the other countries, there were reports of isolated populations in southern **Mauritania** and northern **Mali**. Small-scale breeding may already have commenced in some places in the three countries and will continue during the forecast period, giving rising to hoppers and adults that should remain solitarious. Surveys should be undertaken on a regular basis in these areas throughout the summer.

Central Region. During July, isolated solitarious adults persisted in agricultural areas in southern **Egypt** and a few adults were seen during surveys in northern **Somalia**. Although no locusts were reported in the summer breeding areas in **Sudan** and western **Eritrea**, low numbers of adults are almost certainly present and small-scale breeding is expected to occur during August and September. Isolated adults may also be present in a few places along the Red Sea coast in Eritrea and **Yemen** as well as in the interior of Yemen where small-scale breeding could take place in areas of recent rainfall. Surveys should be conducted regularly in all three countries throughout the summer.

Eastern Region. Isolated solitarious adults have been present in parts of the summer breeding areas in **Pakistan** near the Indo-Pakistan border since the second half of June. No locusts were reported in adjacent areas of Rajasthan, **India** where rainfall associated with this year's monsoon has been poor so far. Nevertheless, small-scale breeding is expected to occur in both countries 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 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)
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Internet: www.fao.org
DLIS: www.fao.org/ag/locusts

No. 334

DESERT LOCUST BULLETIN

Weather & Ecological Conditions in July 2006

Ecological conditions improved in the summer breeding areas in the Sahel of West Africa and Sudan because of good rainfall in most areas during July. Sporadic showers occurred along parts of the Red Sea coast. Breeding conditions were improving along the Indo-Pakistan border where monsoon rains fell, mainly in Pakistan.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) continued its seasonal movement northwards during July, reaching 20N over Mauritania and occasionally as far north as 24N over Mali. Consequently, light to moderate showers fell in the summer breeding areas in the northern Sahel where ecological conditions were already improving from earlier rains: in southern Mauritania (as far north as 19N), in northern Mali (west of Kidal, near Tessalit and in the Tamesna), in southern Tamesna in Niger between Tahoua and Agadez, and in eastern Chad between Abeche and Fada. Heavier rains fell in southwest Mauritania between Boutilimit and Kiffa and in the southeast from Nema to Tombouctou, Mali, including the Mauritania/Mali border as far north as 2030N. Light rain may have also fallen in northern Mauritania between Ouadane and El Hank. In southern Algeria, moderate rain (29 mm) fell in the southern parts of Tamanrasset and Adrar regions from 24 to 27 July. Nevertheless, ecological conditions remained dry throughout the central and southern Algerian Sahara except in irrigated areas near Adrar.

In the **Central Region**, the ITZC continued to move progressively northwards during July, reaching Atbara, Sudan by the end of the month. As a result, light to moderate rains fell as far north as 16N in West and North Darfur, and North Kordofan. Heavy rains were reported at El Obeid. Similar showers fell in eastern Sudan between Kassala and Derudeb, extending to the western lowlands in Eritrea. In northwest Somalia, light rain fell on the plateau between Boroma and Burao. In Yemen, light to heavy rain fell in parts of the summer breeding area in the interior near Marib, Shabwah and Hadhramaut. On the Red Sea coastal plains, light to moderate showers occurred between Al Mukha, Yemen and Jizan, Saudi Arabia. During the first decade of the month, unusually heavy rain fell on the northern coast in Eritrea at Mehimet (86 mm) that caused local flooding.

In the **Eastern Region**, light to moderate rain associated with the seasonal monsoon fell mostly in the summer breeding areas in Pakistan in the Tharparkar Desert as far north as Rohri during July. Less rain fell in adjacent areas in Rajasthan, India where it was concentrated mainly on the border west of Jaisalmer and Barmer. Light rain also fell in coastal and interior areas in Baluchistan, western Pakistan.

Area Treated

Algeria	244 ha (12-26 July)

Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• **SITUATION**

No surveys were carried out and no locusts were reported from 21 June to 20 July. There were reports of isolated solitarious mature adults during the third decade of July in parts of Inchiri, Assaba and the two Hodhs.

• **FORECAST**

Scattered adults are almost certainly present in parts of the south and small-scale breeding is likely to be in progress in areas of recent rainfall, mainly in Hodh Ech Chargui, Trarza, northern Brakna, western Tagant and southwest Adrar. Consequently, locust numbers are expected to increase slightly. Locusts may also be present in Hodh El Gharbi and in southern Inchiri where less rainfall has occurred.

Mali

• **SITUATION**

Although surveys were not carried out during July, there were reports of isolated solitarious adults at two places in the Adrar des Iforas near Kidal (1827N/0125E).

• **FORECAST**

Scattered adults are likely to be present and breeding on a small scale in a few places in Timetrine, Tilemsi Valley, Adrar des Iforas and Tamesna. Locusts

may also be present in areas of recent rainfall between Tombouctou and Araouane.

Niger

• **Situation**

During surveys carried out from 12 July onwards, isolated immature and mature solitarious adults were seen at one place in the eastern Air Mountains, at two places southwest of Agadez (1700N/0756E), and at one location southeast of Agadez. No locusts were seen elsewhere on the Tamesna Plains or in the Air Mountains.

• **Forecast**

Small-scale breeding will occur in areas of recent rainfall, mainly in the southern part of Tamesna, while additional rains are required north of In Abangharit before breeding is likely to take place. Limited breeding could also occur in parts of the western Air Mountains. Consequently, locust numbers are expected to increase slightly during the forecast period.

Chad

• **Situation**

A late report indicated that no surveys were carried out and no locusts were reported in June.

• **Forecast**

Isolated adults may be present in a few places in the east and centre of the country and breed on a small scale in areas of recent rainfall.

Senegal

• **Situation**

No locusts were reported during July.

• **Forecast**

No significant developments are likely.

Benin, Burkina Faso, Cameroon, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea Bissau, Guinea, Liberia, Nigeria, Sierra Leone and Togo

• **Forecast**

No significant developments are likely.

Algeria

• **Situation**

During July, small infestations of solitarious fourth to sixth instar hoppers mixed with solitarious immature and mature adults persisted in nearly a dozen agricultural areas near Adrar (2753N/0017W) at densities of up to 1,000 locusts/ha, covering a total area of 244 ha. A few adults were seen copulating. Ground control teams treated 244 ha.

• **Forecast**

Small-scale breeding may continue in irrigated areas near Adrar but locust numbers are expected to remain low. Isolated adults may be present in a few other places of the central and southern Sahara where rains fell recently.

Morocco

• **Situation**

During July, isolated immature solitarious adults were seen on the 12th in the northeast near Figuig at Boujrad (3206N/0308W).

• **Forecast**

No significant developments are likely.

Libyan Arab Jamahiriya

• **Situation**

No locusts were reported during July.

• **Forecast**

Scattered locusts may be present near Ghat and perhaps in a few places in the Al Hamada Al Hamra. No significant developments are likely.

Tunisia

• **Situation**

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

• **Forecast**

No significant developments are likely.

CENTRAL REGION

Sudan

• **Situation**

During the second half of July, no locusts were seen during surveys carried out in the summer breeding areas in North Kordofan between En Nahud (1246N/2828E), Sodiri (1423N/2906E) and the Nile River as well as in Khartoum and White Nile states. No reports were received from Darfur.

• **Forecast**

Scattered adults are likely to be present in a few places in the summer breeding areas in Kordofan and Darfur and, perhaps to a lesser extent, near Kassala. Small-scale breeding is expected to occur in areas of rainfall causing locust numbers to increase gradually.

Eritrea

• **Situation**

No locusts were seen during a survey carried out on the Red Sea coastal plains between Massawa and the Sudanese border from 12 to 17 July where heavy rains fell earlier in the month.

• **Forecast**

Isolated adults may be present in parts of the western lowlands and breed on a limited scale if rainfall occurs. A few adults could appear in areas of recent rainfall on the Red Sea coast near Mehimet.

Ethiopia

• **Situation**

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

• **Forecast**

No significant developments are likely.

Djibouti

• **Situation**

No reports were received during July.

• **Forecast**

No significant developments are likely.

Somalia

• **Situation**

Isolated immature and mature adults were seen on the plateau near Burao (0931N/4533E) during a survey carried out on 22-28 July.

• **Forecast**

Scattered adults may persist in a few places along the escarpment and on the plateau between Boroma and Burao.

Egypt

• **Situation**

During July, isolated immature adults were present in the Western Desert in two farms at Sh. Oweinat (2219N/2845E), at Darb Al-Arbain (2357N/3018E) oasis, near Lake Nasser at Tushka (2247N/3126E) and Abu Simbel (2219N/3138E), and in the Red Sea Hills northeast of Aswan (2405N/3256E).

• **Forecast**

Low numbers of locusts may persist in agricultural areas in parts of the Western Desert. No significant developments are likely.

Saudi Arabia

• **Situation**

During July, no locusts were seen during surveys carried out along the Red Sea coastal plains near Jeddah and further south near the Yemeni border. No locusts were seen in the interior near Buraydah (2620N/4359E) or in the extreme north near Jordan.

• **Forecast**

No significant developments are likely.

Yemen

• **Situation**

No surveys were carried out during July.

• **Forecast**

Isolated adults may be present in the summer breeding areas in the interior between Marib and Shabwah in areas where rainfall occurs. Similar infestations could also be present in a few places on the coastal plains of the Red Sea and Gulf of Aden.

Oman

• **Situation**

No locusts were seen during surveys carried out in July on the Musandam Peninsula.

• **Forecast**

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Lebanon, Palestine, Qatar, Syria, Tanzania, Turkey, UAE and Uganda

• **Forecast**

No significant developments are likely.

EASTERN REGION

Iran

• **Situation**

No reports were received during July.

• **Forecast**

No significant developments are likely.

Pakistan

• **Situation**

During the second half of June, isolated mature adults were seen at two locations in the summer breeding area in Khipro Desert southwest of Rohri (2739N/6857E).

During the first half of July, scattered mature adults were seen at 8 places in Khipro and Cholistan deserts.

• **Forecast**

Small-scale breeding is expected to occur in areas of recent rainfall between Tharparkar and Cholistan, causing locust numbers to increase slightly.

India

• **Situation**

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

• **Forecast**

Small-scale breeding is expected to occur in areas of recent rainfall in Rajasthan, mainly near the Pakistani border and along the Rajasthan Canal, causing locust numbers to increase slightly.

Afghanistan

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Announcements

Locust reporting. During locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent twice/week and affected countries are encouraged to prepare decadal bulletins summarizing the situation. During recession periods, countries should report at least once/month and send RAMSES data with a brief interpretation. All information should be sent by e-mail to the FAO/ECLO Desert Locust Information Service (eclo@fao.org). Information received by the end of the month will be included in the FAO Desert Locust 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.

eLocust2. FAO has developed a new version of eLocust in collaboration with affected countries and the French Space Agency (CNES/Novacom) that allows field officers to enter survey and control data directly in the field and transmit it in real time via satellite to their national locust centre. Data can also be downloaded to a PC and visualized on GoogleEarth. The software is in both English and French. FAO DLIS has distributed units to nearly all of the frontline countries so that they can become operational this summer. Photos and more information are available at: www.fao.org/ag/locusts/en/activ/DLIS/index.html

Desert Locust warning levels. DLIS is experimenting with a colour-coded scheme to indicate the seriousness of the current Desert Locust situation: green for *calm*, yellow for *caution* and red for *danger*. The scheme has been applied to the Locust Watch web page and to the monthly bulletin's header. The levels indicate the perceived risk or threat of current Desert Locust infestations to crops and appropriate actions are suggested for each level. Your feedback on the usefulness of this scheme and any suggested improvements is welcome.

CNLA Mauritania. The Government of Mauritania has recently approved the establishment of an autonomous National Anti-Locust Centre (Centre National de Lutte Antiacridienne, CNLA), which has its own budget and decision-making authority. Their web site is: www.claa.mr. Other countries are encouraged to follow the example of Mauritania.

EMPRES/CRC website. Detailed information on EMPRES/CR and the FAO Central Region Commission as well as member country profiles can be found on the new EMPRES/CRC website at: www.crc-empres.org.

New information on Locust Watch. New material is available on the Locust Group's web page, Locust Watch (www.fao.org/ag/locusts):

- Report of the 2006 Iran/Pakistan Joint Border Survey (English) – Publications section
- Fighting the Locusts … Safely brochure (French and Arabic) – Publications section
- Report of the 25th Session of the Central Region Commission (English and Arabic) – Publications section

DLCC documentation. The working documents for the 38th Session of the Desert Locust Control Committee (DLCC) will be posted on LocustWatch web page (www.fao.org/ag/locusts) as they become available in English, French and Arabic. Please check the page on a regular basis.

2006 events. The following meetings are tentatively scheduled:

- **DLCC.** 38th Session, Rome, 11-15 September
- **EMPRES/CR.** 14th Liaison Officer Meeting, Muscat (Oman), 11-15 November
- **SWAC.** 25th Session, Tehran (Iran), 20-23 November
- **EMPRES/WR and CLCPRO.** 5th EMPRES Liaison Officer Meeting and 2nd Session CLCPRO, Nouakchott (Mauritania), December

Glossary of terms

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

No. 334

DESERT LOCUST BULLETIN

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.

WARNING LEVELS

GREEN

- Calm. No threat to crops. Maintain regular surveys and monitoring.

YELLOW

- Caution. Potential threat to crops. Increased vigilance is required; control operations may be needed.

RED

- Danger. Significant threat to crops. Intensive survey and control operations must be undertaken.

