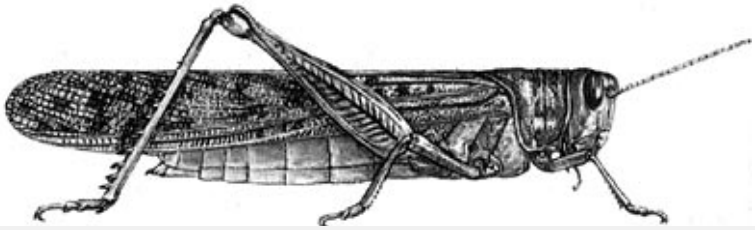

# DESERT LOCUST UPDATE

**FAO Emergency Centre for Locust Operations** *(20 Jan 2005)*

## General Situation as of 20 January 2005

**The Desert Locust situation is improving in Northwest Africa where control operations are still in progress but declining against immature swarms in northern Morocco and Algeria. In West Africa, control operations have ended in Mauritania. Small infestations of immature swarms are present in Gambia, Guinea Bissau, Guinea and southern Senegal. Although the situation is expected to continue to improve in the coming weeks, survey and control operations must be maintained and Sahelian countries should prepare themselves for any swarms that could arrive from Northwest Africa at the beginning of the summer. In winter breeding areas along the Red Sea, several copulating swarms were treated in northeast Sudan where small-scale breeding is likely to occur.**

There has been a significant decline in locust activity and, accordingly, aerial and ground control operations in **Morocco**. Consequently, only low numbers of small immature swarms persist in a few places in the northeast near Oujda, in the southeast near Bouarfa, in the Souss-Massa Valley and the High Atlas Mountains. The situation is calm in the Draa Valley and in **Western Sahara**. Control operations have also declined in **Algeria** where immature swarms persist in parts of the northern Sahara. Despite the improvement in the situation, control operations must be maintained to reduce the scale of spring breeding and the eventual swarm threat to Sahelian countries at the beginning of the summer.

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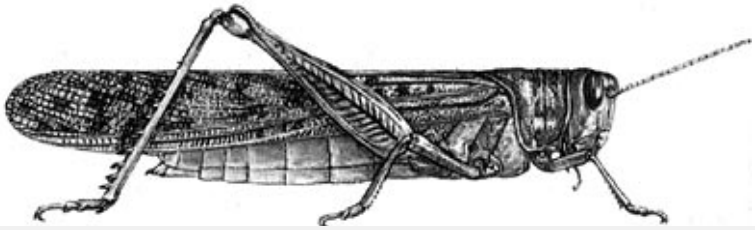
**DLIS:** www.fao.org/news/global/locusts/locuhome.htm

Control operations have ended in **Mauritania** and the situation is relatively calm. One immature swarm was seen on the 10th on the coast north of Nouakchott and scattered immature adults were present at a few places in the south near Kaedi. Light rain may have fallen at times along the Mauritanian/ Western Sahara border and in parts of northeastern Mauritania. In **Senegal**, several immature swarms were present in the southern province of Kolda near the Guinea Bissau border where aerial control operations were in progress during the first half of January. Immature swarms arrived in northwest **Guinea** (Koundara, Gaoual and Mali regions) on 13 January. In **Guinea Bissau**, several immature swarms persisted in different parts of the country, a swarm over flew the capital on the 7th and a few swarms were reported off the coast on the Bijagos islands. Control operations are being organized.

In the winter breeding areas along the Red Sea, several swarms were copulating during the first decade of January in Wadi Diib in northeast **Sudan** just south of the Egyptian border, and isolated adults were present in Tokar Delta. Although aerial control operations were carried out in Wadi Diib, hopper bands could form in the coming weeks from any breeding that occurs. In **Yemen**, scattered locusts were maturing on the Red Sea coast near the border with Saudi Arabia. No locusts were reported in **Saudi Arabia**.

The most up-to-date information on the situation and photos are available on the Internet (www.fao.org/news/global/locusts/locuhome.htm) as well as maps of the latest infestations (193.43.36.11/mapper).



# DESERT LOCUST UPDATE

**FAO Emergency Centre for Locust Operations**

*(22 Feb 2005)*

## General Situation as of 22 February 2005

**The Desert Locust situation continues to improve in Northwest Africa where control operations are in progress against immature swarms in Algeria and, to a much lesser extent, in Morocco. A swarm invasion of Northwest Africa is not expected this spring because breeding failed to occur in northern Mauritania during the winter. Limited control operations are in progress against immature swarms in Guinea and southern Senegal. Small-scale breeding is underway in northeast Sudan near the Egyptian border and control operations are treating small but numerous early instar hopper bands.**

Locust infestations continue to decline in Morocco and Algeria because of control operations. Small immature swarms persist in the Atlas Mountains in the northeastern **Morocco** near Oujda and Bouarfa, and south of the Atlas Mountains in the northern Sahara of **Algeria** between El Bayadh and El Oued. The unusually cold weather in both countries has delayed locust maturation. Aerial and ground control operations treated 265,700 ha in Algeria and 5,200 ha in Morocco during the first two decades of February.

No locusts were reported in **Mauritania** except for a few scattered immature adults in the southeast near the Malian border. Breeding conditions are generally unfavourable except for a few localized areas in the north and centre where light rains have fallen. Aerial control operations were carried out against a few small immature swarms in southwest **Senegal** along the border with Guinea Bissau. Some swarms crossed the border into northern **Guinea Bissau** during the first decade of February. Control operations are in progress against several immature swarms in northern and central **Guinea** where some crop damage was reported. A few swarms reached the coast near Conakry by the second week of February. No locusts were reported in Mali, Niger, Chad or Gambia.

In the winter breeding areas along the Red Sea, hatching continues in Wadi Diib in northeast **Sudan** just south of the Egyptian border. By 20 February, nearly 300 small first to third instar hopper bands were reported at six places and control operations had treated 630 ha. Hoppers are also present on the other side of the border in southeast **Egypt**.

The most up-to-date information on the situation and photos are available on the Internet (www.fao.org/news/global/locusts/locuhome.htm) as well as maps of the latest infestations (193.43.36.11/mapper).

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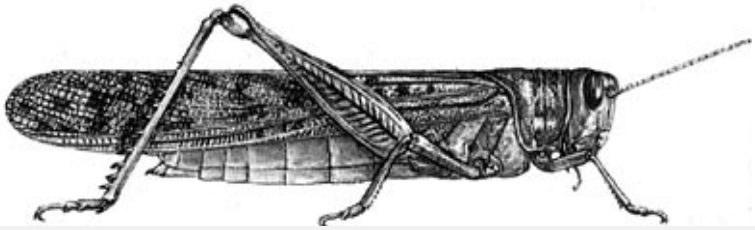

# DESERT LOCUST BULLETIN

**FAO Emergency Centre for Locust Operations** **No.316**

*(4 February 2005)*

## General Situation during January 2005
## Forecast until mid-March 2005

**The Desert Locust situation improved in the Western Region during January. Control operations have ended in Mauritania and declined against immature swarms in Morocco and Algeria where the weather was unusually cold. In West Africa, immature swarms were present in southern Senegal and Guinea Bissau, and appeared in Guinea. Small-scale breeding occurred on the Red Sea coast on both sides of the Egyptian and Sudanese border causing hopper bands to form. Although the situation is expected to continue to improve in the Western Region, survey and control operations must be maintained and Sahelian countries should prepare themselves for any swarms that could arrive from Northwest Africa at the beginning of the summer. The situation along the Red Sea coasts requires intensive monitoring in the coming weeks.**

**Western Region.** Although numerous immature swarms were present in and near the Atlas Mountains in **Morocco** and **Algeria** during January, the number of swarms declined because of control operations and unusually low temperatures. By the end of the month, relatively small infestations were struggling to survive in both countries. Only scattered locusts were present in **Mauritania** and **Mali**, and probably in **Niger** and **Libya**. The situation is less clear in **Tunisia**. So far this winter, breeding has not occurred in northern Mauritania due to a lack of rainfall. Consequently, the situation is very different compared to one year ago and a swarm invasion of Northwest Africa is not expected this spring. Despite the improvement in the situation, control operations must be maintained to reduce the scale of spring breeding in Northwest Africa and the eventual swarm threat to Sahelian countries at the beginning of the summer. In West Africa, immature swarms associated with the southern circuit migration moved from **Senegal** and **Guinea Bissau** into **Guinea**. These swarms are likely to move eventually to southwest Mali from March or April onwards.

**Central Region.** Several small swarms reached the winter breeding areas along the Red Sea coastal plains near the border of **Egypt** and **Sudan** and laid eggs that subsequently hatched, causing small hopper bands to form. Control operations were carried out in both countries. Elsewhere in the Red Sea Trench, insignificant numbers of solitarious adults were present on the southern coast of Sudan, on the central coast of **Saudi Arabia** where local breeding was in progress, along the border with Saudi Arabia and **Yemen**, and on the northwest coast in northern **Somalia**. As there is a possibility that some swarms could form by the end of the forecast period in northeast Sudan and southeast Egypt, the situation requires intensive monitoring and appropriate control measures should be taken.

**Eastern Region.** Although rains fell during January in the spring breeding areas in western **Pakistan**, no locusts were reported there or elsewhere in the Region.

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## Weather & Ecological Conditions in January 2005

**Unusually low temperatures and snowfall occurred in Northwest Africa during January. No significant rainfall was reported in the Region and breeding conditions were favourable in only a few places in northwest Mauritania. Conditions were favourable in the winter breeding areas along the Red Sea coast near the Egyptian/Sudanese border. Light rains fell in the spring breeding areas in western Pakistan where the habitat was slowly improving.**

In the **Western Region**, the weather was unusually cold in the spring breeding areas of Northwest Africa where maximum temperatures were generally between 8-24C and minimum temperatures fell to below zero in places. Snow was reported in the Atlas Mountains from Morocco to Tunisia, in the mountains of northwest Libya, along parts of the Mediterranean coast and in some areas of the northern Sahara. The low temperatures and the cold northerly winds that prevailed during January not only limited the movement of locust swarms within the region but also did not allow them to mature and may have caused some to die. Light rain fell at times in some places along the Atlantic coast in Morocco and near Laayoune, Western Sahara. Nevertheless, ecological conditions remained generally unfavourable in the spring breeding areas of Northwest Africa. In Mauritania, the south was dry. In the winter breeding areas, a few places were favourable in the northwest but unfavourable in the north due to a lack of rainfall. In northern Mali and Niger, mainly dry conditions persisted in most areas because of a lack of rainfall.

In the **Central Region**, light rainfall was reported in southern Egypt near Lake Nasser and on the Red Sea coastal plains and adjacent interior areas during the third week of January. Consequently, conditions were favourable for breeding, and extended into neighbouring areas of northeast Sudan, mainly along Wadi Diib. Conditions were also favourable in some places along the coastal plains south of Port Sudan and in the Tokar Delta but were generally unfavourable further south to Massawa, Eritrea. Green vegetation was present along the Red Sea coastal plains in Saudi Arabia between Yenbo and Qunfidah and breeding conditions were favourable between Rabigh and Qunfidah. They were less favourable for breeding along the Red Sea coast in Yemen. In northern Somalia, light to moderate rainfall occurred at times during January on the northwest coast where breeding conditions were favourable. In northern Oman, good rains fell at times during January.

In the **Eastern Region**, light rainfall occurred in the spring breeding areas along the coast and in the interior of Baluchistan, western Pakistan during the first half of January. Consequently, breeding conditions were slowly improving.

## Area Treated

About 300,000 ha were treated in January, bringing the total area treated since the beginning of the upsurge (October 2003) to 12.4 million ha.

| | Current month | Winter Campaign cumulative |
|---|---|---|
| Algeria | 287,716 ha (1-31 Jan) | 1,479,973 ha |
| Cape Verde | 80 ha (1-31 Jan) | 3,417 ha |
| Egypt | 1,941 ha (Jan) | |
| Guinea | 3,900 ha (3-31 Jan) | |
| Libya | 220 ha (1 Jan) | 65,514 ha |
| Morocco | 68,412 ha (1-31 Jan) | 1,990,406 ha |
| Senegal | 5,921 ha (1-31 Jan) | |
| Sudan | 1,320 ha (Jan) | |

*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**

The situation improved throughout the country during January. Scattered immature adults were present at the end of the first week on the coast south of Nouakchott. On the 10th, a very small high-density immature swarm was seen further north on the coast near the Banc d'Arguin National Park. During the remainder of the month, only scattered gregarious immature adults were present in the southwest near Kaedi (1612N/1332W). No locusts were seen during surveys in the northwest (Inchiri and Adrar) or north (Tiris-Zemmour).

• **Forecast**

*Small residual populations are likely to remain in a few places in the southwest. Scattered adults may be present in the northwest in Inchiri and near Zouerate where small-scale breeding could occur but may be difficult to detect.*

**Senegal**

• **Situation**

During January, several immature swarms were present in the southwest between Kolda (1256N/1455W) and Sedihou (1251N/1535W). At mid-month, a swarm was seen in the Kaolack region near the Gambian border. Some crop damage was reported. Aerial control operations treated 5,921 ha during the month.

• **Forecast**

*Low numbers of immature swarms are likely to persist in the south.*

**Mali**

• **Situation**

During January, low numbers of immature adults persisted in parts of the Adrar des Iforas, the Tilemsi Valley and in the Timetrine.

• **Forecast**

*Low numbers of adults will continue to persist in parts of the Adrar des Iforas, the Tilemsi Valley and in the Timetrine and start to mature once temperatures increase. Small-scale breeding could occur if rains fall. There is a low risk that a few immature swarms could arrive in the southwest from Guinea at the end of the forecast period.*

**Niger**

• **Situation**

No reports were received during January.

• **Forecast**

*Low numbers of adults are likely to be present in parts of the Air Mountains. As temperatures increase, the adults will mature and, if conditions are favourable, eventually lay eggs. Hatching could occur by the end of the forecast period and hoppers may form a few groups.*

**Chad**

• **Situation**

A few scattered adults were thought to be present in previously infested areas during the second half of December or first half of January.

• **Forecast**

*Low numbers of adults may be present in parts of the northeast.*

**Cape Verde Islands**

• **Situation**

During January, limited hatching and numerous small second to fourth instar hopper bands at densities of about 300 hoppers/$m^2$ were reported on Santo Antao island. No locusts were reported from the other islands. Control operations treated 80 ha during January.

• **Forecast**

*Any hopper bands that escape detection and control could form a few small swarms.*

**Gambia**

• **Situation**

No reports were received during January.

• **Forecast**

*There is a low risk that a few small immature swarms may be present and will persist in parts of the country.*

**Guinea Bissau**

• **Situation**

On 7 January, immature swarms were reported in the capital. By mid month, swarms were also reported off the coast in the Bijagos archipelago (ca. 1115N/1605W).

• **Forecast**

*Low numbers of immature swarms are likely to slowly drift towards the eastern part of the country and eventually continue into Guinea.*

**Guinea**

• **Situation**

On 3 January, several immature swarms arrived in the north from Senegal and Guinea Bissau, and dispersed between Koundara (1229N/1317W) and Gaoual (1145N/1311W) during the first week. A second invasion occurred on the 11th when swarms appeared in the north near Mali (1205N/1218W) and moved south to Lelouma (1129N/1241W). During the last week of the month, immature swarms were reported in the centre of the country near Labe (1119N/1217W) and Telimele (1054N/1302W), in the west near Boke (1056N/1418W) and in the east near Dinguiraye (1118N/1043W). Some damage was reported to vegetables and fruit trees. Ground control operations treated 3,900 ha during January.

• **Forecast**

*A few more swarms could eventually appear from Guinea Bissau. These and most of the swarms that are currently present are likely to slowly drift towards the eastern part of the country.*

**Benin, Burkina Faso, Cameroon, Cote d'Ivoire, Ghana, Liberia, Nigeria, Sierra Leone and Togo**

• **Forecast**

*No significant developments are likely.*

**Algeria**

• **Situation**

During January, immature swarms persisted along the Moroccan border between Bechar (3135N/0217W) and Naama (3318N/0200W), in the central Sahara between Adrar (2753N/0017W) and In Salah (2712N/0229E), and in the northeastern Sahara near Laghouat (3349N/0243E), Ghardaia (3225N/0337E), Ouargla (3157N/0520E) and Touggourt (3308N/0604E). Swarm numbers decreased gradually during the month as a result of control operations and unusually cold temperatures. No locusts were seen in the wilayas of Tindouf, Tamanrasset and Illizi. Ground and aerial control operations treated 287,716 ha during January.

• **Forecast**

*Moderate numbers of immature swarms will persist in the central and northern Sahara where they will remain immature until temperatures warm up. If temperatures increase and rainfall occurs by the end of the forecast period, adults will quickly mature and lay eggs.*

**Morocco**

• **Situation**

During January, immature swarms persisted in the Souss-Massa plains between Sidi Ifni (2924N/1012W) and Agadir (3030N/0940W), along the southeastern side of the Atlas Mountains between Errachidia (3154N/0425W) and Bouarfa (3232N/0159W), and in the northeast between Taza (3416N/0401W) and Oujda (3441N/0145W). There was a significant decline in the number of swarms throughout the month due to control operations and unusually cold temperatures. By the end of the month, only a few small swarms remained in the above areas. Aerial and ground control operations treated 68,412 ha during January.

• **Forecast**

*Low numbers of immature swarms will persist along the southern side of the Atlas Mountains as well as in some of the valleys and plateaux where they will remain immature until temperatures warm up. If temperatures increase and rainfall occurs by the end of the forecast period, adults will quickly mature and lay eggs.*

**Libyan Arab Jamahiriya**

• **Situation**

On 1 January, two immature swarms at densities of 20-50 adults/m$^2$ were seen in the southwest along the border with Algeria about 100 km northwest of Ghat (2459N/1011E). Control operations treated 220 ha. Thereafter, no locusts were reported elsewhere in the country.

• **Forecast**

*A few immature swarms may be present in the southwest near Ghat. If so and as temperatures increase, the adults will mature and, if conditions are favourable, lay eggs. Low numbers of adults may be present and persist in the southeast in the agricultural project at Kufra.*

**Tunisia**

• **Situation**

Although no reports were received during January, gregarious immature adults were present near the Algerian border.

• **Forecast**

*Low to moderate numbers of immature swarms are almost certainly present in parts of the centre and south near the Algerian border. If temperatures increase and rainfall occurs by the end of the forecast period, adults will quickly mature and lay eggs.*

**CENTRAL REGION**

**Sudan**

• **Situation**

During the first half of January, small swarms were seen copulating at seven locations in Wadi Diib in the northern Red Sea Hills just south of the Egyptian border. Solitarious adults were also present nearby. Although ground and aerial control operations were carried out, hatching occurred and first instar bands formed at densities up to 300 hoppers/m$^2$ during the second half of the month. Control operations treated 1,320 ha.

Throughout the month, solitarious maturing adults were present at low densities in some places along the coast between Port Sudan and the Tokar Delta.

• **Forecast**

*Hatching and small band formation will continue in Wadi Diib. By the end of the forecast period, small groups and perhaps a few small swarms could form. Scattered adults are likely to persist on the southern coastal plains and in the Tokar Delta where small-scale breeding could occur.*

**Eritrea**

• **Situation**

No locusts were seen on the Red Sea coastal plains between Massawa and the Sudanese border on 17-22 January.

• **Forecast**

*Isolated adults could appear on the northern coastal plains of the Red Sea and breed on a small scale if rainfall occurs.*

**Somalia**

• **Situation**

Isolated adults were seen at three places along the northwest coastal plains between Berbera (1028N/4502E) and the Djibouti border on 12-18 January.