REGIONS

WESTERN

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

CENTRAL

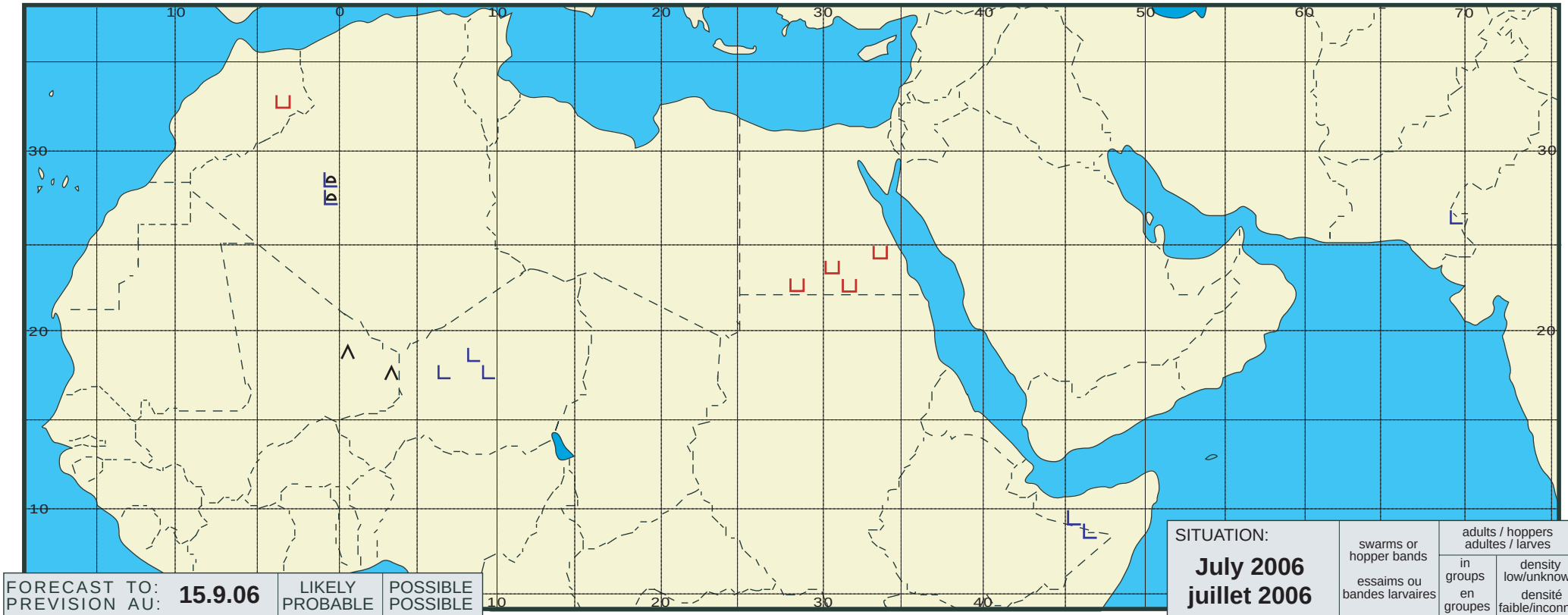
- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

EASTERN

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

Desert Locust Summary
Criquet pèlerin - Situation résumée

334



FORECAST TO: PREVISION AU: **15.9.06**	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favourables à la reproduction		
major swarm(s) essaim(s) important(s)		
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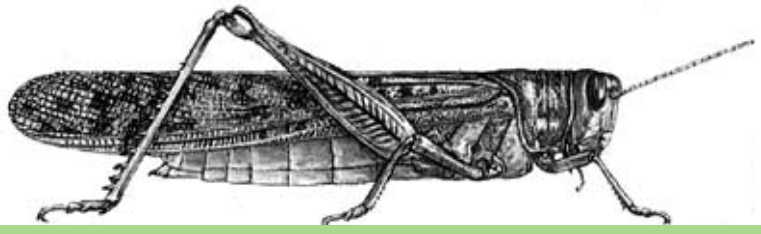
SITUATION: **July 2006 juillet 2006**	swarms or hopper bands essaims ou bandes larvaires	adults / hoppers adultes / larves	
		in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures	■	□	⊔
mature or partly mature adults adultes matures ou partiellement matures	◣	◺	∟
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. 335**

(4 September 2006)

General Situation during August 2006 Forecast until mid-October 2006

The Desert Locust situation remained calm during August. Low numbers of locusts were reported in the summer breeding areas in the Sahel of West Africa in Mauritania and Niger, and are probably present in northern Mali. So far, small-scale breeding is in progress in Mauritania. Limited control operations were undertaken against small infestations in northwest Libya. No locusts were reported in the Central Region except for a few adults in southern Egypt. In Southwest Asia, scattered adults were present along both sides of the Indo-Pakistan border. Unusually heavy rains and floods occurred in Ethiopia, Saudi Arabia, Pakistan and India, which should allow ecological conditions to remain favourable for breeding for several months. During the forecast period, breeding will continue in the Sahel of West Africa and Sudan and along the Indo-Pakistan border, causing locust numbers to increase with a slight risk of a few small local outbreaks developing by mid-October.

Western Region. Isolated adults were present and breeding on a small-scale during August throughout a large portion of southern and central **Mauritania**. Although similar populations were seen in the Tamesna and Air Mountains in **Niger** and are thought to be present in northern **Mali**, so far breeding has not been reported in either country. Nevertheless, as good rains have fallen and ecological conditions are favourable in most of the summer breeding areas, small-scale breeding will occur during the forecast period and locust numbers will increase with a slight risk of a few local outbreaks developing by mid-October. Therefore, it is critical that surveys are undertaken on a regular basis in these areas throughout the summer. In Northwest Africa, small infestations were present in northwest **Libya** and ground teams treated 120 ha of solitarious and *transiens* adult groups mixed with hoppers.

Central Region. No locusts were reported during August in the region except for isolated mature adults at one place in southern **Egypt**. Unusually heavy rains and floods occurred near Dire Dawa, **Ethiopia** and on the Red Sea coast of **Saudi Arabia** near Jizan. The latter is a key breeding habitat for Desert Locust and ecological conditions are likely to remain favourable there for several months. Good rains also fell in adjacent coastal areas in **Yemen**. Regular surveys should be undertaken along the coastal plains in both countries because there is a good chance that breeding will take place during the forecast period and local outbreaks may occur. Surveys should also continue in the summer breeding areas in **Sudan** and western **Eritrea**.

Eastern Region. Scattered solitarious adults were present in parts of the summer breeding areas on both sides of the Indo-Pakistan border during August. Unusually heavy rains caused flooding in some places in Rajasthan, **India** and in the Tharparkar Desert of **Pakistan**. Consequently, ecological conditions should remain favourable longer than in most years and breeding is likely to extend beyond the forecast period, causing locust numbers to increase with a slight risk of local outbreaks developing. Therefore, regular surveys should be maintained in both countries for several more months.

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DLIS: www.fao.org/ag/locusts

No. 335

DESERT LOCUST BULLETIN

Weather & Ecological Conditions in August 2006

Good rains fell in the Sahel of West Africa and Sudan during August, and ecological conditions were favourable for breeding in most areas. Unusually heavy rains and flooding occurred in Ethiopia, Saudi Arabia, and along the Indo-Pakistan border where breeding conditions are expected to remain favourable for several months.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) oscillated between 15N and 20N over the Sahel during August. Consequently, light to moderate rains fell south of about 18N in southern Mauritania, northern Mali (Timetrine, Tilemsi Valley, Adrar des Iforas, Tamesna) and Niger (Tamesna, Air). Annual vegetation continued to develop and conditions were favourable for breeding in most places. At times, the ITCZ reached as far north as 24N over southern Algeria, causing localized showers north of 18N in northern Mali and in the extreme south of Algeria near Bir Bou Mokhtar as well as southwest of Tamanrasset. In Niger, heavier showers fell in the southern Air Mountains (Tabelot, 57 mm), in the northeast (Bilma, 64 mm), and in the northwest (Tazerzait Plateau). As a result, vegetation is expected to improve in these areas. In northwest Libya, good rains fell in parts of the Al Hamada Al Hamra region and breeding conditions were said to be favourable.

In the **Central Region**, the ITZC oscillated between 15N and 20N over northern Sudan during August. Consequently, good rains fell over a large portion of the summer breeding areas in the interior of Sudan, mainly in North Darfur, North Kordofan and near Kassala, and in western Eritrea during the first two decades of the month. Less rain fell further north in the Baiyuda Desert south of Dongola, Sudan. Although less rain fell during the last decade of August in these areas, ecological conditions remained favourable for breeding. Heavy rains in the Ethiopian Highlands caused the Awash and Dechatu rivers to flood in the Dire Dawa area. Light to moderate rains fell along the Red Sea coastal plains from Al Mukha, Yemen and Jizan, Saudi Arabia for the second consecutive month. Some of the rains extended further north along the plains in Saudi Arabia to Lith while heavy rains in the Asir Mountains caused flooding on the coast near Jizan. Ecological conditions were favourable for breeding and are likely to remain so for the next few months. Light rain fell in the interior of Yemen near Marib and Shabwah in early August and again at the end of the month but vegetation was drying out. Light to moderate rain fell at times in some coastal and interior areas of Oman.

In the **Eastern Region**, monsoon rains continued to fall in the summer breeding areas along both sides of the Indo-Pakistan border during August. Unusually heavy rains occurred from the 18th to the 22nd in Rajasthan, India between Barmer and Jaisalmer and in adjacent areas of the Tharparkar Desert in Pakistan. Severe flooding was reported in Rajasthan near Barmer where nearly 600 mm of rain (more than double the annual average) fell in three days as well as in Mirpurkhas, Pakistan. Consequently, ecological conditions are expected to remain favouable for locust breeding in Tharparkar and southern Rajasthan for several months.

Area Treated

Libya	120 ha (10-11 August)

Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• **SITUATION**

During August, scattered solitarious mature adults were present and breeding on a small scale in the centre (Tagant, northern Brakna) and in the south (Trarza, the two Hodhs), mainly south of 18N. Although most of the hoppers were first and second instar, some fourth and fifth instar hoppers were reported during the second half of the month. Locust densities remained very low with no more than 100 hoppers and 65 adults seen at a single location.

• **FORECAST**

Locust numbers are expected to increase further in the centre and south (Trarza, Brakna, Assaba, Tagant, the two Hodhs) as small-scale breeding continues during September. If vegetation begins to dry out, adults will appear in the northwest (Inchiri and southwest Adrar) where they could breed if rains occur.

Mali

• **Situation**

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

• **Forecast**

Scattered adults are likely to be present and breeding on a small scale in a few places in Timetrine, Tilemsi Valley, Adrar des Iforas and Tamesna. Locusts may also be present in areas of recent rainfall between Tombouctou and Araouane.

Niger

• **Situation**

During August, scattered solitarious immature and mature adults were seen in parts of the central Air Mountains, on the Tamesna Plains between Tahoua (1457N/0519E) and Agadez (1700N/0756E) as well as northwest of In Abangharit (1754N/0559E), and between Tanout (1505N/0850E) and Agadez.

• **Forecast**

Small-scale breeding is likely to be in progress or will occur in parts of Tamesna, the Air Mountains and near Tanout, causing locust numbers to increase slightly during the forecast period. As vegetation begins to dry out in October, locusts are expected to concentrate in remaining green areas and increase in density.

Chad

• **Situation**

No locusts were reported during the first decade of August in the summer breeding areas in the west (Kanem) and in the east (Biltine and Ennedi) of the country.

• **Forecast**

Isolated adults may be present in a few places in Kanem, Batha, Biltine and BET provinces, mainly north of 15N, and breed on a small scale in areas of recent rainfall.

Senegal

• **Situation**

No locusts were seen during surveys carried out in the north up to 20 August.

• **Forecast**

No significant developments are likely.

Benin, Burkina Faso, Cameroon, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea Bissau, Guinea, Liberia, Nigeria, Sierra Leone and Togo

• **Forecast**

No significant developments are likely.

Algeria

• **Situation**

No locusts were seen during surveys carried out in August in the central Sahara near Adrar (2753N/0017W), in the south near Tamanrasset (2250N/0528E) and along the Malian border near Bir Bou Mokhtar (2120N/0056E).

• **Forecast**

Scattered adults may be present and breeding near the Algerian border, primarily near In Amenas and to a lesser extent near Illizi and Djanet.

Morocco

• **Situation**

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

• **Forecast**

No significant developments are likely.

Libyan Arab Jamahiriya

• **Situation**

During the second week of August, solitarious fledglings and adults were present at densities of 3-5 adults/m^2 in the northwest of the country in the Al Hamada Al Hamra region at 20 locations south of Ghadames (3010N/0930E) and at four locations near Nalut (3152N/1058E). Solitarious first and second instar hoppers at densities up to 4 hoppers/m^2, mixed with *transiens* adult groups, were reported at three places southeast of Ghadames and ground control teams treated 120 ha on the 10-11 August.

• **Forecast**

Small-scale breeding could continue in areas of recent rainfall in the Al Hamada Al Hamra causing locust numbers to increase slightly.

Tunisia

• **Situation**

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

• **Forecast**

No significant developments are likely.

CENTRAL REGION

Sudan

• **Situation**

During August, no locusts were seen during surveys carried out in the summer breeding areas of North Kordofan, the Baiyuda Desert, and on the western side of the Red Sea Hills.

• **Forecast**

Scattered adults may be present in a few places in the summer breeding areas in Kordofan and Darfur and, perhaps to a lesser extent, near Kassala. If so, locust numbers could gradually increase as a result of small-scale breeding in areas of recent rainfall (as far north as 16N in Darfur and Kordofan, and near Shendi).

Eritrea

• **Situation**

No locusts were seen during a survey carried out in the summer breeding areas in the western lowlands on 16-19 August.

• **Forecast**

Isolated adults may be present in parts of the western lowlands and could breed on a limited scale in areas of recent rainfall.

Ethiopia

• **Situation**

No reports were received during August.

• **Forecast**

No significant developments are likely.

Djibouti

• **Situation**

No reports were received during August.

• **Forecast**

No significant developments are likely.

Somalia

• **Situation**

No locusts were reported during the first week of August.

• **Forecast**

No significant developments are likely.

Egypt

• **Situation**

During August, isolated mature adults persisted at one place in the Red Sea Hills northeast of Aswan (2405N/3256E). Elsewhere, no locusts were seen during surveys along Lake Nasser and in the Western Desert.

• **Forecast**

Low numbers of locusts may be present in agricultural areas in parts of the Western Desert. No significant developments are likely.

Saudi Arabia

• **Situation**

During the first week of August, no locusts were seen during surveys carried out along the central and southern Red Sea coastal plains, and in the interior near Buraydah (2620N/4359E) as well as near the Jordanian border. Surveys were undertaken again on the central coast and interior areas on 26-27 August but no locusts were found.

• **Forecast**

Scattered adults may be present or could appear on the Red Sea coastal plains near Jizan and breed in areas of recent rainfall.

Yemen

• **Situation**

No locusts were seen during surveys carried out in the summer breeding areas in the interior near Marib (1525N/4521E) on 10 August.

• **Forecast**

Scattered adults may be present or could appear on the Red Sea coastal plains and breed on a limited scale in areas of recent rainfall.

Oman

• **Situation**

No locusts were seen during surveys carried out in August on the Musandam Peninsula, on the northern Batinah coast and in the northern interior.

• **Forecast**

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Lebanon, Palestine, Qatar, Syria, Tanzania, Turkey, UAE and Uganda

• **Forecast**

No significant developments are likely.

EASTERN REGION

Iran

• **Situation**

No locusts were seen during surveys carried out on the southern coast of Hormozgan province near Bandar Abbas and Jask on August 19.

• **Forecast**

No significant developments are likely.

Pakistan

• **Situation**

During the second half of July and throughout August, scattered mature adults at densities of up to 15 adults/ha were present at a few locations in Tharparkar, Khipro and Cholistan deserts.

• **Forecast**

Small-scale breeding is expected to occur in areas of recent rainfall in Tharparkar Desert, causing locust numbers to increase.

India

• **Situation**

During the second half of July, low numbers of solitarious adults were present southwest of Jodhpur (2618N/7308E).

No locusts were reported during the first half of August.

• **Forecast**

Small-scale breeding is expected to occur in areas where heavy rain fell near Barmer and Jaisalmer last month, causing locust numbers to increase.

Afghanistan

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Announcements

Locust reporting. During recession periods, countries should report at least once/month and send RAMSES data with a brief interpretation. During locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent twice/week and affected countries are encouraged to prepare decadal bulletins summarizing the situation. All information should be sent by e-mail to the FAO/ECLO Desert Locust Information Service (eclo@fao.org). Information received by the end of the month will be included in the FAO Desert Locust 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.

eLocust2. FAO has developed a new version of eLocust in collaboration with affected countries and the French Space Agency (CNES/Novacom) that allows field officers to enter survey and control data directly in the field and transmit it in real time via satellite to their national locust centre. Data can also be downloaded to a PC and visualized on GoogleEarth. The software is in both English and French. FAO DLIS has distributed units to nearly all of the frontline countries so that they can become operational this summer. Photos and more information are available at: www.fao.org/ag/locusts/en/activ/DLIS/index.html

Desert Locust warning levels. DLIS is experimenting with a colour-coded scheme to indicate the seriousness of the current Desert Locust situation: green for *calm*, yellow for *caution* and red for *danger*. The scheme has been applied to the Locust Watch web page and to the monthly bulletin's header. The levels indicate the perceived risk or threat of current Desert Locust infestations to crops and appropriate actions are suggested for each level. Your feedback on the usefulness of this scheme and any suggested improvements is welcome.