• **Forecast**

*Small-scale breeding is likely to occur in those areas along the northwest coastal plains where conditions are favourable. Nevertheless, locust numbers will remain below threatening levels.*

**Ethiopia**

• **Situation**

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

• **Forecast**

*No significant developments are likely.*

**Djibouti**

• **Situation**

No locusts were reported during January.

• **Forecast**

*No significant developments are likely.*

**Egypt**

• **Situation**

During January, immature groups persisted in a few places in the northern Sinai Peninsula and groups of mature adults were seen in the Red Sea Hills southwest of Hurghada (2717N/3347E). In the winter breeding areas in the southeast, groups of gregarious mature adults at densities of 100-150/bush were present on the coast and in inland areas in Wadi Diib and other wadis near the Sudanese border. Small-scale breeding occurred and first instar hopper groups and bands formed at densities of 150-200 hoppers/bush from 11 January onwards near Abraq (2324N/3447E), and near Abu Ramad (2224N/3624E) and Wadi Diib during the last week of the month. By the end of the month, hoppers had reached second and third instar. Control operations treated 1,941 ha during January.

• **Forecast**

*Hatching and small band formation will continue on the southern coastal plains of the Red Sea and in adjacent interior areas. By the end of the forecast period, small groups and perhaps a few small swarms could form. As temperatures warm up in the Sinai Peninsula, any surviving locusts could mature and perhaps eventually breed or move south to the Red Sea coastal plains.*

**Saudi Arabia**

• **Situation**

During January, isolated solitarious immature adults were present in a few places on the coastal plains between Jeddah and Qunfidah (1909N/4107E). Low numbers of second and third instar solitarious hoppers were reported, indicating that small-scale and localized breeding had occurred. No locusts were seen during surveys carried out elsewhere along the coastal plains in the north and south.

• **Forecast**

*Low numbers of adults are expected to persist along the coastal plains where small-scale breeding will occur in areas where conditions are favourable.*

**Yemen**

• **Situation**

Scattered immature and mature solitarious adults were seen on the Red Sea coastal plains during a joint survey on both sides of the Yemen / Saudi Arabia border on 8-13 January.

• **Forecast**

*Low numbers of adults are expected to persist on the Red Sea coastal plains and small-scale breeding could occur if additional rains fall.*

**Oman**

• **Situation**

No locusts were seen during surveys carried out in the Musandam Peninsula and in the Dhahira region in the north 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 on the southern coast on 18 January.

• **Forecast**

*No significant developments are likely.*

**Pakistan**

• **Situation**

No locusts were reported during the first half of January.

• **Forecast**

*Isolated adults are likely to appear in the spring breeding areas in Baluchistan, mainly in coastal areas and perhaps eventually further inland.*

**India**

• **Situation**

No locusts were seen during the first half of January.

• **Forecast**

*No significant developments are likely.*

**Afghanistan**

• **Situation**

No reports received.

• **Forecast**

*No significant developments are likely.*

## Announcements

**Locust reporting.** Affected countries are kindly reminded to make sure that all locust situation reports are sent to FAO HQ by the 28th day of the month so the information can be included in the FAO bulletin for the current month; otherwise, it will not appear until the following month. Reports should be sent even if no locusts were found or if no surveys were conducted.

**During emergencies, RAMSES data should be transmitted twice/week and situation summaries should be sent every ten days.**

**Reporting by e-mail.** After each survey or control operation, affected countries should send completed *FAO Desert Locust Survey and Control Forms* or the RAMSES output file with a brief interpretation of the results by e-mail to eclo@fao.org.

**Locust archives.** Desert Locust reports received by FAO from affected countries from 1952 to the present are available on a series of four CDs in PDF. Please contact the Locust Group for more details.

**Upsurge photos.** Pictures of the current upsurge in the Western Region are available on the Internet at: www.fao.org/news/global/locusts/outbreakpix04.htm

**Desert Locust booklet.** FAO has produced a booklet for the general public and donor community entitled *Hunger in their wake: Inside the battle against the Desert Locust*, available for download at: www.fao.org/news/global/locusts/pubs1.htm

**Publications on the Internet.** New FAO publications and meeting reports are available for downloading at www.fao.org/news/global/locusts/pubslist.htm:

- 38th session of the Desert Locust Control Committee meeting report (English)
- Guidelines on minimum requirements for ground-based locust and grasshopper sprayers (English)
- Contingency planning spreadsheets and simulations for outbreaks, upsurges and plagues (English, French)
- FAO Desert Locust Standard Operating Procedures (SOP) for survey, control and aerial operations (English, Arabic)
- FAO Desert Locust Guidelines – Arabic version

**Assistance provided.** Details of assistance provided by donors to the current locust campaign are available on the Internet at: www.fao.org/news/global/locusts/donor/donor.htm.

**Vacancy announcement.** A three-year post in the Locust Group at FAO Headquarters for a Locust Control Officer has been announced. More details are available on the Internet at: http://www.fao.org/VA/vac_en.htm.

**2005 events.** The following meetings are tentatively scheduled:

- **EMPRES/WR.** 3rd Liaison Officers meeting, Dakar (Senegal), 7-11 February

- **Contingency Planning.** 1st workshop sponsored by World Bank, Bamako (Mali), 7-11 March
- **EMPRES/CR.** 6th Consultative Committee, Cairo (Egypt), 14-16 March
- **Train-the-Trainers workshop.** Niamey (Niger), 14 March – 8 April
- **Contingency Planning.** 2nd workshop sponsored by World Bank, Niamey (Niger), 25-29 April
- **CLCPRO.** 3rd session, Tripoli (Libya), 12-16 June
- **CRC.** 27th session of the Executive Committee, Khartoum (Sudan), 24-28 July
- **EMPRES/CR.** 13th Liaison Officers meeting, Sana'a (Yemen), 12-16 November
- **DLCC.** 39th Session, Rome, 12-16 December

**Press release**. Several press releases on the current Desert Locust emergency have been recently issued by FAO. These are available at: http://www.fao.org/newsroom/en/index.html.

## 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**

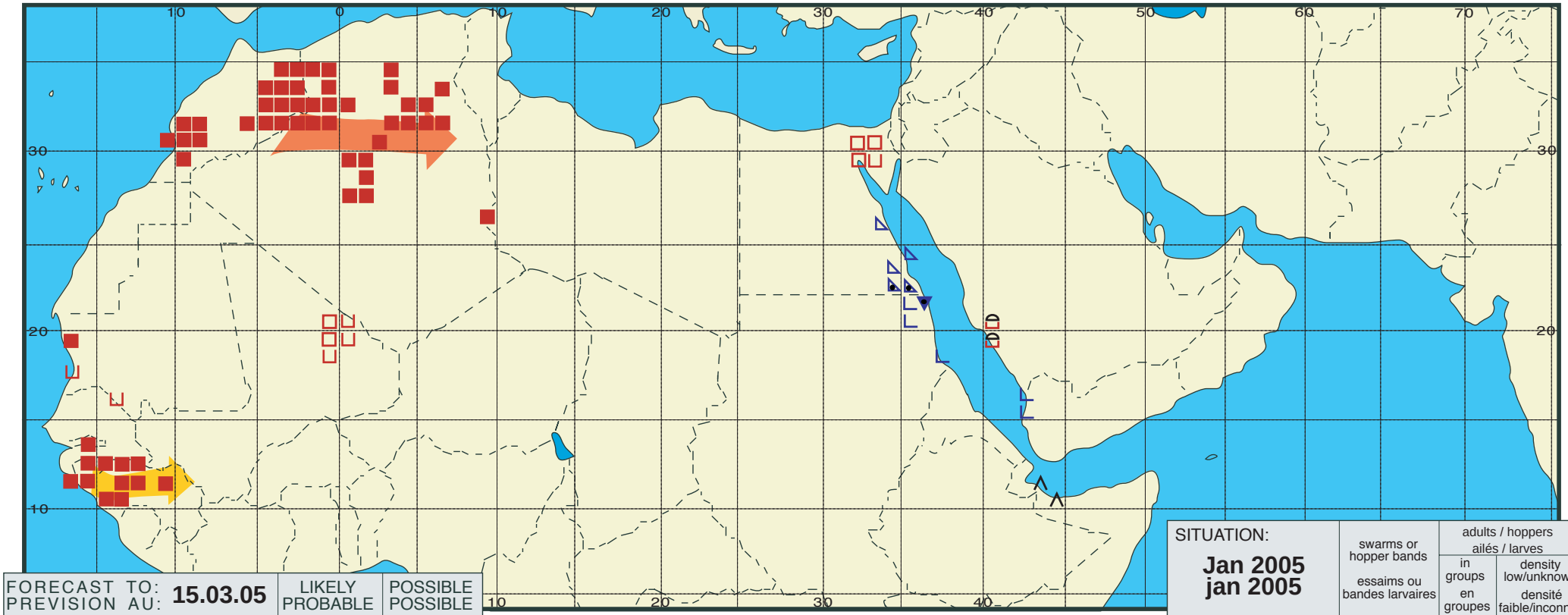
- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

**EASTERN**

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

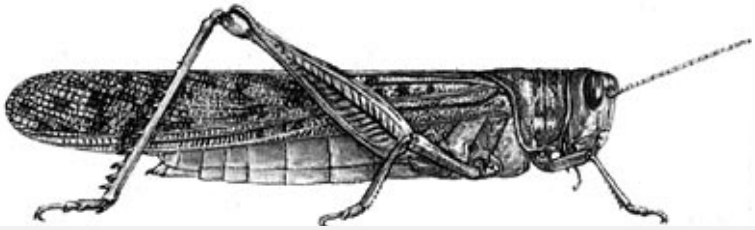
# Desert Locust Summary
# Criquet pèlerin - Situation résumée

**316**




| FORECAST TO: PREVISION AU: **15.03.05** | LIKELY PROBABLE | POSSIBLE POSSIBLE |
|---|---|---|
| favourable breeding conditions<br>conditions favorables à la reproduction | | |
| major swarm(s)<br>essaim(s) important(s) | | |
| minor swarm(s)<br>essaim(s) limité(s) | | |
| non swarming adults<br>ailés non essaimants | | |

| SITUATION: **Jan 2005 jan 2005** | swarms or hopper bands<br>essaims ou bandes larvaires | adults / hoppers ailés / larves | |
|---|---|---|---|
| | | in groups<br>en groupes | density low/unknown<br>densité faible/inconnue |
| immature adults<br>ailés immatures | ■ | □ | ⊔ |
| mature or partly mature adults<br>ailés matures ou partiellement matures | ◣ | ◺ | ∟ |
| adults, maturity unknown<br>ailés, maturité inconnue | ▲ | △ | ∧ |
| egg laying or eggs<br>pontes ou œufs | ▼ | ▽ | ∨ |
| hoppers<br>larves | ● | ○ | ⌓ |
| hoppers & adults (combined symbol example)<br>larves et ailés (ex. de symboles combinés) | ◘ | ◙ | ⌓ |



# DESERT LOCUST UPDATE

**FAO Emergency Centre for Locust Operations**

*(16 Mar 2005)*

## General Situation as of 16 March 2005

**The Desert Locust situation continues to improve in Northwest Africa where control operations and locust infestations keep declining in Algeria and Morocco. Nevertheless, some adults have matured and started laying eggs. Hatching will begin in about two to three weeks, followed by the formation of a limited number of hopper bands. A few immature swarms persist in Guinea. In northeast Sudan, a small number of immature swarms have formed and more are expected in the coming weeks in the general area including adjacent parts of Egypt. Some of these could cross the Red Sea into Saudi Arabia.**

Small infestations of gregarious adults and swarms are present in a few places in **Algeria** south of the Atlas Mountains where temperatures have warmed up sufficiently to allow adults to mature. Egg-laying started during the first week of March in El Oued province in the northeastern Sahara near the Tunisian border. In **Morocco**, small groups of immature adults are present in the northeast near Oujda. No locusts were reported in **Tunisia**. A swarm invasion of Northwest Africa will not occur this spring because of the failure of winter rainfall and the absence of breeding in northern Mauritania. Therefore, spring breeding south of the Atlas Mountains will be on a much smaller scale than in 2004. As temperatures warm up, adults will become more active and easier to find. Consequently, more locusts are likely to be reported but this should not be confused with an invasion in the region. So far this month, good rains have fallen along the Atlantic coast in Morocco (Agadir to Laayoune) and in the central and southern Sahara in Algeria, extending as far south as northern **Mali**.

No locusts were reported in **Mauritania** where light rainfall occurred in the centre and southeast in early March. No reports of locusts were received from other countries in the Western Region. Late reports indicate that limited control operations were underway in mid-February against several immature swarms in central **Guinea**, and one swarm reached the Sierra Leone border. The remaining swarms will eventually move to eastern Guinea and western Mali.

Despite control operations, a few immature swarms started to form during the second week of March in the winter breeding areas along the Red Sea where late instar hopper bands are present in Wadi Diib in northeast **Sudan** and in adjacent areas of southeast **Egypt**. More swarms are likely to form and move to the interior of northern Sudan and southern Egypt. Some swarms could cross the Red Sea to **Saudi Arabia**. In northern Somalia, mechanical control operations were carried out against small hopper patches on the coast near Berbera.

The most up-to-date information on the situation and photos are available on the Internet (www.fao.org/news/global/locusts/locuhome.htm) as well as maps of the latest infestations (193.43.36.11/mapper).

The FAO Desert Bulletin is issued monthly, supplemented by Updates during periods of increased Desert Locust activity, and is distributed by fax, e-mail, FAO pouch and airmail by the Locusts and Other Migratory Pests Group, AGP Division, FAO, 00100 Rome, Italy. It is also available on the Internet.
**Telephone:** +39 06 570 52420 (7 days/week, 24 hr)
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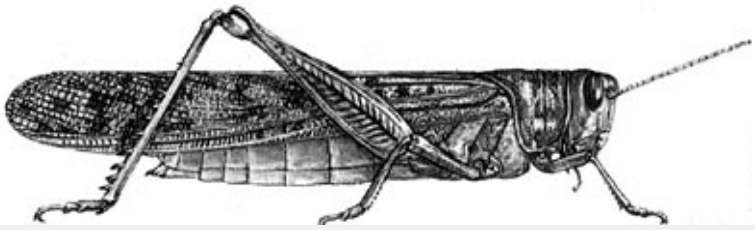

# DESERT LOCUST BULLETIN

**FAO Emergency Centre for Locust Operations** **No. 317**

*(3 March 2005)*

## General Situation during February 2005 Forecast until mid-April/June 2005

**The Desert Locust situation continued to improve in the Western Region during February. Intensive control operations against immature swarms continued in Algeria but declined in Morocco. Nevertheless, breeding will occur from March to May mainly in Algeria and to a lesser extent in Morocco, Tunisia and perhaps Libya but on a much smaller scale than last year. In West Africa, the few immature swarms present in parts of southern Senegal and Guinea will move to Mali in the coming months. In the Central Region, control operations treated an increasing number of small hopper bands near the Red Sea coast on both sides of the Egyptian and Sudanese border. A few swarms could form and cross the Red Sea to Saudi Arabia. Local breeding also occurred in northern Somalia. As temperatures increase in Northwest Africa, existing locust populations will be easier to detect. It is essential that intense survey and control operations be maintained. Meanwhile, Sahelian countries should prepare themselves for any swarms that could arrive from Northwest Africa at the beginning of the summer. In addition, intensive monitoring is required in the coming weeks along the Red Sea coasts.**

**Western Region.** The number of immature swarms continued to decline in **Morocco** and **Algeria** for the second consecutive month because of control operations. As breeding did not occur in northern Mauritania this year, a swarm invasion of Northwest Africa will not take place this spring. Therefore, spring breeding will be on a much smaller scale than in 2004. As temperatures warm up, adults will become more active and easier to find. Consequently, more locusts will be reported but this should not be confused with an invasion in the region. The swarms that are currently present in Northwest Africa will mature and lay eggs during March, primarily in the northern Sahara in Algeria and, to a lesser extent in southeast Morocco, southern **Tunisia**, and perhaps in western **Libya**. Hatching is likely to start in early April, followed by band formation during April and May. Any infestations that are not controlled will form small swarms in June that could invade the Sahel. In West Africa, a few immature swarms persisted in southern **Senegal** and in **Guinea**. These swarms are likely to remain immature and eventually move to central **Mali** from about late March onwards on winds associated with the northern movement of the Inter-Tropical Convergence Zone (ITCZ).

**Central Region.** Hopper bands continued to form along both sides of the border in northeast **Sudan** and southeast **Egypt**. Small swarms could form from any infestations that are not controlled and move across the Red Sea to the coastal plains and interior of Saudi Arabia or move inland towards the summer breeding areas in Sudan. As a result of undetected local breeding, gregarious hoppers formed a few very small groups on the coast of northern **Somalia**. The situation requires careful monitoring in the above-mentioned countries. Elsewhere, isolated locusts were present on the Red Sea coastal plains in **Yemen**.

**Eastern Region.** Scattered adults were reported in the spring breeding areas in Baluchistan, western **Pakistan**, where unusually heavy rain in February caused severe flooding in many places. Consequently, ecological conditions will become favourable for breeding and locust numbers will increase during the next few months. The situation requires careful monitoring during the spring. The Iran/Pakistan joint-border survey in April will provide a good basis for this.

The FAO Desert Bulletin is issued monthly, supplemented by Updates during periods of increased Desert Locust activity, and is distributed by fax, e-mail, FAO pouch and airmail by the Locusts and Other Migratory Pests Group, AGP Division, FAO, 00100 Rome, Italy. It is also available on the Internet.
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## Weather & Ecological Conditions in February 2005

**Unusually cold weather persisted for a second consecutive month in Northwest Africa. Rainfall was reported in some places in the region as well as in Mauritania where ecological conditions are starting to improve. Rain also fell along parts of the Red Sea coastal plains. Unusually heavy rains and flooding occurred in the spring breeding areas in western Pakistan.**

In the **Western Region**, unusually cold weather persisted in locust-infested areas in Northwest Africa during February. By the end of the month, temperatures started to warm up slightly in Libya and in a few places in the northern Sahara in Algeria. Light to moderate rain fell in parts of the northern and central Sahara in Algeria near Bechar and Adrar, and near Bouarfa, Morocco. Moderate rainfall in northwest Libya caused some wadis to flood. Light rainfall occurred along the Algerian/Libyan border near Ghadames and Ghat, and along the Atlantic coast in Western Sahara and southwest Morocco between Dakhla and Tiznit but locusts were not reported in these areas. Dry conditions prevailed in the central and southern Algerian Sahara except for small patches of green vegetation north of Tamanrasset, particularly in the Timiaouine, Ahnet and Mouydir regions. Ecological conditions were more favourable north of Tademait in southern Ouargla province and were improving in the northern Sahara where most of the locust infestations were present. Conditions remained cold and unfavourable in southern Tunisia. Light to moderate rain fell in central and southern Mauritania where ecological conditions were favourable in only a few places.

In the **Central Region**, moderate rains fell during February along the Red Sea coastal plains in southeast Egypt, southern Eritrea and Yemen. Heavy rain fell in the Western Desert in Egypt near Bahariya and Farafra oases on the 21st. Conditions were favourable for breeding in Wadi Diib in northeast Sudan and in adjacent areas of southeast Egypt. Despite scattered showers in northern Oman and the rainfall in Yemen, breeding conditions continued to remain unfavourable in both countries. Although light to moderate rain fell on the escarpment and coastal plains in northwest Somalia and adjacent areas in Djibouti, breeding conditions were generally unfavourable except for a few places on the northern Somali coast near Berbera.