CNLA Mauritania. The Government of Mauritania has recently approved the establishment of an autonomous National Anti-Locust Centre (Centre National de Lutte Antiacridienne, CNLA), which has its own budget and decision-making authority. Their web site is: www.claa.mr. Other countries are encouraged to follow the example of Mauritania.

EMPRES/CRC website. Detailed information on EMPRES/CR and the FAO Central Region Commission as well as member country profiles can be found on the new EMPRES/CRC website at: www.crc-empres.org.

New information on Locust Watch. New material is available on the Locust Group's web page, Locust Watch (www.fao.org/ag/locusts):

- Report of the 2006 Iran/Pakistan Joint Border Survey (English) – Publications section
- Fighting the Locusts … Safely brochure (French and Arabic) – Publications section
- Report of the 25th Session of the Central Region Commission (English and Arabic) – Publications section

DLCC documentation. The working documents for the 38th Session of the Desert Locust Control Committee (DLCC) are being posted on LocustWatch web page (www.fao.org/ag/locusts) as they become available in English, French and Arabic. Please check the page on a regular basis.

No. 335

DESERT LOCUST BULLETIN

2006 events. The following meetings are scheduled:

- **DLCC.** 38th Session, Rome, 11-15 September
- **EMPRES/CR.** 14th Liaison Officer Meeting, Muscat (Oman), 11-15 November
- **SWAC.** 25th Session, Tehran (Iran), 20-23 November
- **EMPRES/WR and CLCPRO.** 5th EMPRES Liaison Officer Meeting and 2nd Session CLCPRO, Nouakchott (Mauritania), 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.

WARNING LEVELS

GREEN

- Calm. No threat to crops. Maintain regular surveys and monitoring.

YELLOW

- Caution. Potential threat to crops. Increased vigilance is required; control operations may be needed.

RED

- Danger. Significant threat to crops. Intensive survey and control operations must be undertaken.

REGIONS

WESTERN

- locust-affected countries in West and North-West Africa: Algeria, Chad, Libya, Mali, Mauritania,

Morocco, Niger, Senegal, Tunisia; during plagues only: Burkino Faso, Cape Verde, Gambia, Guinea and Guinea-Bissau.

CENTRAL

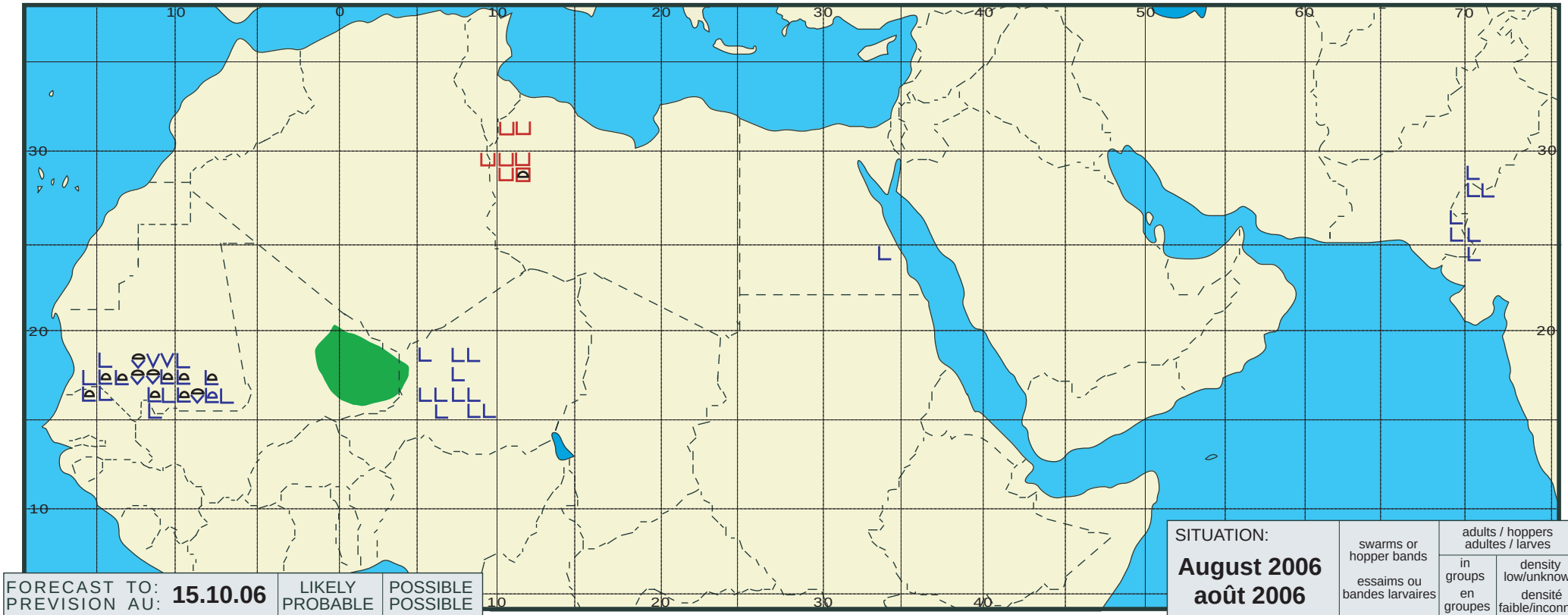
- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

EASTERN

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

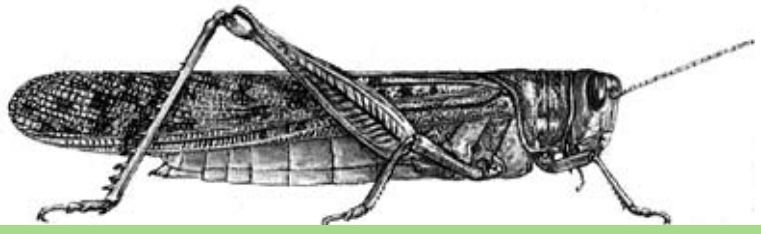
Desert Locust Summary
Criquet pèlerin - Situation résumée

335



FORECAST TO: PREVISION AU: **15.10.06**	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 2006 août 2006**	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. 336**

(2 October 2006)

General Situation during September 2006 Forecast until mid-November 2006

The Desert Locust situation remained calm during September. Small-scale breeding occurred in Mauritania and Niger causing locust numbers to increase slightly but not to a point that threatened agriculture. Ground teams treated solitarious hoppers and adults on a farm in central Algeria. No significant infestations were reported from the Central Region where only isolated adults were present on the Red Sea coast in Saudi Arabia and Yemen. Local breeding occurred in one area of northwest Somalia. In the Eastern Region, solitarious adults were scattered in a few places along both sides of the Indo-Pakistan border. As vegetation dries out, adults will concentrate in those areas that remain green and there is a slight risk of a few small local outbreaks developing in Mauritania and Niger. Low numbers of adults from the summer breeding areas are expected to appear during the forecast period in northwest and northern Mauritania, in Western Sahara and along both sides of the Red Sea. Small-scale breeding will eventually occur in these areas in the coming months.

Western Region. Small-scale breeding occurred during September in southern and central **Mauritania** and on the Tamesna Plains in **Niger** where low numbers of solitarious hoppers and adults were present in both countries. The situation is probably similar in northern **Mali** but surveys could not be undertaken to confirm this. There are indications that breeding could be coming to an end in southern Mauritania but it is likely to continue in Niger where unusually heavy rains fell in August. As vegetation dries out in southern Mauritania, adults are likely to appear in northwest Mauritania and in **Western Sahara** where good rains fell in September. Adults may also reach northern Mauritania as good rains also fell there. Upon arrival, adults are likely to mature and at least one generation of breeding could take place before temperatures become too cool. Elsewhere, ground teams treated 120 ha of solitarious hoppers and adults in an irrigated agricultural area near Adrar, **Algeria**. Scattered adults may be present in northwest **Libya**. No locusts were reported in **Chad**.

Central Region. No locusts were reported during September in the summer breeding areas in **Sudan** or **Eritrea** although only a portion of each was surveyed. A few solitarious adults were present on the Red Sea coastal plains in southwest **Saudi Arabia** and in **Yemen**. Low numbers of adults may appear somewhat earlier this year in the winter breeding areas along the western side of the Red Sea, first in northeast Sudan near Wadi Diib and also on the Eritrean coast as good rains have fallen recently in both places. All efforts should be made to monitor these areas closely and regularly throughout the forecast period. Elsewhere, local breeding occurred on the plateau in northwest **Somalia**.

Eastern Region. Although monsoon rains steadily declined during September along both sides of the Indo-Pakistan border, breeding conditions remained favourable in those areas that received unusually heavy rain in August. Nevertheless, only scattered solitarious adults were reported in a few places in Rajasthan, **India** and in the Tharparkar and Cholistan deserts in **Pakistan**.

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

No. 336

DESERT LOCUST BULLETIN

Weather & Ecological Conditions in September 2006

Seasonal rains started to decline by mid-September in the summer breeding areas in the Sahel of West Africa. Good rains continued in Sudan and along parts of the Red Sea coast. Monsoon rains came to an end along the Indo-Pakistan border but ecological conditions remained favourable.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) oscillated between 15N and 20N over the Sahel during September but as the month progressed, it began to retreat towards the south, suggesting an early end to rains in some areas. During the first decade of the month, good rains continued to fall in most of the summer breeding areas in southern Mauritania, southern Algeria and in the Tamesna and Air Mountains in Niger while only sporadic showers occurred in northern Mali and in eastern Chad. By mid month, rainfall declined in Niger, Chad and southern Algeria. This decline continued during the remainder of the month and extended to most all of the summer breeding areas where very little rain fell except in the central Adrar des Iforas in Mali and the southern part of the Tamesna Plains in both Mali and Niger. Although rains may have come to an early end in many places within the summer breeding area, ecological conditions continued to remain favourable, especially in those areas that received unusually heavy rains in August such as parts of Tamesna and central Niger. In northwest Mauritania and adjacent areas of Western Sahara, widespread showers fell during the first and third decades of September mainly between Akjoujt and Guelta Zemmur but also in the El Hank region of northeast Mauritania during the first decade. Consequently, ecological conditions are expected to be improving in these places.

In the **Central Region**, good rains fell during the first decade of September in the summer breeding areas of Sudan as far north as 17N in North Darfur and North Kordofan, reaching the Baiyuda Desert south of Dongola and the Nubian Desert south of Egyptian border. These rains extended into central and eastern Sudan, reaching the western lowlands in Eritrea. Rainfall continued in the above areas during the second decade except for parts of North Darfur and Northwest Kordofan. In the winter breeding areas, good rains fell during the first two decades in the Red Sea Hills in Sudan and in Wadi Diib/Oko. Good rains also fell on the Red Sea coastal plains from the Tokar Delta in Sudan to Djibouti and from Jeddah, Saudi Arabia to nearly Aden, Yemen during the first decade. Less rain occurred during the second decade, falling mainly along the Yemeni coast and near Qunfidah, Saudi Arabia, but improved slightly by the end of the month along the coast in Yemen and southern Eritrea. Nevertheless, ecological conditions remained favourable in the summer breeding areas as well as on the eastern side of the Red Sea while they were improving in Wadi Diib and along the Red Sea coast in Sudan and Eritrea. In northwest Somalia, good rains fell on the plateau between Hargeisa and Djibouti in early September.

In the **Eastern Region**, monsoon rains continued during the first decade of September in Tharparkar and Khipro Deserts in southeastern Pakistan and, to a lesser extent, south of Jaisalmer in Rajasthan, India. Very little rain fell during the remainder of the month in both countries. Nevertheless, ecological conditions were favourable for breeding in many areas and will probably remain so during the forecast period in Barmer and Jaisalmer districts in India and in Tharparkar, Pakistan where unusually heavy rains and flooding occurred in August.

Area Treated

Algeria	120 ha (14 September)

Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• **Situation**

During September, small-scale breeding continued and expanded in the south and centre of the country between 16N and 19N, extending from Rkiz (1658N/1514W) and Aguilal Faye (1827N/1444W) in the west to Nema (1636N/0715W) and Oualata (1717N/0701W) in the east, and reaching as far north as Tidjikja (1833N/1126W). Solitarious hoppers of all instars were present at relatively low densities of less than 85 hoppers/site, mainly during the first half of the month. The density of solitarious immature and

mature adults, including fledglings and new adults, varied from 2,000 adults/ha during the second week of September to 200 adults/ha during the last week.

• **Forecast**

As vegetation starts to dry out in the south, breeding is expected to decline and locusts will concentrate in those areas that remain green. Low numbers of adults are likely to appear in the northwest (Dakhlet Nouadhibou, Inchiri and Adrar) and north (Tiris Zemmour) and breed on a small scale in areas of recent rainfall.

Mali

• **Situation**

During the first decade of September, isolated solitarious adults were present near Aguelhoc (1927N/0052E). No locusts were reported during the remainder of the month.

• **Forecast**

Scattered adults are almost certainly present and breeding on a small scale in parts of Timetrine, Tilemsi Valley, Adrar des Iforas and Tamesna. Breeding is expected to continue during the forecast period, especially if additional rainfall occurs. Locusts may also be present in areas of green vegetation between Tombouctou and the Mauritanian border.

Niger

• **Situation**

During September, an increasing number of solitarious immature and mature adults were reported on the Tamesna Plains. Initially, only isolated adults were seen but by the end of the month adults were seen at 71 locations, densities had reached 200 adults/ha in one place, and an increasing number of adults were copulating. Solitarious first to third instar hoppers were present at three places between In Gall (1651N/0701E) and Agadez (1700N/0756E), suggesting that laying occurred at the end of August with hatching during the second week of September. Isolated immature and mature adults were seen during the last week of the month near Tanout (1505N/0850E) and the Termit Massif 1615N/1117E).

• **Forecast**

Small-scale breeding will continue in the Tamesna and may occur in those places in the Air Mountains as well as near Tanout and Termit where good rains fell in August. Fledglings and new immature adults will appear from the second week of October onwards in Tamesna. Consequently, locust numbers will increase during the forecast period and, as vegetation begins to dry out, locusts are likely to concentrate in remaining green areas and perhaps form a few small groups.

Chad

• **Situation**

Late reports indicated that no locusts were seen during surveys carried out in Kanem, Biltine and BET from 11 to 31 August.

• **Forecast**

Isolated adults may be present in a few places in Kanem, Batha, Biltine and BET provinces, mainly north of 15N, and breed on a small scale in areas of recent rainfall.

Senegal

• **Situation**

No locusts were seen during surveys carried out in the north up to 20 September.

• **Forecast**

No significant developments are likely.

Benin, Burkina Faso, Cameroon, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea Bissau, Guinea, Liberia, Nigeria, Sierra Leone and Togo

• **Forecast**

No significant developments are likely.

Algeria

• **Situation**

During September, scattered second to fifth instar solitarious hoppers and mature adults were present in an irrigated agricultural area in the central Sahara near Adrar (2753N/0017W). Ground teams treated 120 ha on the 14th. No locusts were seen during surveys carried out in the southern Sahara between the Hoggar Mountains and the Mali/Niger borders, in the southeast near Djanet (2434N/0930E), and in the west near Tindouf (2741N/0811W).