In the **Eastern Region**, unusually heavy rains fell during February in the spring breeding areas in Baluchistan, western Pakistan, primarily in the interior (Turbat 414 mm, Panjgur 137 mm, Khuzdar 105 mm, Nushki 159 mm, Dalbandin 54 mm, Kharan 32 mm) and, to a lesser extent, along the coast (Jiwani 35 mm, Pasni 12 mm). Rainfall during the first half of the month extended to Lasbela (Uthal 80 mm) and the Cholistan Desert (Bahawalpur 42 mm) in Pakistan and to northern Rajasthan (Bikaner 35 mm) in India. Severe flooding was reported in many places. Light rain fell on the southeastern coastal plains in Iran near Jask and in the interior near Iranshahr.

## Area Treated

About 350,000 ha were treated in February, bringing the total area treated since the beginning of the upsurge (October 2003) to 12.7 million ha.

| | Current month | Winter campaign cumulative |
|---|---|---|
| Algeria | 316,921 ha (Feb) | 1,751,354 ha |
| Egypt | 11,054 ha (Feb) | |
| Gambia | 6,037 ha (Jan) | |
| Guinea | 2,500 ha (1-10 Feb) | |
| Guinea Bissau | 7,368 ha (1-20 Feb) | |
| Morocco | 6,110 ha (Feb) | 1,990,406 ha |
| Senegal | 4,200 ha (Feb) | |
| Sudan | 2,610 ha (Feb) | |

*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**

No significant locust infestations were seen during surveys undertaken throughout most of the country in February. Residual populations from last summer's breeding persisted in the centre and southeast

where individual mature adults were seen north of Moudjeria (1752N/1219W) and immature individuals were present southwest of Nema (1636N/0715W), respectively.

• **Forecast**

*Small residual non-gregarious populations are expected to persist and mature in a few places in the south and centre of the country. Scattered adults may be present in the northwest in Inchiri and near Zouerate where small-scale breeding could occur in areas of recent rainfall but may be difficult to detect. Any swarms that could arrive from spring breeding in Northwest Africa are not expected until late June or July.*

**Senegal**

• **Situation**

During February, a few immature swarms were present in the southwest near Sedihou (1251N/1535W) and the Guinea Bissau border. Aerial control operations treated 4,200 ha.

• **Forecast**

*A limited number of small immature swarms are expected to persist in the south during March and slowly drift towards the eastern part of the country. By the end of the forecast period, these swarms could start moving into western Mali.*

**Mali**

• **Situation**

No locusts were reported during February.

• **Forecast**

*Low numbers of adults are likely to be present in parts of the Adrar des Iforas, the Tilemsi Valley and in the Timetrine and will start to mature once temperatures increase. Small-scale breeding could occur if rains fall. A few immature swarms from Guinea and Senegal are likely to arrive in the southwest from about late March onwards and move towards the centre of the country as the ITCZ moves northward. Any swarms that could arrive from spring breeding in Northwest Africa are not expected until late June or July.*

**Niger**

• **Situation**

A late report indicated that surveys were not carried out during January. No reports were received in February.

• **Forecast**

*Low numbers of adults are likely to be present in parts of the Air Mountains. As temperatures increase, the adults will mature and, if conditions are favourable, small-scale breeding is expected to occur that could lead to the formation of a few hopper groups. Any swarms that could arrive from spring breeding in Northwest Africa are not expected until late June or July.*

**Chad**

• **Situation**

No reports were received during February.

• **Forecast**

*No significant developments are likely.*

**Cape Verde Islands**

• **Situation**

No reports were received during February.

• **Forecast**

*Low numbers of locusts may persist on a few islands but no significant developments are likely.*

**Gambia**

• **Situation**

A late report indicated that aerial control operations treated 6,037 ha in the North Bank, Lower River and Western divisions during January. No reports were received during February.

• **Forecast**

*There is a low risk that a few small residual immature swarms may appear at times from neighbouring areas of southern Senegal; otherwise, no significant developments are likely.*

**Guinea Bissau**

• **Situation**

During February, several immature swarms persisted in the north and centre of the country. Control operations, assisted by Senegalese and Libyan teams, treated about 7,000 ha. By the end of the month, no further infestations were reported.

• **Forecast**

*There is a low risk that a few small residual immature swarms may appear at times from neighbouring areas of southern Senegal; otherwise, no significant developments are likely.*

**Guinea**

• **Situation**

During the first decade of February, there were new reports of immature swarms arriving in the north from neighbouring areas of Guinea Bissau and southern Senegal. The swarms subsequently moved to the central highlands between Labe (1119N/1217W) and Mamou (1024N/1205W) and a few swarms reached

the coast near Conakry. Ground control operations treated 2,500 ha on 1-10 February.

• **Forecast**

*A limited number of small immature swarms are expected to persist during March, slowly drift towards the eastern part of the country, and eventually move into southwest Mali.*

**Burkina Faso**

• **Forecast**

*There is a very low risk that a few Southern Circuit immature swarms from Guinea could appear in the northwest and continue to move further north with the ITCZ in April or May.*

**Sierra Leone**

• **Forecast**

*There is a very low risk that a few Southern Circuit immature swarms from Guinea could appear in the north and continue to move towards the northeast with the ITCZ in March or April.*

**Benin, Cameroon, Cote d'Ivoire, Ghana, Liberia, Nigeria and Togo**

• **Forecast**

*No significant developments are likely.*

**Algeria**

• **Situation**

During February, the situation continued to improve as locust infestations declined due to intensive control operations. Nevertheless, low numbers of small immature groups and swarms persisted in the northern Sahara south of the Atlas Mountains between El Bayadh (3341N/0102E) and El Oued (3323N/0649E). Smaller infestations were present in the northwest near Tlemcen (3452N/0115W) and in the northeast south of Khenchela (3526N/0706E). By the end of the month, some of the adults had become mature and were seen copulating. No locusts were seen during surveys in the central and southern Sahara as well as in the east along the border with Libya. Aerial and ground control operations treated 316,921 ha during February, mainly in El Oued province.

• **Forecast**

*As temperatures increase in March and April, locusts will continue to mature and lay eggs in the northern Sahara where ecological conditions are favourable. Hatching should start in about late March or early April, hopper bands will form during April and May, and low numbers of new swarms could start to form in early June. The scale of the breeding and eventual swarm formation will be much smaller than in 2004.*

**Morocco**

• **Situation**

During February, the situation continued to improve as locust infestations declined due to control operations. Consequently, only a limited number of small immature swarms persisted in the northeast near Oujda (3441N/0145W) and Bouarfa (3232N/0159W), close to the Algerian border. The situation was reported to be calm in other regions of the country. Aerial and ground control operations treated 6,110 ha during February.

• **Forecast**

*As temperatures increase in March and April, locusts will mature and lay eggs along the southern side of the Atlas Mountains where ecological conditions are favourable. Although the scale of the breeding will be much smaller than in 2004, hatching and band formation will occur during April and May, and low numbers of new swarms could start to form in early June.*

**Libyan Arab Jamahiriya**

• **Situation**

No locusts were seen during surveys carried out in the northwest and southwest of the country in February.

• **Forecast**

*Once temperatures increase, small-scale breeding could take place in the northwest between Ghadames and Nalut and in the southwest near Ghat. If so, hatching and band formation will occur during April and May, albeit on a much smaller scale than in 2004, and a few swarms could start to form in early June.*

**Tunisia**

• **Situation**

During the last decade of January, control operations treated 630 ha of immature swarms in the Tozeur and Kebili regions in the south.

During February, operations continued in both regions, treating 350 ha. On the 21st, several small swarm fragments of immature adults were reported between the Algerian border and Kebili (3342N/0858E).

• **Forecast**

*As temperatures increase in March and April, locusts will mature and lay eggs in the south where ecological conditions are favourable. Although the*

*scale of the breeding will be much smaller than in 2004, hatching and band formation will occur during April and May, and low numbers of new swarms could start to form in early June.*

**CENTRAL REGION**

**Sudan**

• **Situation**

During February, hatching and band formation continued in Wadi Diib in the northern Red Sea Hills just south of the Egyptian border. Numerous small hopper patches, each about 100 $m^2$ in size and containing up to 400 hoppers/$m^2$, formed within a limited area northwest of Sufiya (2119N/3613E). By the 20th, most of the hoppers were third instar while a few had reached the fifth instar stage. A 200 ha band was reported, presumably from numerous patches fusing together. Control operations treated 2,610 ha during February.

In the Tokar Delta, a few isolated maturing adults were seen during the month.

• **Forecast**

*Several small adult groups and perhaps a few swarms are expected to form in Wadi Diib during March. Unless additional rain falls, these are likely to move eventually towards the Red Sea or further inland.*

**Eritrea**

• **Situation**

No locusts were seen on the central Red Sea coastal plains between Mersa Gulbub (1633N/3908E) and Tio (1441N/4057E) on 21-25 February.

• **Forecast**

*No significant developments are likely.*

**Somalia**

• **Situation**

In early February, gregarious mature locusts were seen on the coast east of Berbera (1028N/4502E). These are most likely of local origin. Nomads indicated that these adults laid eggs in about mid January. By 25 February, eight groups of third and fourth instar hoppers had formed at densities of 120-200 hoppers/$m^2$ in one area of 0.5 ha. Isolated immature and mature adults were seen nearby. No locusts were found elsewhere along the coast or on the escarpment.

• **Forecast**

*A few small groups or perhaps a swarm or two are likely to form on the coast east of Berbera in March and probably disperse along the escarpment.*

**Ethiopia**

• **Situation**

During the first decade of February, no locusts were seen during surveys carried out between Dire Dawa and the Somali border.

• **Forecast**

*No significant developments are likely.*

**Djibouti**

• **Situation**

No locusts were seen during surveys carried out in February along the Gulf of Tadjourah coast to Obock (1157N/4317E) and in the interior between Djibouti and Ali Sabieh (1109N/4242E).

• **Forecast**

*No significant developments are likely.*

**Egypt**

• **Situation**

During February, high densities of mature adults and first to fourth instar hoppers were present in the southeast in Wadi Diib near the Sudanese border and the Red Sea coast. Hopper bands were also reported on the coastal plains near Shalatyn (2308N/3535E), Abu Ramad (2224N/3624E) and Marsa Alam (2504N/3454E), and in the Red Sea Hills between Allaqi (2240N/3255E), Wadi Abraq (2322N/3451E) and Hamat (2410N/3510E). Control operations treated 11,054 ha during February.

• **Forecast**

*Several small adult groups and perhaps a few swarms are expected to form in the southeast during March. Unless additional rain falls, these are likely to eventually move to the Red Sea or towards the interior of Sudan.*

**Saudi Arabia**

• **Situation**

No locusts were seen during surveys carried out in along the Red Sea coast and in the interior during February.

• **Forecast**

*Low numbers of adults may be present in some places along the Red Sea coastal plains. Unless additional rainfall occurs, numbers will decline. If swarms form on the western side of the Red Sea, there is a risk that some of them could cross the Red Sea and appear on the coastal plains between Al Wajh and Qunfidah from about mid-March onwards and perhaps continue further inland.*

**Yemen**

• **Situation**

Isolated immature and mature solitarious adults were present at a few places on the Red Sea coastal plains near Hodeidah (1450N/4258E) on 20-23 February.

• **Forecast**

*Low numbers of adults are expected to persist on the Red Sea coastal plains and breed if additional rainfall occurs.*

**Oman**

• **Situation**

No locusts were seen during surveys carried out on the Batinah coast in the north and in Sharqiya region in the northeast during February.

• **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 on the southern coast near Bandar Abbas, on the southeastern coastal plains between Jask and Chabahar, and further inland near Iranshahr on 21-22 February.

• **Forecast**

*Low numbers of adults may appear on the southeastern coastal plains and breed on a small scale if additional rainfall occurs.*

**Pakistan**

• **Situation**

No locusts were reported during the second half of January. During February, scattered immature solitarious adults were present in coastal areas near Turbat (2600N/6303E) and west of Karachi near Lasbela (2612N/6620E).

• **Forecast**

*Locust numbers could increase significantly in Baluchistan as a result of breeding in coastal and interior areas during the spring. Consequently, hoppers are likely to appear during March and April. Given the unusually heavy rainfall, the situation requires close monitoring in the coming months.*

**India**

• **Situation**

No locusts were seen 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 emergencies, 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.

**Locust archives.** Desert Locust reports received by FAO from affected countries from 1952 to the present are available on a series of four CDs in PDF. Please contact the Locust Group for more details.

**Upsurge photos.** Pictures of the current upsurge are available on the Internet at: www.fao.org/news/global/locusts/outbreakpix04.htm

**Desert Locust booklet.** FAO has produced a booklet for the general public and donor community entitled Hunger in their wake: Inside the battle against the Desert Locust, available for download at: www.fao.org/news/global/locusts/pubs1.htm

**Publications on the Internet.** New FAO publications and meeting reports are available for downloading at www.fao.org/news/global/locusts/pubslist.htm:

- 38th session of the Desert Locust Control Committee meeting report (English)

- Guidelines on minimum requirements for ground-based locust and grasshopper sprayers (English)
- Contingency planning spreadsheets and simulations for outbreaks, upsurges and plagues (English, French)
- FAO Desert Locust Standard Operating Procedures (SOP) for survey, control and aerial operations (English, Arabic)
- FAO Desert Locust Guidelines – Arabic version

**Assistance provided.** Details of assistance provided by donors to the current locust campaign are available on the Internet at: www.fao.org/news/global/locusts/donor/donor.htm.

**Vacancy announcement.** Applications for a three-year post in the Locust Group at FAO Headquarters for a Locust Control Officer must be received before 31 March. More details are available on the Internet at: http://www.fao.org/VA/vac_en.htm.

**2005-06 events.** The following meetings are tentatively scheduled:

- **Train-the-Trainers workshop.** Niamey (Niger), 14 March – 5 April
- **Contingency Planning.** 1st workshop sponsored by World Bank, Bamako (Mali), 25-29 April
- **Donor meeting.** sponsored by the World Bank, Niamey (Niger), Bamako (Mali), 2-4 May
- **CLCPRO.** 3rd session, Tripoli (Libya), 12-16 June
- **CRC.** 27th session of the Executive Committee, Khartoum (Sudan), 24-28 July
- **EMPRES/CR.** 6th Consultative Committee, Cairo (Egypt), 13-15 November
- **DLCC.** 39th Session, Rome, 12-16 December
- **EMPRES/CR.** 13th Liaison Officers meeting, Yemen, January 2006
- **EMPRES/WR.** 4th Liaison Officers meeting, Algiers, January/February 2006

**Press release**. Several press releases on the current Desert Locust emergency have been recently issued by FAO. These are available at: http://www.fao.org/newsroom/en/index.html.

## Glossary of terms

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

**NON-GREGARIOUS ADULTS AND HOPPERS**

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

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

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

**ADULT SWARM AND HOPPER BAND SIZES**

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

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

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

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

VERY LARGE
- swarm: 500+ km$^2$ • band: 50+ ha

**RAINFALL**

LIGHT
- 1 - 20 mm of rainfall.

MODERATE
- 21 - 50 mm of rainfall.

HEAVY
- more than 50 mm of rainfall.

**OTHER REPORTING TERMS**

BREEDING
- the process of reproduction from copulation to fledging.

SUMMER RAINS AND BREEDING
- July - September/October

WINTER RAINS AND BREEDING
- October - January/February

SPRING RAINS AND BREEDING
- February - June/July

**DECLINE**

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

**OUTBREAK**

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

**UPSURGE**

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

**PLAGUE**

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

**RECESSION**

- period without widespread and heavy infestations by swarms.

**REMISSION**

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

## REGIONS

**WESTERN**

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

**CENTRAL**

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

**EASTERN**

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

# Desert Locust Summary
# Criquet pèlerin - Situation résumée

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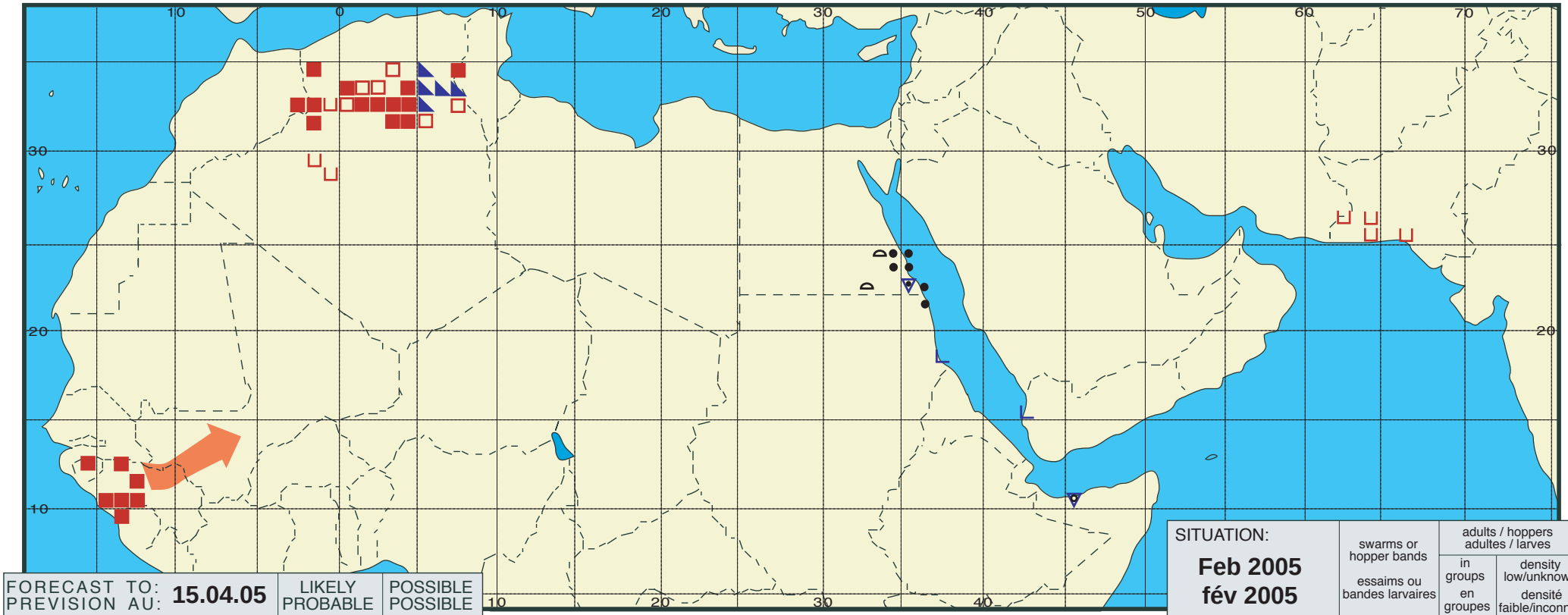
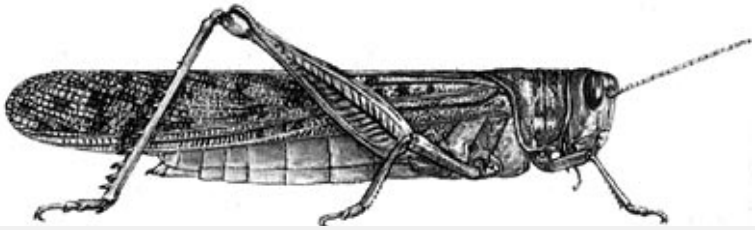



| FORECAST TO: PREVISION AU: **15.04.05** | LIKELY PROBABLE | POSSIBLE POSSIBLE |
|---|---|---|
| favourable breeding conditions<br>conditions favourables à la reproduction | | |
| major swarm(s)<br>essaim(s) important(s) | | |
| minor swarm(s)<br>essaim(s) limité(s) | | |
| non swarming adults<br>adultes non essaimant | | |

| SITUATION: **Feb 2005 fév 2005** | swarms or hopper bands<br>essaims ou bandes larvaires | adults / hoppers adultes / larves<br>in groups en groupes | density low/unknown densité faible/inconnue |
|---|---|---|---|
| immature adults<br>adultes immatures | ■ | □ | ⊔ |
| mature or partly mature adults<br>adultes matures ou partiellement matures | ◣ | ◺ | ∟ |
| adults, maturity unknown<br>adultes, maturité inconnue | ▲ | △ | ∧ |
| egg laying or eggs<br>pontes ou œufs | ▼ | ▽ | ∨ |
| hoppers<br>larves | ● | ○ | ◞ |
| hoppers & adults (combined symbol example)<br>larves et adultes (exemple symboles combinés) | ◘ | ◙ | ◓ |