• **Forecast**

Scattered adults are likely to persist in irrigated areas near Adrar. Other adults may be present in areas of recent rainfall south of Tamanrasset where small-scale breeding could occur.

Morocco

• **Situation**

No reports were received during September.

• **Forecast**

Low numbers of adults are likely to appear and breed on a small-scale in the Western Sahara between Tichla and Guelta Zemmur.

Libyan Arab Jamahiriya

• **Situation**

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

• **Forecast**

Scattered adults may be present in parts of the Al Hamada Al Hamra where small-scale breeding could occur in areas of recent rainfall and cause locust numbers to increase slightly.

Tunisia

• **Situation**

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

• **Forecast**

No significant developments are likely.

CENTRAL REGION

Sudan

• **Situation**

No locusts were seen during a survey on 1-3 September in North Kordofan near Umm Saiyala (1426N/3112E) and along the Nile south of Khartoum.

• **Forecast**

Scattered adults are likely to be present and breeding on a small scale in North Darfur and North Kordofan and, to a lesser extent, in parts of the Baiyuda Desert, between Atbara and the Red Sea Hills, and between Kassala and Haiya. Consequently, locust numbers could gradually increase during the forecast period and concentrate in remaining areas of green vegetation. As early rains may have fallen in Wadi Oko/Diib and the Red Sea Hills, locusts could first appear and breed there as well as on the Red Sea coastal plains.

Eritrea

• **Situation**

No locusts were seen during a survey carried out in part of the summer breeding areas in the western lowlands on 14-19 September.

• **Forecast**

Scattered adults are likely to be present and breeding on a limited scale in the western lowlands between 16N and 17N, including Khor Baraka, and on the Red Sea coastal plains in areas of recent rainfall and runoff between Tio and the Sudanese border. Additional locusts could appear on the coast during the forecast period and breed.

Ethiopia

• **Situation**

No surveys were undertaken and no locusts were reported during the first three weeks of September.

• **Forecast**

No significant developments are likely.

Djibouti

• **Situation**

No reports were received during September.

• **Forecast**

No significant developments are likely.

Somalia

• **Situation**

A few isolated fifth instar hoppers and maturing solitarious adults were seen on the plateau near Hargeisa (0931N/4402E) on 2-6 September.

• **Forecast**

No significant developments are likely.

Egypt

• **Situation**

No locusts were seen during surveys carried out near Abu Simbel and along the Mediterranean coast near Matruh (3121N/2714E) in September.

• **Forecast**

Isolated adults could start to appear on the Red Sea coastal plains between Shalatyn and the Sudanese border at the end of the forecast period.

Saudi Arabia

• **Situation**

No locusts were seen during a joint survey with Yemen on the Red Sea coastal plains between Jizan (1656N/4233E) and the Yemeni border on 16-20 September except for an isolated immature adult south of Jizan. No locusts were seen elsewhere along the coast or in the interior during surveys undertaken in September.

• **Forecast**

Scattered adults may be present on the Red Sea coastal plains between Qunfidah and the Yemeni border where they could breed on a small-scale in areas of recent rainfall. If so, locust numbers will increase slightly during the forecast period. All efforts should be made to monitor the situation closely.

Yemen

• **Situation**

No locusts were seen during a joint survey with Saudi Arabia on the Red Sea coastal plains between Hodeidah (1450N/4258E) and the Saudi Arabian

border on 16-20 September except for an isolated mature adult near Al Qutai (1454N/4312E).

• **Forecast**

Small-scale breeding is expected to occur in areas of recent rainfall on the Red Sea coastal plains. Consequently, locust numbers will increase slightly during the forecast period. All efforts should be made to monitor the situation closely.

Oman

• **Situation**

No locusts were seen during surveys carried out on the Musandam Peninsula and on the northern Batinah coast during September.

• **Forecast**

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Lebanon, Palestine, Qatar, Syria, Tanzania, Turkey, UAE and Uganda

• **Forecast**

No significant developments are likely.

EASTERN REGION

Iran

• **Situation**

No locusts were seen during surveys carried out on the southern coast of Hormozgan province between Bandar Abbas and Jask on 17-18 September.

• **Forecast**

No significant developments are likely.

Pakistan

• **Situation**

During the first half of September, isolated mature adults were present in Lasbela Valley west of Karachi and at a few places near the Indian border in Tharparkar and Cholistan deserts.

• **Forecast**

Locust numbers will decline in the summer breeding areas in Cholistan and Khipro deserts but there is a risk that small-scale breeding could continue in Tharparkar where unusually heavy rain fell in August.

India

• **Situation**

No locusts were reported during the second half of August.

During September, no locusts were seen during surveys in Rajasthan except for scattered mature adults at two locations west of Barmer (2543N/7125E) near the Pakistani border.

• **Forecast**

Locust numbers will decline in Rajasthan with the possible exception of the area between Barmer and Jaisalmer where unusually heavy rain fell in August that could allow breeding to continue into October.

Afghanistan

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Announcements

Locust reporting. During recession periods, countries should report at least once/month and send RAMSES data with a brief interpretation. During locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent twice/week and affected countries are encouraged to prepare decadal bulletins summarizing the situation. All information should be sent by e-mail to the FAO/ECLO Desert Locust Information Service (eclo@fao.org). Information received by the end of the month will be included in the FAO Desert Locust 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.

eLocust2. FAO has developed a new version of eLocust in collaboration with affected countries and the French Space Agency (CNES/Novacom) that allows field officers to enter survey and control data directly in the field and transmit it in real time via satellite to their national locust centre. Data can also be downloaded to a PC and visualized on GoogleEarth. The software is in both English and French. FAO DLIS has distributed units to nearly all of the frontline countries. Photos and more information are available at: www.fao.org/ag/locusts/en/activ/DLIS/index.html

Desert Locust warning levels. A colour-coded scheme has been established to indicate the seriousness of the current Desert Locust situation: green for *calm*, yellow for *caution* and red for *danger*. The scheme is applied to the Locust Watch web page and to the monthly bulletin's header. The levels

indicate the perceived risk or threat of current Desert Locust infestations to crops and appropriate actions are suggested for each level. Your feedback on the usefulness of this scheme and any suggested improvements is welcome.

EMPRES/CRC website. Detailed information on EMPRES/CR and the FAO Central Region Commission as well as member country profiles can be found on the new EMPRES/CRC website at: www.crc-empres.org.

New information on Locust Watch. DLIS will launch a new initiative in October called *Desert Locust e-info news* as a means of keeping everyone informed on a weekly basis of new information on the Locust Group's web page, Locust Watch (www.fao.org/ag/locusts).

2006-07 events. The following meetings are scheduled:

- **EMPRES/CR.** 14th Liaison Officer Meeting, Muscat (Oman), 11-14 November
- **SWAC.** 25th Session, Tehran (Iran), 20-23 November
- **EMPRES/WR.** 5th Liaison Officer Meeting, Nouakchott (Mauritania), 4-7 December
- **CLCPRO.** 3rd Executive Committee, Nouakchott (Mauritania), 8-9 December
- **EMPRES/WR.** 2nd Session of the Steering Committee, Bamako (Mali), 22-24 January

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.

WARNING LEVELS

GREEN

- Calm. No threat to crops. Maintain regular surveys and monitoring.

YELLOW

- Caution. Potential threat to crops. Increased vigilance is required; control operations may be needed.

RED

- Danger. Significant threat to crops. Intensive survey and control operations must be undertaken.

REGIONS

WESTERN

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

CENTRAL

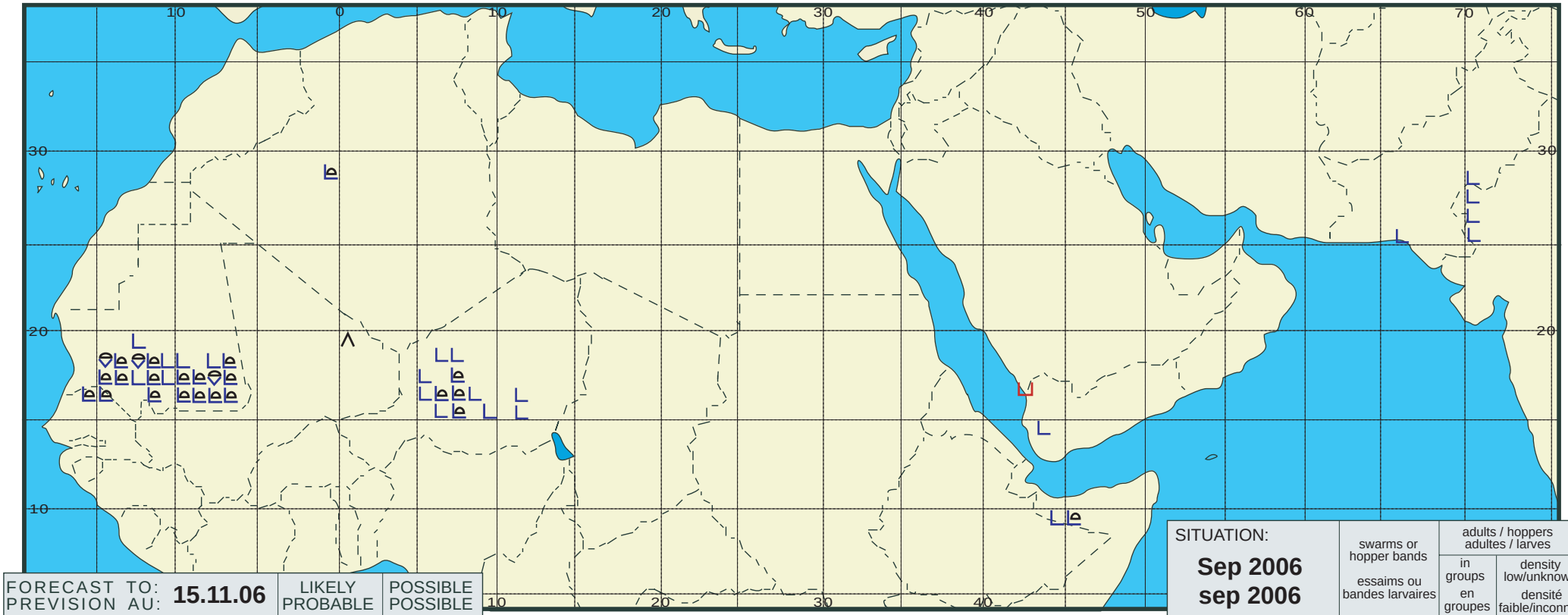
- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

EASTERN

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

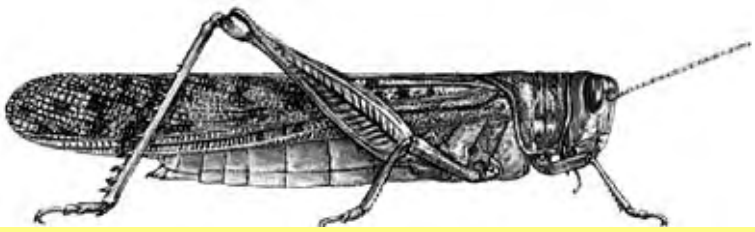
Desert Locust Summary
Criquet pèlerin - Situation résumée

336



FORECAST TO: PREVISION AU: **15.11.06**	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: **Sep 2006** **sep 2006**	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. 337**

(2 November 2006)

General Situation during October 2006 Forecast until mid-December 2006

A local Desert Locust outbreak developed in northwest Mauritania in early October and by mid-month small hopper groups and bands had formed. The outbreak is currently confined to Mauritania and ground control teams treated 1,450 ha during the month. Small-scale breeding continued in Niger where a few small hopper groups have formed and may be in progress in northern Mali. Scattered adults were present in Western Sahara. Breeding will continue in northwest Mauritania, causing some groups and perhaps a few swarms to form by December, and a few small groups may form in Niger as vegetation dries out. Intensive survey efforts should be maintained in both countries as well as in Western Sahara and Algeria. In the Central Region, scattered locusts were present in the interior of Sudan and on the Red Sea coast in Yemen. Small-scale breeding is expected to commence along the Red Sea coast during the forecast period. In the Eastern Region, scattered adults were present along both sides of the Indo-Pakistan border where small-scale breeding could still take place in areas that were flooded during August.

Western Region. As a result of widespread summer breeding over a relatively large area of southern and central **Mauritania** during the past few months, a local outbreak developed in the Inchiri region of northwest Mauritania in early October. Although control operations were immediately mounted against mature adults and a swarm, laying occurred and small hopper groups and bands formed by mid-month. Only scattered adults were found in adjacent areas of **Western Sahara** and northern Mauritania, suggesting that the outbreak is limited to Inchiri. During the forecast period, a few small adult groups and swarms could form and move north into Western Sahara and northern Mauritania. If temperatures remain warm and good rains fall, a second generation of laying and hatching could occur by mid December. Elsewhere, solitarious and *transiens* hoppers and adults are likely to continue to form a few small groups as they concentrate in vegetation that remains green on the Tamesna Plains in **Niger**. Isolated adults were present near Tombouctou, **Mali** and may also be present and breeding in the northeast.

Central Region. Isolated solitarious adults were present in a few places in northeast **Sudan** and on the Red Sea coast in **Yemen**. As good rains fell in the winter breeding areas on both sides of the Red Sea, small-scale breeding is expected to occur in some places along the coastal plains of **Eritrea**, Sudan, southeast **Egypt**, **Saudi Arabia** and Yemen causing locust numbers to increase slightly. Consequently, all efforts should be made to monitor these areas closely and regularly throughout the forecast period.

Eastern Region. Low numbers of solitarious adults were present in a few places along both sides of the **Indo-Pakistan** border during October. Although monsoon rains have ended, ecological conditions remained favourable in those areas that received unusually heavy rain in August, which may allow small-scale breeding to occur 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 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/ag/locusts

No. 337

DESERT LOCUST BULLETIN

Weather & Ecological Conditions in October 2006

Seasonal rains continued to decline and vegetation was drying out in the summer breeding areas of the Sahel in October. Good rains fell along parts of the Red Sea coast mainly between Eritrea and Egypt. Vegetation remained green along both sides of the Indo-Pakistan border.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) continued to retreat southwards, oscillating between 10N and 15N. During the first decade, only light showers fell in the summer breeding areas in southwest and southeast Mauritania but good rains fell in the Adrar des Iforas in Mali and the Air Mountains in Niger while less rain fell on the Tamesna Plains in both countries. Good rains also fell in eastern Algeria and western Libya (in the Al Hamada Al Hamra region in the northwest while flooding was reported in the southwest near Ghat). During the second decade, light showers fell in the Tamesna and occasionally in the southern and eastern Sahara in Algeria. Vegetation started to dry out in the many of the summer breeding areas in the Sahel while ecological conditions remained favourable in parts of central and southern Algeria. Light showers fell sporadically during the month in northwest and northern Mauritania and in adjacent areas of Western Sahara. Vegetation was green in the southern part of Western Sahara where good rains fell during the first and third decades of September. At the end of the month, moderate to heavy rain associated with an eastward-moving Mediterranean depression fell along the southern side of the Atlas Mountains in parts of Morocco and Algeria on 25-27 October.

In the **Central Region**, vegetation continued to dry out in the summer breeding areas in the interior of Sudan during October as the ITCZ retreated southwards and only sporadic rains fell. In the winter breeding areas along the Red Sea coast, good rains fell at times along the Red Sea coast between Massawa, Eritrea and Abu Ramad, Egypt. Rainfall was primarily concentrated near the Sudan/Eritrea border and on the coast between Port Sudan and the Egyptian border. On the 28-29th, widespread rains fell on the Eritrean (Shieb, 57 mm) and Sudanese coast (Port Sudan, 24 mm), extending across the Red Sea to the central and southern Tihama of Saudi Arabia (Yenbo, 45 mm). Rains also fell on the western side of the Red Sea Hills in eastern Sudan. Consequently, breeding conditions are expected to improve in these areas. In Yemen, ecological conditions remained favourable for breeding on the Red Sea coast and, to a lesser extent, on the Gulf of Aden coastal plains. At the end of the month, light rain fell along the coast and escarpment in northwest Somalia. A few scattered showers fell in parts of Oman.

In the **Eastern Region**, only a few light showers fell at mid-month in Rajasthan, India while other areas along both sides of the Indo-Pakistan border remained dry. Nevertheless, vegetation remained green in many areas in Barmer and Jaisalmer districts in India and in Tharparkar, Pakistan where unusually heavy rains and flooding occurred in August.

Area Treated

Mauritania	1,445 ha (6-31 October)

Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• **Situation**

A small outbreak developed in the northwest region of Inchiri during the first week of October when small groups of mature yellow adults varying in size from 2 to 50 ha with densities up to 8 adults/m^2 were seen laying eggs near Bennichab (1932N/1512W). A 50 ha mature swarm with a density of 20-30 adults/m^2 was seen copulating on the 9th at 1916N/1605W. Hatching started on the 5th and solitarious and *transiens* hoppers formed small groups. By the 16th, a few small bands about 150-500 m^2 in size at densities of 10-20 first and second instar hoppers/m^2 were reported. At the end of the month, some hoppers had reached the third and fourth instar and densities had increased to 90 hoppers/m^2. Only scattered mature adults were seen near the Western Sahara border and in the north between Ouadane (2056N/1137W) and north of Zouerate (2244N/1221W) to 24N. A few second to fifth instar solitarious hoppers were present near the Western Sahara border in Inchiri and north of Zouerate. Ground control operations treated 1,445 ha from 6 to 31 October.

In the summer breeding areas in the south, locusts declined during October as vegetation dried out and adults moved towards the northwest. Only a few solitarious hoppers were reported near Rkiz (1658N/1514W) and Aioun El Atrous (1639N/0936W). Consequently, solitarious adults increased slightly in the Aftout Faye region (ca. 18N/14W) of northern Trarza between Nouakchott and Moudjeria (1752N/1219W) where small-scale breeding was in progress. By the end of the month, a few very small hopper groups and bands of all instars had formed and fledging was underway.

• **Forecast**

Breeding will continue in the northwest and is likely to extend further north if good rains fall. Hoppers will continue to form a few groups and small bands. Fledging will start during the first week of November and continue until the end of the month. During this period, there is a risk that immature adults will form a few small groups and swarms. Most of these should remain in the northwest but a few could move north to Tiris-Zemmour and Western Sahara. If temperatures remain warm and additional rains occur, a second generation of laying and hatching could start by mid December in Inchiri and Aftout Faye, and breeding could take place in Tiris-Zemmour.

Mali

• **Situation**

During October, a few immature solitarious adults were seen on the 20th and 23rd near Tombouctou at Essakane (1646N/0338W) and Aguibar (1632N/0350W). Elsewhere, no locusts were seen during surveys between Nioro (1512N/0935W) and Hombori (1516N/0140W).

• **Forecast**

Scattered adults are almost certainly present and breeding on a small scale in parts of Timetrine, Tilemsi Valley, Adrar des Iforas and Tamesna. Unless additional rainfall occurs, breeding should decline during the forecast period as vegetation dries out. Similarly, locust numbers will increase between Tombouctou and the Mauritanian border.

Niger

• **Situation**

During October, scattered immature and mature solitarious adults, at densities of less than 150 adults/ha, were present in about 100 places on the Tamesna Plains from 5E to the Air Mountains and in the central Air Mountains between Arlit (1843N/0721E) and Timia (1809N/0846E). Small-scale breeding continued in parts of the Tamesna, mainly in the In Abangharit (1754N/0559E) area. By the end of the month, low numbers of solitarious hoppers of all instars and fledglings, mixed with a few *transiens* hoppers and adults, were present in about a dozen places in Tamesna. Up to 3 hoppers/m^2 were present and small hopper groups were forming at two places near In Abangharit. In the Sahel, isolated solitarious immature and mature adults with a few fourth instar hoppers were reported at mid-month in three places between Tanout (1505N/0850E) and Gouré (1359N/1015E).

• **Forecast**

Unless further rainfall occurs, breeding will decline in the Tamesna as vegetation dries out. Consequently, hoppers and adults are expected to concentrate in the few areas that remain green where they could form a few small groups.

Chad

• **Situation**

Late reports indicated that isolated solitarious adults were present in a few places in the east near Kalait (1550N/2054E) and Fada (1714N/2132E) from 11 to 30 September.

No reports were received during October.

• **Forecast**

Small-scale breeding may have taken place near Kalait and Fada where low numbers of locusts are likely to be present. Unless additional rainfall occurs, locust numbers will decline as vegetation dries out.

Senegal

• **Situation**

No locusts were seen during surveys carried out on 18-20 October in the northwest between Saint Louis (1601N/1629W) and Richard Toll (1626N/1541W).

• **Forecast**

No significant developments are likely.

Benin, Burkina Faso, Cameroon, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea Bissau, Guinea, Liberia, Nigeria, Sierra Leone and Togo

• **Forecast**

No significant developments are likely.

Algeria

• **Situation**

During October, no locusts were seen during surveys carried out in the west near Tindouf (2741N/0811W), in the central Sahara near Adrar (2753N/0017W), in the south near Tamanrasset, in the east near Djanet (2434N/0930E) and Illizi, and in the extreme south near the borders of Mali and Niger.

• **Forecast**

Low numbers of adults could appear in the west and in the south during periods of warm southerly winds.

Morocco

• **Situation**

During October, scattered solitarious and *transiens* mature adults were seen in the southern region of Western Sahara west of Awssard (2240N/1410W) on the 18th. A few solitarious adults were also reported north of Awssard. On the 30th, scattered mature solitarious adults were seen near Laayoune (2708N/1313W). No locusts were seen elsewhere between the Mauritanian border in the south and Bir Anzarane (2353N/1431W) as well as near Guelta Zemmur (2508N/1223W).

Isolated adults were seen in the northeast near Bouarfa (3232N/0159W) on 30 October.

• **Forecast**

Small-scale breeding is expected to occur between Tichla and Guelta Zemmur. From mid-November onwards, there is a risk that immature adults and perhaps a few small groups could appear during periods of warm southerly winds from adjacent areas of northwest Mauritania. Consequently, locust numbers are likely to increase during the forecast period. There is a low risk of a few adults and perhaps small groups appearing in the Draa Valley during periods of warm southerly winds from mid November onwards.

Libyan Arab Jamahiriya

• **Situation**

A late report indicated that no locusts were seen during a survey in the southeast near Jebel Arkenu (2215N/2445E) and Jebel Uweinat (2154N/2458E) on 14-15 September.

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

• **Forecast**

Scattered adults may be present in parts of the Al Hamada Al Hamra and near Ghat where small-scale breeding could occur in areas of recent rainfall and cause locust numbers to increase slightly.

Tunisia

• **Situation**

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

• **Forecast**

No significant developments are likely.

CENTRAL REGION

Sudan

• **Situation**

During October, isolated mature adults were seen on the 20th at two places in the northeast along the Atbara River southeast of Ed Damer (1734N/3358E). No locusts were seen to the west in the Baiyuda Desert or south to Shendi (1641N/3322E).

• **Forecast**

Scattered adults may be present in Wadi Oko/Diib and the Red Sea Hills and are likely to appear on the coastal plains. Small-scale breeding will occur in those areas that receive rainfall.

Eritrea

• **Situation**

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

• **Forecast**

Scattered adults are likely to appear on the Red Sea coast between Tio and the Sudanese border during the forecast period and breed in areas of recent rainfall or runoff.

Ethiopia

• **Situation**

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

• **Forecast**

No significant developments are likely.

Djibouti

• **Situation**

No surveys were carried out and no locusts were reported during September and October.

• **Forecast**

No significant developments are likely.

Somalia

• **Situation**

No locusts were seen on the northwest coast, escarpment and plateau during a survey on 7-11 October between Hargeisa (0931N/4402E) and the Djibouti border.

• **Forecast**

No significant developments are likely.

Egypt

• **Situation**

No locusts were seen during surveys carried out on 9 October near Qena (2610N/3243E).

• **Forecast**

Isolated adults could start to appear on the Red Sea coastal plains between Shalatyn and the Sudanese border during the forecast period.

Saudi Arabia

• **Situation**

No reports were received during October.

• **Forecast**

Scattered adults may appear along parts of the Red Sea coastal plains between Rabigh and Jizan where they could breed on a small-scale in areas of recent rainfall, causing locust numbers to increase slightly during the forecast period. All efforts should be made to monitor the situation closely.

Yemen

• **Situation**

In mid-October, isolated immature solitarious adults were seen at one place on the northern Red Sea coast southwest of Suq Abs (1600N/4312E), and immature and mature adults were present on the southern part of the Tihama near Bayt Al Faqih (1430N4317E). No locusts were seen during surveys carried out on the Gulf of Aden coast on 8-9 October.

• **Forecast**

Low numbers of locusts are expected to persist on the Red Sea coastal plains and breed on a small-scale. Consequently, locust numbers will increase slightly during the forecast period. All efforts should be made to monitor the situation closely.

Oman

• **Situation**

No locusts were seen during surveys carried out on the Musandam Peninsula and on the northern Batinah coast during October. No locusts were reported in other regions of the country.

• **Forecast**

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Lebanon, Palestine, Qatar, Syria, Tanzania, Turkey, UAE and Uganda

• **Forecast**

No significant developments are likely.

EASTERN REGION

Iran

• **Situation**

No reports were received during October.

• **Forecast**

No significant developments are likely.

Pakistan

• **Situation**

No reports were received during the second half of September.

During October, scattered immature and mature solitarious adults at densities of up to 50 adults/ha were reported in about a dozen places in the Cholistan and Nara deserts near the Indian border.

• **Forecast**

Locust numbers will decline in the summer breeding areas in Cholistan, Nara and Khipro deserts but there is a risk that small-scale breeding could occur in Tharparkar where unusually heavy rain fell in August.

India

• **Situation**

During October, no locusts were seen during surveys in Rajasthan except for scattered mature solitarious adults at one location west of Jaisalmer (2652N/7055E) on the 16th.

• **Forecast**

Low numbers of locusts are likely to persist in the area between Barmer and Jaisalmer where the unusually heavy rain that fell in August could allow small-scale breeding during the forecast period.

Afghanistan

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Announcements

Locust reporting. During recession periods, countries should report at least once/month and send RAMSES data with a brief interpretation. During locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent twice/week and affected countries are encouraged to prepare decadal bulletins summarizing the situation. All information should be sent by e-mail to the FAO/ECLO Desert Locust Information Service (eclo@fao.org). Information received by the end of the month will

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eLocust2. FAO has developed a new version of eLocust in collaboration with affected countries and the French Space Agency (CNES/Novacom) that allows field officers to enter survey and control data directly in the field and transmit it in real time via satellite to their national locust centre. Data can also be downloaded to a PC and visualized on GoogleEarth. The software is in both English and French. FAO DLIS has distributed units to nearly all of the frontline countries. Photos and more information are available at: www.fao.org/ag/locusts/en/activ/DLIS/index.html

Desert Locust warning levels. A colour-coded scheme has been established to indicate the seriousness of the current Desert Locust situation: green for *calm*, yellow for *caution* and red for *danger*. The scheme is applied to the Locust Watch web page and to the monthly bulletin's header. The levels indicate the perceived risk or threat of current Desert Locust infestations to crops and appropriate actions are suggested for each level. Your feedback on the usefulness of this scheme and any suggested improvements is welcome.

EMPRES/CRC website. Detailed information on EMPRES/CR and the FAO Central Region Commission as well as member country profiles can be found on the new EMPRES/CRC website at: www.crc-empres.org.

New information on Locust Watch. DLIS launched a new initiative in October called *Desert Locust e-info news* as a means of keeping everyone informed on a weekly basis of new information on the Locust Group's web page, Locust Watch (www.fao.org/ag/locusts).

National Desert Locust Centre in Mali. The Government of Mali has recently approved the establishment of a National Desert Locust Centre (Centre National de Lutte contre le Criquet pèlerin) in Bamako attached to the Ministry of Agriculture.

2006-07 events. The following meetings are scheduled:

- **EMPRES/CR.** 14th Liaison Officer Meeting, Muscat (Oman), 11-14 November
- **SWAC.** 25th Session, Tehran (Iran), 20-23 November
- **EMPRES/WR.** 5th Liaison Officer Meeting, Nouakchott (Mauritania), 4-7 December
- **CLCPRO.** 3rd Executive Committee, Nouakchott (Mauritania), 8-9 December
- **EMPRES/WR.** 2nd Session of the Steering Committee, Bamako (Mali), 22-24 January

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.

WARNING LEVELS

GREEN

- Calm. No threat to crops. Maintain regular surveys and monitoring.

YELLOW

- Caution. Potential threat to crops. Increased vigilance is required; control operations may be needed.

RED

- Danger. Significant threat to crops. Intensive survey and control operations must be undertaken.