# DESERT LOCUST UPDATE

**FAO Emergency Centre for Locust Operations**

*(15 April 2005)*

## General Situation as of 15 April 2005

**Only very limited breeding has occurred so far this month in Northwest Africa, mainly in northeast Algeria. Unless good rains fall and substantial hatching occurs in the coming weeks, swarms are not expected to form in Northwest Africa this spring nor threaten the Sahel this summer. Currently in the Sahel, at least one small swarm has moved from Guinea towards northern Mali and a few more could follow. The situation improved near the Red Sea along the Egyptain/ Sudanese border where infestations declined and a few adults have moved towards the Nile Valley in northern Sudan.**

In **Algeria**, small-scale breeding is in progress in a very limited area in the northeastern Sahara between Biskra and El Oued where 25 ha of first and second instar hopper patches were treated from 4 to 12 April. Similar infestations may be present in adjacent areas of southern **Tunisia**. No locusts were seen elsewhere in the spring breeding areas in the north nor in the central or southern Sahara. In **Morocco**, egg-beds were present in the northeast near Oujda and the Algerian border where laying was reported last month but hatching has not yet commenced. Elsewhere in the spring breeding areas, no locusts were seen during surveys carried out along the southern side of the Atlas Mountains. Although more hatching is expected to occur during the remainder of the month and perhaps in early May in Algeria, Morocco and Tunisia, the low numbers of locusts currently present in the region and the lack of significant rainfall so far suggests that breeding will be limited this year. Consequently, the likelihood of a new generation of swarms forming and invading the Sahel at the beginning of the summer is very low.

Immature swarms that have persisted in the central highlands of **Guinea** during the past few months have started to move towards central Mali. So far, one swarm has reached the Sikasso region in southwest **Mali**. A few more small swarms are likely to appear in southwest Mali and perhaps western **Burkina Faso** as the move along the Southern Circuit towards northern Mali during April and May. In northern Mali, scattered adults are present in the Timetrine and Adrar des Aforas. Similar populations are thought to be present in the Air Mountains, **Niger**. No locusts were reported in **Senegal** or **Mauritania**.

In the Central Region, infestations declined in early April near the Red Sea coast in northeast **Sudan** and in southeast **Egypt** because of control operations and the migration of adults towards the interior. On 8-10 April, small groups of immature adults appeared in the Nile Valley near Atbara and Abu Hamad in northern Sudan. Some locusts may have also crossed the Red Sea to the coastal plains in **Saudi Arabia** where adult groups were seen north of Jeddah. No locusts are present along the coastal plains in Sudan but small infestations of late instar hoppers and immature gregarious adults persist in a few places near the coast in southeast Egypt where control operations treated 317 ha on 1-12 April. There were unconfirmed reports of locust hoppers and adults on the northern coast of **Somalia** near Las Koreh in early April. More details are awaited although these may not be Desert Locust.

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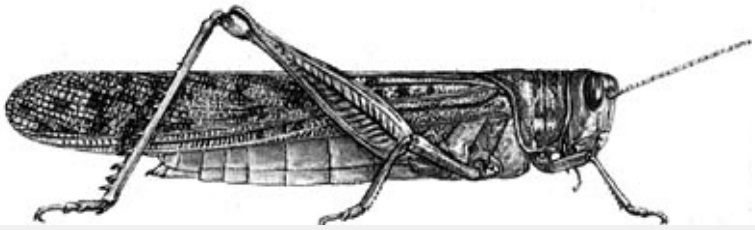
**Internet:** www.fao.org
**DLIS:** www.fao.org/news/global/locusts/locuhome.htm

In the Eastern Region, a joint Iran/Pakistan survey is underway in the spring breeding areas in Baluchistan, western **Pakistan** and southeastern **Iran**.

The most up-to-date information on the situation and photos are available on the Internet (www.fao.org/news/global/locusts/locuhome.htm) as well as maps of the latest infestations (193.43.36.11/mapper).



# DESERT LOCUST BULLETIN

**FAO Emergency Centre for Locust Operations** **No. 318**

*(4 April 2005)*

## General Situation during March 2005 Forecast until mid-May 2005

**Spring breeding commenced during March in Northwest Africa where a limited number of swarms laid eggs in the northeastern Algerian Sahara and, to a lesser extent, in northeast Morocco. Hatching will take place and low numbers of hopper bands will form during April in these areas and probably elsewhere along the southern side of the Atlas Mountains. Several immature swarms that persisted in southern Senegal and Guinea during March will eventually move towards central Mali in April and May. Despite control operations, several swarms formed along the Sudan/Egypt border near the Red Sea coast. Most of these swarms are likely to move towards the Nile River Valley while a few others may cross the Red Sea to Saudi Arabia. It is essential that intense survey and control operations be maintained in all affected countries. Meanwhile, Sahelian countries should prepare themselves for any swarms that could arrive from Northwest Africa from about late June onwards. In western Pakistan, unusually heavy rains fell for a second consecutive month in the spring breeding areas.**

**Western Region.** Small-scale laying started in the Sahara in northeast **Algeria** in early March and in northeast **Morocco** a few weeks later. So far, the laying that was detected in Algeria occurred within a relatively small area of about 150 km by 100 km. Nevertheless, additional laying is likely to occur in the northern Sahara and south of the Atlas Mountains from Morocco to **Tunisia**. Breeding may also extend further south into the central Sahara in Algeria where unusually good rains fell during March. Hatching will occur from early April onwards and hoppers are expected to form bands during April and May. As below-normal rainfall is expected this spring in Northwest Africa and there are fewer locusts currently present than one year ago, breeding this spring will be only on a small and limited scale. In West Africa, limited control operations continued against a few immature swarms that have persisted throughout the winter in southern **Senegal** and in **Guinea**. These swarms will eventually move towards central Mali as part of the Southern Circuit migration. Although no locusts were reported elsewhere in the Sahel, small infestations are probably present in northern **Mali** and **Niger**.

**Central Region.** Hopper bands continued forming on both sides of the border in northeast **Sudan** and southeast **Egypt** during March. By mid-month, several swarms formed and were seen moving towards the south. Ground control operations were underway in both countries. Although most of the swarms are expected to move further inland in both countries, there is a risk that a few swarms could cross the Red Sea to the coastal plains of **Saudi Arabia**. Mechanical control operations were carried out against a very small hopper band infestation on the coast in northwest **Somalia**. In **Yemen**, heavy rains caused flooding on the southern coast and in the interior but, so far, no locusts were seen.

**Eastern Region.** Scattered adults were reported in the spring breeding areas in Baluchistan, western **Pakistan** during March. Unusually heavy rains fell throughout the area for the second consecutive month, causing ecological conditions to be extremely favourable for breeding. The situation requires careful monitoring during the spring. A Iran/Pakistan joint-border survey in April will help to clarify the situation.

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No. 318

DESERT LOCUST BULLETIN

## Weather & Ecological Conditions in March 2005

**Breeding conditions improved in Northwest Africa during March because of increasing temperatures and good rain including unusually heavy rains in the Algerian Sahara. Ecological conditions were improving along the Red Sea coast in Yemen and southwest Saudi Arabia as well as along the Gulf of Aden coast and interior in southern Yemen where good rains fell. Unusually heavy rains fell for the second consecutive month in the spring breeding areas in western Pakistan where conditions are favourable for breeding.**

In the **Western Region**, good rains fell in parts of the region during the first week of March and generally dry conditions prevailed during the remainder of the month. Light rain fell in parts of central, southern and eastern Mauritania in early March where ecological conditions remained unfavourable for breeding. During the first week, rains fell over the Sahara in southern and eastern Algerian where unusually heavy rain, up to 28 times the long-term annual average, was reported at Djanet 28 mm, In Amenas 23 mm, Tamanrasset 18 mm. Rainfall extended to western Libya, where floods were reported near Ghat, and to northern Mali. In Morocco, moderate to heavy showers also fell in the Souss Valley, the Atlantic coast and in the northeast. Light rains occurred during a few days in the third week in the northeastern Algerian Sahara where locusts are breeding and along the Algerian/ Libyan border. Thereafter, dry weather prevailed in the Region. There was a significant increase in temperature from mid-month onwards in Morocco and Algeria (24°C-36°C maximum, 10°C-20°C minimum). Consequently, breeding conditions improved in Morocco (the Souss Valley, along the southern side of the Atlas Mountains, in the southeast), in the northern part of Western Sahara and in Algeria (north of Tindouf, in the northern Sahara, and in the central Sahara on the Tademait Plateau and northwest of Tamanrasset). Green vegetation was present in the extreme southwest and southeast of Algeria. Ecological conditions remained unfavourable for breeding in most parts of the Sahel.