REGIONS

WESTERN

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

CENTRAL

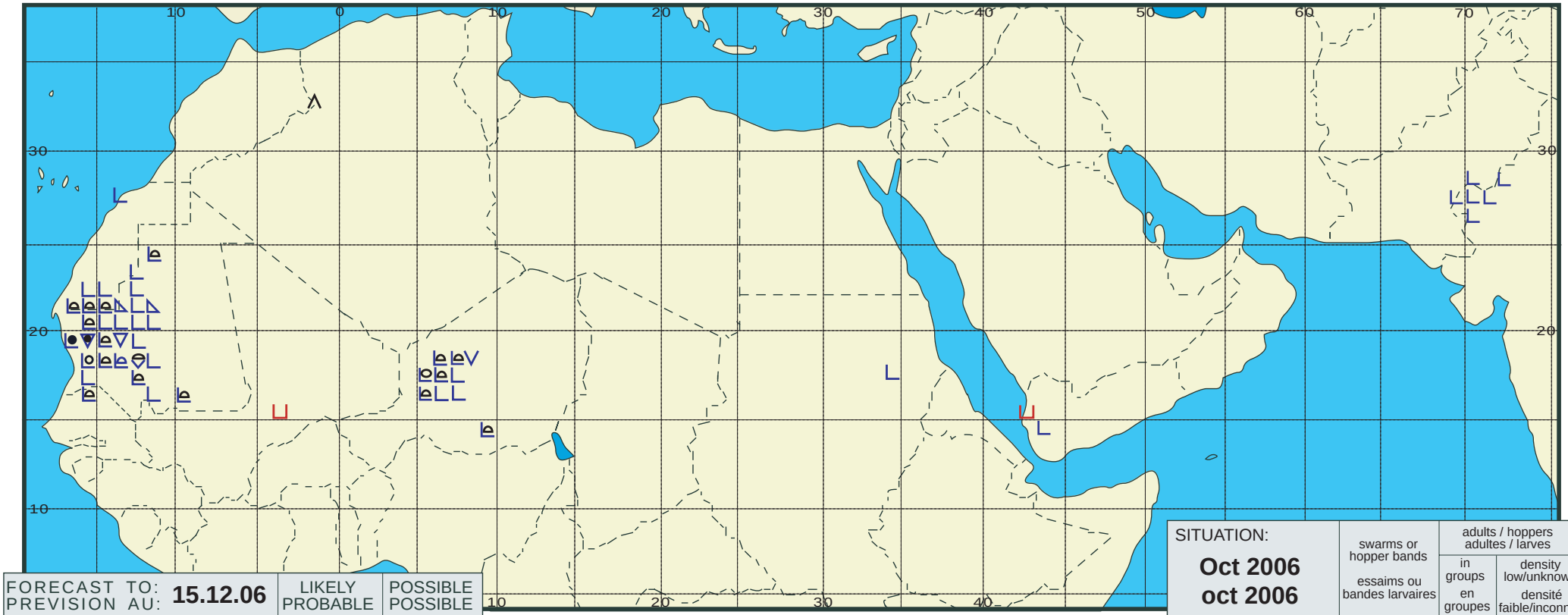
- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

EASTERN

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

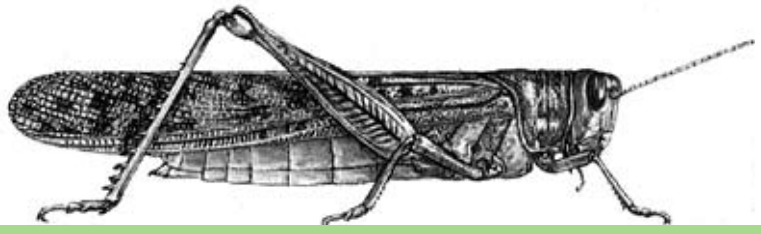
Desert Locust Summary
Criquet pèlerin - Situation résumée

337



FORECAST TO: PREVISION AU: **15.12.06**	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 2006** **oct 2006**	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. 338**

(4 December 2006)

General Situation during November 2006 Forecast until mid-January 2007

Small hopper bands formed during November in northwest Mauritania and in southern Western Sahara from of an outbreak that occurred in October. Small groups of hoppers and adults formed in Mali and Niger as vegetation dried out. Ground teams in Mauritania, Western Sahara and Niger treated 3,200 ha. Limited infestations are expected to persist in these countries in the coming months and, unless further rainfall occurs, breeding should end. Small-scale breeding started along the Red Sea coast in Sudan and Eritrea, while only isolated adults were present in Yemen. Breeding is expected to occur during the forecast period on both sides of the Red Sea causing locust numbers to gradually increase. The situation remained calm in Southwest Asia.

Western Region. Ground control operations treated nearly 900 ha of hopper bands and groups in northwest **Mauritania** and 600 ha in **Western Sahara** during November. In Mauritania, these operations were supplemented with biological control trials using *Metarhizium*. As little rain fell during November, the infestations were limited to just a few areas and should remain so unless more rains fall. Although low temperatures will delay egg development and locust maturation, there is a risk of adults moving further north to northern Mauritania and the Draa Valley in **Morocco** during periods of warm southerly winds. Surveys could not be carried out in northeast **Mali** but small groups of hoppers and adults formed further west near Tombouctou as well as further east on the Tamesna Plains in **Niger**. Ground teams treated 1,700 ha in Niger. As vegetation continues to dry out in Mali and Niger, locusts will concentrate in the few areas that remain green where they could form small groups. No locusts were reported elsewhere in the region.

Central Region. Isolated solitarious adults were present and laying eggs in a few places on the Red Sea coastal plains in **Sudan** and **Eritrea**. Solitarious adults were also reported on the Red Sea coast in **Yemen**. Small-scale breeding is expected to occur during the coming months along parts of the Red Sea coast between southeast **Egypt** and central Eritrea as well as from the central coast in **Saudi Arabia** to Yemen. The extent of the breeding will depend on rainfall during the forecast period. Consequently, all efforts should be made to monitor these areas closely on a regular basis.

Eastern Region. Low numbers of solitarious adults persisted in a few places in Rajasthan, **India** during November. Limited breeding occurred in one area that was flooded in August. No significant developments are expected during the forecast period in the region.

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

No. 338

DESERT LOCUST BULLETIN

Weather & Ecological Conditions in November 2006

No significant rainfall occurred during November in the Western Region and vegetation remained green only in parts of Mauritania, Western Sahara, Algeria and Niger. Sporadic rains fell along parts of the Red Sea coast and breeding conditions improved. Vegetation remained green along both sides of the Indo-Pakistan border from August flooding.

In the **Western Region**, no significant rain was reported or is thought to have occurred in the Desert Locust breeding areas in the Sahel in West Africa during November. Nevertheless, vegetation remained green in northwest Mauritania (Inchiri, Dakhlet Nouadhibou, southwest Adrar) but was drying out further south in Trarza (Aouker, Aguilal Faye). In Mali, vegetation was drying out or already dry in most places except for one area about 150 km northeast of Tombouctou towards Ti-n-kar. Vegetation remained mostly green on the Tamesna Plains in Niger but was starting to dry out in a few places by the end of the month. Vegetation was dry south of 17N and Tassara. In Northwest Africa, light rain fell at times in parts of central Algeria between Tamanrasset and In Salah and in southern Tunisia. Light to moderate rains fell on 5-6 November in northwest and central Libya in the Al Hamada Al Hamra area and between Sabha and Mizda, causing some wadis to flood. There were also reports of some wadis flooded in the southwest near Ghat. Green vegetation was present in the southern part of Western Sahara between the Mauritanian border and Awssard but, by the end of the month, there were the first signs that some vegetation was starting to dry out. Vegetation was dry further north in Western Sahara and in western Algeria. Elsewhere in Algeria, vegetation was green near Adrar and Illizi, and in the south and southeast between the Mali border and Tamanrasset.

In the **Central Region**, rain fell sporadically during November in winter breeding areas along the Red Sea coastal plains. Good rains and flooding occurred on the coast of southeastern Egypt between Abu Ramad and the Sudanese border on 1-4 November. Rains also fell along parts of coast of Sudan (between Suakin and Mohamed Qol), Eritrea (between Karora and Mehimet (76 mm on 22-23 November), and near Shieb), Saudi Arabia (near Jizan) and Yemen. Vegetation was already green from October rainfall in parts of the central and northern coast of Eritrea (from Shieb to the western Akbanazouf Plains, near Mersa Cuba and Mehimet) and on the central Tihama coast in Yemen but was drier near the Yemen / Saudi Arabia border. Vegetation started to become green along the central coast of Sudan and in some places to the west of the Red Sea Hills near Wadi Diib, and on the Gulf of Aden coastal plains in southern Yemen during November.

In the **Eastern Region**, no significant rain fell during November. Nevertheless, ecological conditions remained favourable for breeding in parts of Barmer and Jaisalmer districts in India and in Tharparkar, Pakistan where unusually heavy rains and flooding occurred in August. Light showers fell in the northern interior of the spring breeding areas in Baluchistan, Pakistan at Dalbandin and Nushki. Lighter rain fell in the central interior at Panjgur.

Area Treated

Mauritania	894 ha (1-30 November)
Morocco	600 ha (16-28 November)
Niger	1,706 ha (23-30 November)

Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• **Situation**

During November, small hopper bands continued to develop in the northwest province of Inchiri where late instar bands were present in two areas southwest of Bennichab (1932N/1512W). Similar infestations were found in two additional areas, one near the Banc d'Arguin National Park and the other about 150 km towards the north near the Western Sahara border. The hopper bands were small, varying from 5 to 4,000 m^2 in size, at densities of 5-120 hoppers/m^2. Low numbers of solitarious hoppers and mature adults were also present in Inchiri. A few of the adults were copulating. Locust populations declined west and northwest of the Tagant Plateau in the Aftout Faye region (ca. 18N/14W) of northern Trarza, extending to nearly Chinguetti (2027N/1221W) in southwest Adrar.

Mainly isolated and scattered solitarious and *transiens* hoppers and adults persisted except at one location near Lebheir (1936N/1235W) where hoppers and fledglings at densities of 2 locusts/m^2 were present mixed with adults. The situation improved during the second half of November as locust numbers continued to decline in all areas. Ground control teams treated 894 ha on 1-30 November.

• **Forecast**

Low numbers of locusts will persist in the northwest (Inchiri, Dakhlet Nouadhibou, Trarza and southwest Adrar) and continue to breed on a limited basis in a few places. Consequently, some hatching may be expected from mid December onwards. If good rains fall, breeding is likely to be on a somewhat larger scale and would cause locust numbers to increase more. During periods of warm southerly winds, some adults could move further north to Tiris-Zemmour and eventually breed in any areas that receive rainfall. In any case, cool temperatures will delay egg development and locust maturation in the northwest and north.

Mali

• **Situation**

During November, a few immature solitarious and *transiens* adults were seen during surveys carried out to the west of Tombouctou (1649N/0259W) as well as northeast of Tombouctou towards Ti-n-kar (1926N/0022W). In the latter area, part of a 200 ha immature swarm was reported on 19 November at El Blod (1832N/0210W) with an estimated density of 30 adults/m^2. Nearby, fourth and fifth instar *transiens* hoppers formed small groups at densities of 15-25 hoppers/m^2 at two locations during the last week of the month. Elsewhere, no locusts were seen during surveys in the west and centre between Kayes (1426N/1128W) and Tombouctou. No surveys could be undertaken in the Timetrine, Tilemsi Valley, Adrar des Iforas and Tamesna.

• **Forecast**

Scattered hoppers and adults are almost certainly present and breeding on a small scale in parts of Timetrine, Tilemsi Valley, Adrar des Iforas and Tamesna. Low numbers of locusts are expected to persist during the forecast period in any areas that remain green in the northeast.

Niger

• **Situation**

During November, small-scale breeding continued over a large portion of Tamesna north of 17N where mainly low numbers of solitarious hoppers of all instars were present. Late instar solitarious and *transiens* hoppers and immature adults formed small groups at about 30 places between In Abangharit (1754N/0559E) and Tassara (1650N/0550E). By the last week of the month, hopper group densities increased to 50 hoppers/m^2. Ground control teams treated 1,706 ha on 23-30 November.

South of Tamesna, scattered immature and mature solitarious adults were seen between Tassara and the Mali border.

• **Forecast**

Unless rainfall occurs, breeding will decline in the Tamesna as vegetation dries out. Consequently, hoppers and adults are expected to concentrate in the few areas that remain green where they could form a few small groups.

Chad

• **Situation**

A late report indicated that small-scale breeding occurred near Fada (1714N/2132E) in October where low numbers of mature solitarious adults and third to sixth instar hoppers were present at a few places. Isolated adults were also seen about 100 km to south near Kalait (1550N/2054E) as well as near Arada (1501N/2040E) and in parts of northern Batha.

No reports were received during November.

• **Forecast**

No significant developments are likely.

Senegal

• **Situation**

No locusts were reported during the first two decades in November.

• **Forecast**

No significant developments are likely.

Benin, Burkina Faso, Cameroon, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea Bissau, Guinea, Liberia, Nigeria, Sierra Leone and Togo

• **Forecast**

No significant developments are likely.

Algeria

• **Situation**

No locusts were seen during surveys carried out in November in the west near Tindouf (2741N/0811W), in the central Sahara near Adrar (2753N/0017W) and In Salah (2712N/0229E), in the southeast near Illizi (2630N/0825E) and Djanet (2434N/0930E), and in the southern Sahara near Tamanrasset (2250N/0528E) and along the borders of Mali and Niger.

• **Forecast**

Low numbers of adults could appear in the west and in the south during periods of warm southerly winds.

Morocco

• **Situation**

In Western Sahara, breeding occurred during November in one limited area of about 35 km by 25 km in the Adrar Souttouf region southwest of Awssard (2240N/1410W). Low numbers of first to third instar hoppers were first seen on 5 November. At mid-month, hoppers of all instars were forming up to 50 small groups and bands, each about 400 m^2 in size and at densities of 30-40 hoppers/m^2, within areas of less than 50 ha. This suggests that egg laying occurred during the second half of September and early October while hatching started in the second week of October. Isolated solitarious and *transiens* immature and mature adults were reported nearby. Ground control operations treated 600 ha on 16-28 November.

Further north in Western Sahara, isolated solitarious adults were maturing at a few places near Bir Anzarane (2353N/1431W) and Guelta Zemmur (2508N/1223W) in early November.

• **Forecast**

Unless rainfall occurs, small-scale breeding should end in Western Sahara. If temperatures remain warm, fledging will commence in early December; otherwise, it could be delayed by several weeks due to low temperatures. Consequently, there is a risk that adult numbers will increase and a few small groups and swarmlets could form during the forecast period. If so, these are likely to remain in Western Sahara except during periods of warm southerly winds when they could move further north towards the Draa Valley.

Libyan Arab Jamahiriya

• **Situation**

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

• **Forecast**

Scattered adults may be present in parts of the Al Hamada Al Hamra and near Ghat where small-scale breeding could occur in areas of recent rainfall and cause locust numbers to increase slightly.

Tunisia

• **Situation**

No locusts were reported during November.

• **Forecast**

No significant developments are likely.

CENTRAL REGION

Sudan

• **Situation**

During the first week of November, isolated mature solitarious adults were seen at four places on the Red Sea coast between Port Sudan (1938N/3707E) and south of Suakin (1908N/3717E). Small-scale laying and hatching is thought to have occurred in some places including the Tokar Delta. At the end of the month, similar populations were seen in crops at one place near Tomala (2002N/3551E) along Wadi Oko in the northeast. Some of the adults were reported to be copulating. No locusts were seen during surveys on the coast between Suakin and the Eritrean border.

Surveys were also carried out in the summer breeding areas north of Khartoum, but no locusts were seen in the Baiyuda Desert or east of Shendi (1641N/3322E) along Wadi El Hawad.

• **Forecast**

Locust numbers will increase slightly as small-scale breeding continues along the Red Sea coastal plains and in Wadi Oko/Diib. Hatching is likely to continue during December, and fledging could start by the end of the year.

Eritrea

• **Situation**

Isolated mature solitarious adults were present and laying eggs at a few places on the Red Sea coastal plains on the western side of the Akbanazouf Plain (1555N/3910E), near the sea at Mersa Cuba (1616N/3911E), and between Mehimet (1723N/3833E) and the Sudanese border during the first week of November.

• **Forecast**

Small-scale breeding will continue in areas of recent rainfall on the Red Sea coastal plains between Massawa and the Sudanese border. Hatching will take place early in the forecast period and the resulting hoppers are expected start fledging by late December or early January. Consequently, locust numbers will increase, and all efforts should be made to monitor the situation closely.

Ethiopia

• **Situation**

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

• **Forecast**

No significant developments are likely.

Djibouti

• **Situation**

No locusts were seen during surveys carried out on 23-26 November on the coast near the capital as well as along the Gulf of Tadjourah or in inland areas near Tadjourah (1147N/4253E) and Obock (1157N/4317E).

• **Forecast**

No significant developments are likely.

Somalia

• **Situation**

No locusts were reported during November.

• **Forecast**

No significant developments are likely.

Egypt

• **Situation**

No locusts were seen during surveys carried out during November in the northwest near Salum (3131N/2509E) and Siwa (2912N/2531E) and along the shore of Lake Nasser from Abu Simbel (2219N/3138E) to Garf Husein (2317N/3252E). At the end of the month, no locusts were seen during surveys in the Red Sea Hills between Marsa Alam (2504N/3454E) and Shalatyn (2308N/3535E).

• **Forecast**

Low numbers of solitarious adults are likely to be present and will breed in areas of recent rainfall on the Red Sea coastal plains between Shalatyn and the Sudanese border.

Saudi Arabia

• **Situation**

No locusts were reported from the Mecca, Al Jawf and Asir regions during November.

• **Forecast**

Scattered adults may appear along parts of the Red Sea coastal plains between Rabigh and Jizan where they could breed on a small-scale in areas of recent rainfall, causing locust numbers to increase slightly during the forecast period. All efforts should be made to monitor the situation closely.

Yemen

• **Situation**

During November, isolated solitarious immature and mature adults were present at a few places on the Red Sea coast between Suq Abs (1600N/4312E) and Al Zuhrah (1541N/4300E), and on the central plains between Bajil (1458N/4314E) and Bayt Al Faqih (1430N/4317E). No locusts were seen during surveys carried out along the Gulf of Aden coast.

• **Forecast**

Low numbers of locusts are expected to persist on the Red Sea coastal plains and breed on a small-scale. Limited breeding could also occur in areas of recent rainfall on the Gulf of Aden coastal plains. Consequently, locust numbers will increase slightly during the forecast period. All efforts should be made to monitor the situation closely.

Oman

• **Situation**

No locusts were seen during surveys carried out on the northern Batinah coast from Sohar (2421N/5644E) to the Musandam Peninsula during November.

• **Forecast**

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Lebanon, Palestine, Qatar, Syria, Tanzania, Turkey, UAE and Uganda

• **Forecast**

No significant developments are likely.

EASTERN REGION

Iran

• **Situation**

No reports were received during November.

• **Forecast**

No significant developments are likely.

Pakistan

• **Situation**

No locusts were reported during November.

• **Forecast**

No significant developments are likely.

India

• **Situation**

A late report indicated that scattered immature and mature adults were present in Jaisalmer District west of Sam (2649N/7030E) during October and there was one report of laying.

During November, low numbers of solitarious adults persisted at eight places west of Sam and laying was reported at one of these locations on the 9th. Adults were also seen at two places near Phalodi (2706N/7222E). No locusts were seen elsewhere in Rajasthan during surveys.

• **Forecast**

Isolated hoppers are likely to be present near Jaisalmer and will fledge by the end of the forecast period. No significant developments are likely.

Afghanistan

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Announcements

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- **DLCC.** Final report of 38th session held in Rome (September 2006)
- **Mauritania forecast.** Six month forecast for Northwest Africa to May 2007 (issued 13 November)
- **Mauritania photos.** Pictures of infestations and ground operations (October-November 2006)
- **FAO Technical series No. 33.** Environmental impact of Barrier Treatments against Locusts

Links to the above information can be found in the new *Latest Additions* section on Locust Watch.

2006-07 events. The following meetings are scheduled:

- **EMPRES/WR.** 5th Liaison Officer Meeting, Nouakchott (Mauritania), 4-7 December
- **CLCPRO.** 3rd Executive Committee, Nouakchott (Mauritania), 8-9 December
- **World Bank.** Mid-Term review of the World Bank Africa Emergency Locust Project, Nouakchott (Mauritania), 11-15 December
- **IFAD**. Kick-off meeting of IFAD research project, Nouakchott (Mauritania), 16-17 December
- **EMPRES/WR.** 2nd Session of the Steering Committee, Bamako (Mali), 22-24 January
- **Alternative control**. Workshop on alternatives to conventional locust control methods, Dakar (Senegal), 12-15 February

Morocco accident. It is with deep regret that we announce the deaths of two National Locust Control Centre staff, Mr. Riyahi Hamdia (driver) and Mr. Omar Al Hilali (survey officer), as a result of an accident near Guelmim, Morocco on 7 October. We would like to express our sincere condolences to their families and government.

Glossary of terms

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

NON-GREGARIOUS ADULTS AND HOPPERS

ISOLATED (FEW)

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

SCATTERED (SOME, LOW NUMBERS)

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

GROUP

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

ADULT SWARM AND HOPPER BAND SIZES

VERY SMALL

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

SMALL

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

MEDIUM

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

LARGE

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

VERY LARGE

- swarm: 500+ km^2 • band: 50+ ha

RAINFALL

LIGHT

- 1 - 20 mm of rainfall.

MODERATE

- 21 - 50 mm of rainfall.

HEAVY

- more than 50 mm of rainfall.

OTHER REPORTING TERMS

BREEDING

- the process of reproduction from copulation to fledging.

SUMMER RAINS AND BREEDING

- July - September/October

WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July

DECLINE

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

OUTBREAK

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

UPSURGE

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

PLAGUE

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

RECESSION

- period without widespread and heavy infestations by swarms.

REMISSION

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

WARNING LEVELS

GREEN

- Calm. No threat to crops. Maintain regular surveys and monitoring.

YELLOW

- Caution. Potential threat to crops. Increased vigilance is required; control operations may be needed.

RED

- Danger. Significant threat to crops. Intensive survey and control operations must be undertaken.

REGIONS

WESTERN

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

CENTRAL

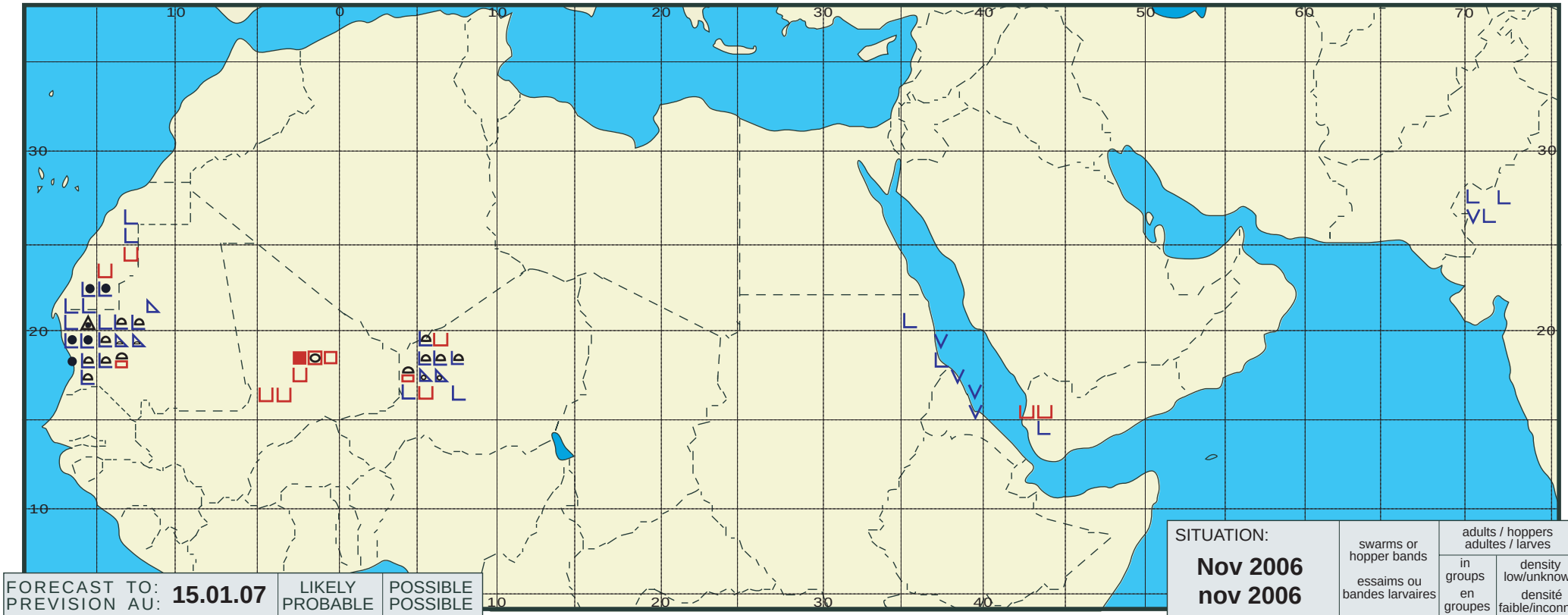
- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

EASTERN

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

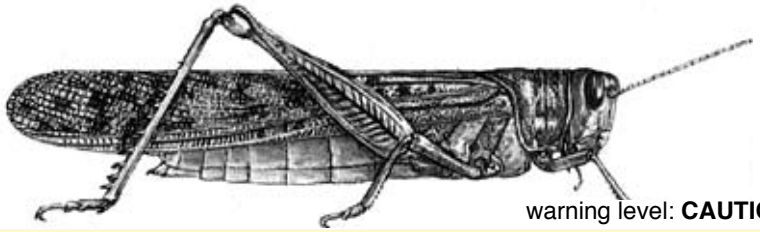
Desert Locust Summary
Criquet pèlerin - Situation résumée

338



FORECAST TO: PREVISION AU: **15.01.07**	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favourables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: **Nov 2006** **nov 2006**	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	▼	▽	V
hoppers larves	●	○	◡
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)	◘	◙	⊎



warning level: **CAUTION (Central Region)**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations **No. 339**

(3 January 2007)

General Situation during December 2006 Forecast until mid-February 2007

A small, localized outbreak developed in early December on the Red Sea coast in Eritrea where hoppers and adults were forming small groups. Control operations were immediately mounted and more than 11,000 ha were treated. Only scattered adults were present in other winter breeding areas on the coast of Sudan, Egypt, Saudi Arabia, Yemen and northern Somalia. Locust numbers will increase along both sides of the Red Sea during the forecast period, especially in Eritrea where intensive survey and control efforts should continue. The situation improved in northwest Mauritania and Western Sahara where limited control operations were undertaken. Control was also carried out in northern Mali and Niger. Locust populations are expected to decline further in the Western Region where only scattered adults are likely to persist during the forecast period.

Western Region. There was a steady decline in locust populations during December in previously infested areas in northwest **Mauritania** and **Western Sahara**. Ground control operations were conducted against small hopper bands, treating 20 ha in Mauritania and 770 ha in Western Sahara. Control teams also treated about 1,000 ha of locust concentrations in one area of northern **Mali**. In **Niger**, solitarious and *transiens* hoppers and adults formed small groups in Tamesna where ground control teams treated more than 1,800 ha. As vegetation is drying out and there was no significant rain during December, another generation of breeding is unlikely to occur and, instead, only low numbers of adults are expected to persist in the above-mentioned areas. Some of these adults could move north towards the Draa Valley in **Morocco**, to northern Mauritania and to southern **Algeria** during periods of warm southerly winds.

Central Region. As a result of good rains and runoff, undetected breeding occurred in November and an outbreak developed locally on the Red Sea coastal plains of **Eritrea** near Massawa in early December. Although ground control teams treated solitarious and *transiens* hoppers that were forming small groups, there is a risk that outbreaks may develop elsewhere along the coast where hopper bands and perhaps a few small swarms could form. A second generation of breeding is likely to occur during January and February, causing locust numbers to increase further that may pose a threat to neighboring countries. Scattered adults were present along the Red Sea coastal plains in **Sudan**, southeast **Egypt**, **Saudi Arabia** and **Yemen** as well as in northern **Somalia**. Small-scale breeding will occur in these areas during the forecast period.

Eastern Region. Low numbers of solitarious adults persisted in a few places in Rajasthan, **India** during December. Good rains fell in the spring breeding areas of Baluchistan in southeast **Iran** and western **Pakistan** where small-scale breeding could start by the end of the forecast period.

The FAO Desert Bulletin is issued monthly, supplemented by Updates during periods of increased Desert Locust activity, and is distributed by e-mail, FAO pouch and airmail by the Locusts and Other Migratory Pests Group, AGP Division, FAO, 00153 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/ag/locusts

No. 339

DESERT LOCUST BULLETIN

Weather & Ecological Conditions in December 2006

Vegetation started to dry out in Northwest Africa but continued to improve in winter breeding areas along both sides of the Red Sea where sporadic rains fell during December. Good rains fell in the spring breeding areas along the Iran/Pakistan border.

In the **Western Region**, very little rainfall occurred in the winter and spring breeding areas in Northwest Africa during December. Light rain fell in northeast Morocco near Bouarfa and on the Atlantic coast near Tan-tan. Vegetation was green on the southern side of the Atlas Mountains in Morocco along the Algerian border south of Errachidia and Zagora and in Draa Valley south of Tata. In Western Sahara, ecological conditions were generally favourable in the Awssard region although some vegetation was drying out. No significant rain fell in Mauritania. Consequently, vegetation was drying out in most of the northwest except for a few localized areas where it was still green enough to allow limited locust survival. Vegetation was also drying out in northern Mali and Niger due to a lack of rainfall.

In the **Central Region**, light to moderate showers fell during December in the winter breeding areas along both sides of the Red Sea. Most days were cloudy on the northern and central Red Sea coastal plains Eritrea and light to moderate rain fell at times; for example, Massawa reported 40 mm on 6 December. Rain also fell in the highlands causing runoff to occur in most of the wadis on the coast. Consequently, much of the coastal plains contained large expanses of green vegetation, mainly near Shelshela, Shieb and Mehimet, and conditions were favourable for breeding. On the eastern side of the Red Sea, light to moderate rains fell at times along parts of the coast from Jizan, Saudi Arabia and to the Gulf of Aden in Yemen. Vegetation was becoming green or was already green along most of the Tihama coast in Yemen but it was drier along the Gulf of Aden. Good rains fell in northern Oman on 2-3 December, extending from the Wahiba Sands and Sharqiya to the Batinah coast. Good rains also fell at times over the Persian Gulf affecting mainly Qatar and UAE but these are not expected to have an impact on Desert Locust. In northern Somalia, breeding conditions improved along the northwestern coastal plains due to good rains in late November and early December. Light rain also fell on the coast of Djibouti during two days in December.

In the **Eastern Region**, good rains fell in spring breeding areas along the coast and in the interior of Baluchistan in southeastern Iran and western Pakistan on 1-3 December. The rains extended from Bander-e Lengheh to Zahedan in Iran and from Jiwani to Karachi and Quetta in Pakistan. The heaviest showers were concentrated in Pakistan near the coast (Turbat 73 mm, Lasbela 31 mm), in the central interior (Panjgur 75 mm, Kharan 50 mm) and in the north (Nushki 48 mm, Dalbandin 35 mm). Breeding conditions will improve in these areas despite low temperatures during the winter.

Area Treated

Eritrea	11,418 ha (9-27 December)
Mali	1,000 ha (November - early December)
Mauritania	20 ha (1-10 December)
Morocco	280 ha (29-30 November)
	770 ha (1-18 December)
Niger	1,838 ha (1-16 December)

Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• **Situation**

During December, there was a steady decline in locust numbers in the northwest. Nevertheless, some small infestations persisted. In Inchiri, solitarious and *transiens* hoppers of all instars and a few small groups, at densities up to 25 hoppers/m^2, were present in a few places. During the first week, mechanical control operations were undertaken near the Banc d'Arguin National Park against 46 very small second to fifth instar hopper patches and bands. The infestations varied in size from a few square metres to less than 1 ha with densities of up to 60-220 hoppers/m^2. In all, about 20 ha were treated. In southwest Adrar, scattered immature and mature adults were present south of Oujeft (2003N/1301W) and Chinguetti (2027N/1221W). By the end of the month, only low numbers of scattered solitarious hoppers and adults

remained in the above areas.

• **Forecast**

Unless rainfall occurs, small-scale breeding should end in the northwest and only scattered adults are likely to persist during the forecast period. During periods of warm southerly winds, some adults could move further north to Tiris-Zemmour and eventually breed if rainfall occurs.

Mali

• **Situation**

During late November and early December, a few small locust concentrations persisted north of Tombouctou (1649N/0259W) at densities varying from a few individuals per site to 15 locusts/m^2. Control operations were carried out against the denser infestations and teams treated 1,000 ha. By mid-December, locust numbers had declined to less than 100 solitarious adults/ha. No surveys were carried out and no locusts were reported during the third decade.

• **Forecast**

Low numbers of locusts are likely to be present in parts of Timetrine, Tilemsi Valley, Adrar des Iforas and Tamesna and should persist during the forecast period in any areas that remain green.

Niger

• **Situation**

During December, solitarious and *transiens* hoppers and maturing adults persisted in the central Tamesna, primarily west of In Abangharit (1754N/0559E) in the Azaouak Valley. As vegetation was drying out, the hoppers and adults formed small groups at densities of 5-50 hoppers/ m^2 and 25-2,000 adults/ha. Ground control teams treated 1,838 ha on 1-16 December.

• **Forecast**

As vegetation continues to dry out, any locusts that escape control operations are expected to concentrate in the few areas that remain green and form a few small groups. These are likely to remain in the Tamesna except during periods of warm southerly and southwesterly winds when they could move east to the Air Mountains or north towards central Algeria.

Chad

• **Situation**

No reports were received during December.

• **Forecast**

No significant developments are likely.

Senegal

• **Situation**

No reports were received during December.

• **Forecast**

No significant developments are likely.

Benin, Burkina Faso, Cameroon, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea Bissau, Guinea, Liberia, Nigeria, Sierra Leone and Togo

• **Forecast**

No significant developments are likely.

Algeria

• **Situation**

No reports were received during December.

• **Forecast**

Low numbers of adults could appear in the west and in the south during periods of warm southerly winds.

Morocco

• **Situation**

During the first decade of December, an individual solitarious mature adult was seen south of Tata (2944N/0758W) in Draa Valley along the border with Algeria. In Western Sahara, small bands of *transiens* and gregarious fifth instar hoppers persisted during the month in the Adrar Souttouf region southwest of Awssard (2240N/1410W) but at lower densities (an average of 15 hoppers/m^2) than in November. Some hoppers had fledged and immature adults were present. The infestations varied from 30 to 100 ha in size. Ground control teams treated 770 ha on 1-18 December. During the last decade of the month, no locusts were seen during surveys in the Draa Valley south of Tata and near Zag (2800N/0920W), or in Western Sahara near Laayoune (2708N/1313W) and Awssard.

• **Forecast**

Unless rainfall occurs, small-scale breeding should end in Western Sahara and only scattered adults are likely to persist in parts of the Adrar Souttouf during the forecast period. During periods of warm southerly winds, some adults could move further north towards the Draa Valley in Morocco.

Libyan Arab Jamahiriya

• **Situation**

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

• **Forecast**

Scattered adults may be present in parts of the Al Hamada Al Hamra and near Ghat where small-scale breeding could occur in areas of previous rainfall.

Tunisia

• **Situation**

No locusts were reported during December.

• **Forecast**

No significant developments are likely.

CENTRAL REGION

Sudan

• **Situation**

During December, scattered immature and mature adults persisted on the Red Sea coastal plains in the Tokar Delta at densities of 50-200 adults/ha. Small-scale breeding occurred and isolated third and fourth instar hoppers were present in one area of Tokar in the first week of the month. Isolated solitarious mature adults were also seen at one place near Suakin (1908N/3717E) at mid-month. No locusts were seen during surveys carried on the northern coast or in Wadi Diib. Elsewhere, scattered maturing adults were seen west of the Red Sea Hills at two places along the Atbara River on 1 December near 1721N/3430E.

• **Forecast**

Locust numbers will increase slightly as small-scale breeding continues along the Red Sea coastal plains and in Wadi Oko/Diib. Fledgling should commence by the beginning of the forecast period.

Eritrea

• **Situation**

A local outbreak developed from undetected laying and hatching that occurred during the first half of November on the Red Sea coast between Shelshela (1553N/3906E) and Shieb (1551N/3903E). By 8 December, solitarious and *transiens* first to fifth instar hoppers and maturing adults were present within an area of about 20 km by 25 km. Some of the hoppers and fledglings were reported to be forming small groups and adults were seen laying eggs. Ground control operations started on the 9th and teams treated 11,418 ha up to 27 December.

Further north on the coast near the Sudanese border, small-scale breeding was in progress between Meleet (1730N/3845E) and Mersa Teklay (1734N/3851E) where solitarious hoppers of all instars and immature and mature adults were present. Adults were copulating and laying eggs and, at one location, hoppers were fledging and adults were starting to form small groups. Between Shelshela and Meleet, scattered adults were present on the coastal plains, mainly near Mersa Gulbub (1633N/3908E) where adults were laying eggs and solitarious first to third instar hoppers were present.

On the southern coast, isolated mature solitarious adults were seen during the last week about 50 km south of Massawa (1537N/3928E), near Tio (1441N/4057E) and further inland near the Ethiopian border.

• **Forecast**

A second generation of breeding will occur on the Red Sea coastal plains between Massawa and the Sudanese border, causing locusts to increase in number, gregarize and form small groups, bands and perhaps a few swarmlets. Small-scale breeding is also expected to occur on the southern coastal plains near Tio with hatching in January. All efforts should be made to monitor the situation closely and undertake the necessary control operations.

Ethiopia

• **Situation**

No reports were received during December.

• **Forecast**

No significant developments are likely.

Djibouti

• **Situation**

No locusts were reported during December.

• **Forecast**

No significant developments are likely.

Somalia

• **Situation**

Isolated mature adults were seen at three places along the northwestern coastal plains west of Berbera (1028N/4502E) during surveys carried out on 11-16 December. No locusts were seen elsewhere along the escarpment.

• **Forecast**

Low numbers of locusts will persist along the northwest coast and perhaps on the escarpment. Small-scale breeding is expected to occur in areas of recent rainfall.

Egypt

• **Situation**

During December, isolated mature adults were seen on the Red Sea coast between Halaib (2212N/3635E) and the Sudanese border on the 2nd. No locusts were seen in the northwest near Salum (3131N/2509E) and Siwa (2912N/2531E), in the southern part of the Western Desert near Sh. Oweinat (2219N/2845E), along the Lake Nasser shoreline, and near the Red Sea coast south of Marsa Alam (2504N/3454E).

• **Forecast**

Small-scale breeding is expected to occur locally on the Red Sea coastal plains between Abu Ramad and the Sudanese border.

Saudi Arabia

• **Situation**

During December, low numbers of solitarious locusts were scattered along the Red Sea coastal plains. North of Jeddah, solitarious adults were reported about 50 km north of Masturah (2309N/3851E) at four places on the coast mixed with isolated second to fourth instar hoppers. Isolated solitarious fourth instar hoppers and adults were seen near Mecca at Wadi Al-Nuaman (2120N/4004E), and adults were present further south near Qunfidah (1909N/4107E) and Jizan (1656N/4233E).

• **Forecast**

Scattered adults will persist along parts of the Red Sea coastal plains between Yenbo and Jizan where small-scale breeding will occur in areas of recent rainfall. Consequently, locust numbers will increase slightly during the forecast period. All efforts should be made to monitor the situation closely.

Yemen

• **Situation**

In mid-December, scattered immature solitarious adults persisted at a few places on the northern Red Sea coast between Suq Abs (1600N/4312E) and Al Zuhrah (1541N/4300E) and on the central coast near Bayt Al Faqih (1430N/4317E). No locusts were seen elsewhere on the Tihama plains or along the Gulf of Aden coast.

• **Forecast**

Low numbers of locusts will persist on the Red Sea coastal plains and breed on a small-scale. Limited breeding could also occur in areas of recent rainfall on the Gulf of Aden coastal plains. Consequently, locust numbers will increase slightly during the forecast period. All efforts should be made to monitor the situation closely.

Oman

• **Situation**

No locusts were seen during surveys carried out in coastal and interior areas of the north in December.

• **Forecast**

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Lebanon, Palestine, Qatar, Syria, Tanzania, Turkey, UAE and Uganda

• **Forecast**

No significant developments are likely.

EASTERN REGION

Iran

• **Situation**

No locusts were seen during surveys carried out in December on the southern coast near Bander-e Lengheh (2634N/5452E) and Jask (2540N/5746E).

• **Forecast**

Low numbers of adults could appear and small-scale breeding may commence by the end of the forecast period in areas of recent rainfall along the southeastern coast between Bandar Abbas and Gwatar.

Pakistan

• **Situation**

No locusts were reported during the first half of December.

• **Forecast**

Low numbers of adults could appear and small-scale breeding may commence by the end of the forecast period in areas of recent rainfall along the coast and perhaps in the interior of Baluchistan.

India

• **Situation**

During the first week of December, scattered mature adults were present at a few locations in Rajasthan between Jaisalmer (2652N/7055E) and the Pakistani border. Thereafter, no locusts were seen.

• **Forecast**

No significant developments are likely.

Afghanistan

• **Situation**

No reports received.

• **Forecast**

No significant developments are likely.

Announcements

Locust reporting. During recession periods, countries should report at least once/month and send RAMSES data with a brief interpretation. During locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent twice/week and affected countries are encouraged to prepare decadal bulletins summarizing the situation.

All information should be sent by e-mail to the FAO/ECLO Desert Locust Information Service (eclo@fao.org). Information received by the end of the month will be included in the FAO Desert Locust 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.

eLocust2. FAO has developed a new version of eLocust in collaboration with affected countries and the French Space Agency (CNES/Novacom) that allows field officers to enter survey and control data directly in the field and transmit it in real time via satellite to their national locust centre. Data can also be downloaded to a PC and visualized on GoogleEarth. The software is in both English and French. FAO DLIS has distributed units to nearly all of the frontline countries. Photos and more information are available at: www.fao.org/ag/locusts/en/activ/DLIS/index.html

Desert Locust warning levels. A colour-coded scheme has been established to indicate the seriousness of the current Desert Locust situation: green for *calm*, yellow for *caution* and red for *danger*. The scheme is applied to the Locust Watch web page and to the monthly bulletin's header. The levels indicate the perceived risk or threat of current Desert Locust infestations to crops and appropriate actions are suggested for each level. Your feedback on the usefulness of this scheme and any suggested improvements is welcome.

EMPRES/CRC website. Detailed information on EMPRES/CR and the FAO Central Region Commission as well as member country profiles can be found on the new EMPRES/CRC website at: www.crc-empres.org.

New information on Locust Watch. DLIS launched a new initiative in October called *Desert Locust e-info news* as a means of keeping everyone informed on a weekly basis of new information on the Locust Group's web page, Locust Watch (www.fao.org/ag/locusts). The latest additions are:

- **DLCC.** Final report of 38th session held in Rome (September 2006)
- **SWAC.** Final report of the 25th session held in Tehran, Iran (November 2006)
- **EMPRES/CR.** Final report of the 14th Liaison Officers meeting held in Muscat, Oman (November 2006)
- **Eritrea outbreak.** Pictures of infestations and ground operations (December 2006)
- **Niger photos.** Pictures of infestations and ground operations (November-December 2006)
- **FAO Technical series No. 33.** Environmental impact of Barrier Treatments against Locusts

Links to the above information can be found in the new *Latest Additions* section on Locust Watch.

2007 events. The following meetings are scheduled:

- **EMPRES/WR.** 2nd Session of the Steering Committee, Bamako (Mali), 22-24 January
- **Biopesticides**. Workshop on the future of biopesticides for Desert Locust management, Saly (Senegal), 12-15 February

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- very few present and no mutual reaction occurring;
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- the process of reproduction from copulation to fledging.

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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.

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REGIONS

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

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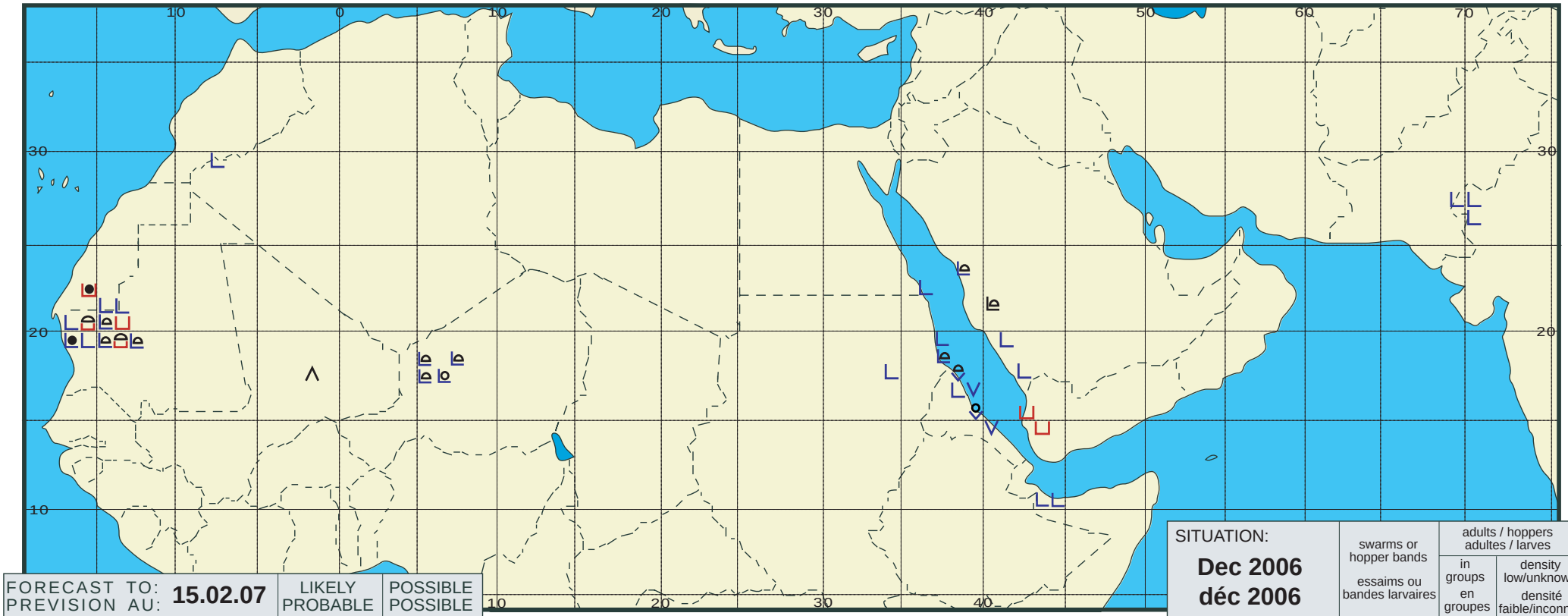
Desert Locust Summary
Criquet pèlerin - Situation résumée

339



FORECAST TO: PREVISION AU: **15.02.07**	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 2006 déc 2006**	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)	◘	◙	⊕