In the **Central Region**, light to moderate rain fell at times during March along the Red Sea coast in southeast Egypt and in southern Eritrea. Nevertheless, vegetation was drying out and conditions were becoming unfavourable for breeding in currently infested areas in Egypt and Sudan. Heavier rain fell along the coast between Jizan, Saudi Arabia and Hodeidah, Yemen. Although rain was not reported, ecological conditions were favourable for breeding on the Red Sea coastal plains north of Jeddah. During the first week of March, moderate to heavy rains and floods occurred in southern Yemen along the coast east of Aden and in the interior near Wadi Bayhan. Good rains fell again at mid-month in the interior. Vegetation was becoming green in some of these areas. In northern Somalia, light to moderate rains fell during the first week on the escarpment near Berbera.

In the **Eastern Region**, unusually heavy rains fell during the first half of March in Baluchistan, western Pakistan for the second consecutive month. Rainfall occurred throughout the spring breeding areas from the coast to the Afghanistan border, including coastal areas (Jiwani 128 mm, Gwadar 93 mm, Pasni 25 mm), central (Panjgur 74 mm, Khuzdar 65 mm, Turbat 61 mm,) and northern (Dalbandin 64 mm, Nokkundi 29 mm, Kharan 19 mm, Nushki 10 mm) areas. Light rain fell in the Lasbela valley west of Karachi. Consequently, ecological conditions were unusually favourable for breeding.

## Area Treated

About 58,000 ha were treated in March, bringing the total area treated since the beginning of the upsurge (October 2003) to 12.8 million ha.

| | Current Month | Winter campaign cumulative |
|---|---|---|
| Algeria | 36,175 ha (1-27 Mar) | 1,751,354 ha |
| Egypt | 2,053 ha (1-28 Mar) | |
| Guinea | 17,950 ha (11 Feb – 10 Mar) | |
| Morocco | 570 ha (Mar) | 1,997,086 ha |
| Senegal | 210 ha (1-10 Mar) | |
| Sudan | 4,872 ha (Mar) | |
| Tunisia | 10 ha (Mar) | |

*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**

No locusts were seen during surveys carried out in the northwest and south during March.

• **Forecast**

*Scattered adults may be present in the northwest in Inchiri and near Zouerate where small-scale breeding could occur in areas of recent rainfall but may be difficult to detect.*

**Senegal**

• **Situation**

During the first decade of March, limited aerial control operations continued against small immature swarms in the southwest near Sedihou (1251N/1535W) and treated 210 ha.

• **Forecast**

*A few small immature groups and swarms may persist in the south and move towards western Mali.*

**Mali**

• **Situation**

No reports were received during March.

• **Forecast**

*Low numbers of adults are likely to be present and maturing in parts of the Adrar des Iforas, the Tilemsi Valley and in the Timetrine. Small-scale breeding could occur if rains fall. A few immature swarms from Guinea and Senegal are likely to arrive in the southwest and move towards the centre of the country as the ITCZ moves northward.*

**Niger**

• **Situation**

No reports were received during March.

• **Forecast**

*Low numbers of adults are likely to be present and maturing in parts of the Air Mountains. Small-scale breeding could occur if rains fall.*

**Chad**

• **Situation**

No locusts were reported between 15 February and 15 March.

• **Forecast**

*No significant developments are likely.*

**Guinea Bissau**

• **Situation**

No reports were received during March.

• **Forecast**

*A limited number of small immature swarms may be present in the eastern part of the country.*

**Guinea**

• **Situation**

During the second half of February, several immature swarms persisted in the central highlands between Labe (1119N/1217W) and Mamou (1024N/1205W). Additional swarms, reportedly coming from adjacent areas of Guinea Bissau, appeared in the northwest near Boké (1056N/1418W) on the 18th and in the north between Koundadra (1228N/1315W) and Gaoual (1144N/1314W) during the last week of the month. Swarms were also seen in the southwest near Kindia (1004N/1251W) and close to the Sierra Leone border. Damage occurred on vegetable crops in some areas. The situation remained unchanged during the first decade of March. Ground control operations treated nearly 18,000 ha from 11 February to 10 March.

• **Forecast**

*A limited number of small immature swarms are expected to persist and move towards the eastern part of the country, and eventually continue into southwest Mali.*

**Burkina Faso**

• **Forecast**

*There is a very low risk that a few Southern Circuit immature swarms from Guinea could appear in the northwest and continue to move further north with the ITCZ in April or May.*

**Sierra Leone**

• **Forecast**

*There is a very low risk that a few Southern Circuit immature swarms from Guinea could appear in the north and continue to move towards the northeast with the ITCZ in April.*

**Benin, Cameroon, Cape Verde, Cote d'Ivoire, Gambia, Ghana, Liberia, Nigeria and Togo**

• **Forecast**

*No significant developments are likely.*

**Algeria**

• **Situation**

In late February and early March, the immature

swarms that persisted in the northern Sahara province of El Oued and, to a lesser extent, Khenchela, matured as temperatures increased and egg laying commenced during the first week of March. Most of the infestations were concentrated between El Oued (3323N/0649E), Biskra (3448N/0549E) and the Tunisian border. Smaller infestations were present in Ghardaia and Ouargla provinces.

Further south, gregarious immature adults were reported at one location in the central Sahara near In Salah (2712N/0229E) on 1 March. Elsewhere, no locusts were seen in the northwestern, southern and eastern Sahara.

Aerial and ground control operations treated 36,175 ha on 1-27 March.

• **Forecast**

*Small to moderate scale breeding will occur in the northeast and in other areas of the northern Sahara and perhaps extend further south where recent rain fell near In Amenas, Djanet and Tamanrasset. Although the scale of the breeding will be much smaller than in 2004, hatching and band formation will occur during the forecast period.*

**Morocco**

• **Situation**

During March, a few small groups of gregarious adults were present in the northeast near the Algerian border and south of Oujda between Touissit (3429N/0146W) and Guenfouda (3428N/0159W). By mid-month, many of the adults had become mature and a small swarm was seen copulating on the 24th. Ground and aerial control operations treated 570 ha during March.

• **Forecast**

*Small-scale breeding will occur in the northeast and probably along the southern side of the Atlas Mountains. Although the scale of the breeding will be much smaller than in 2004, hatching and a small number of bands could occur during the forecast period.*

**Libyan Arab Jamahiriya**

• **Situation**

No locusts were seen during surveys carried out in March in the northwest near Ghadames, Nalut, Mizda and in the Al-Hamada Al-Hamra.

• **Forecast**

*Small-scale breeding is expected to occur in the northwest with limited hatching and hopper band formation during the forecast period.*

**Tunisia**

• **Situation**

In early March, a few immature adults were seen in the southern province of Tozeur near the Algerian border at Hezoua (3350N/0734E). Control operations treated 10 ha. The situation was reported to be calm during the remainder of the month.

• **Forecast**

*Small-scale breeding is expected to occur in the south, mainly between the Algerian border and Tozeur. Limited hatching and hopper band formation will occur during the forecast period.*

**CENTRAL REGION**

**Sudan**

• **Situation**

During March, several hundred small late-instar hopper bands, at densities up to 20 hoppers/$m^2$ and 1,000 $m^2$ in size, were present in Wadi Diib between Tomala (2002N/3551E) and the Egyptian border. Fledging occurred from the 10th to the 18th and several small, medium-density immature groups and swarms formed. Several swarms were seen moving towards the south near the border up to 22 March. The number of immature swarms reports declined during the last week of the month and only a few small groups and swarmlets and scattered adults remained. Ground control operations treated 4,872 ha during March.

Elsewhere, scattered mature adults were present at a few places along the southern Red Sea coastal plains between Tokar (1827N3741E) and Suakin (1908N/3717E). In the Tokar Delta, isolated fifth instar hoppers were seen at Seteirab (1837N/3729E). No locusts were seen in the northern interior on 22-24 March.

• **Forecast**

*Although locust numbers are expected to decline in the northeast, adults and perhaps a few small groups or swarmlets may persist in Wadi Diib. Any locusts that leave the northeast may appear along the Nile River between Shendi and Wadi Halfa. Locusts will also decline in Tokar Delta and adjacent coastal areas.*

**Eritrea**

• **Situation**

No reports were received during March.

• **Forecast**

*No significant developments are likely.*

**Somalia**

• **Situation**

During the first half of March, mechanical control operations were carried out on 0.3 ha on the coast east of Berbera (1028N/4502E) where very small fourth and fifth instar hopper patches and bands at densities of 150-200 hoppers/$m^2$ were present.

• **Forecast**

*Scattered adults are likely to be present and may persist on the coastal plains near Berbera.*

**Ethiopia**

• **Situation**

No locusts were seen during surveys carried out between Dire Dawa and the Somali border on 16-19 March.

• **Forecast**

*No significant developments are likely.*

**Djibouti**

• **Situation**

No reports were received during March.

• **Forecast**

*No significant developments are likely.*

**Egypt**

• **Situation**

During March, late instar hoppers continued to form groups and bands, at densities of up to 100 hoppers/bush, in a few places on the southern coastal plains of the Red Sea between Marsa Alam (2504N/3454E) and the Sudanese border as well as further inland in Wadi Diib and the Red Sea Hills. As the month progressed, an increasing number of the hoppers fledged and became adults that formed groups at densities of up to 300 adults/bush. Ground control operations treated 2,053 ha on 1-28 March.

• **Forecast**

*Several small adult groups and perhaps a few swarms will continue to form in the southeast. Unless additional rain falls, these are likely to move eventually to the Red Sea or towards the interior of Sudan.*

**Saudi Arabia**

• **Situation**

No locusts were seen during surveys carried out along the Red Sea coast and in the interior during March.

• **Forecast**

*The risk of low numbers of adult groups or swarms crossing the Red Sea and appearing on the coastal plains between Al Wajh and Qunfidah will decline by the end of the forecast period. Nevertheless, some groups or swarms could perhaps continue further inland.*

**Yemen**

• **Situation**

No locusts were seen during surveys carried out along the coastal plains west and east of Aden (1250N/4503E) on 12-14 March.

• **Forecast**

*Low numbers of adults may be present along the Red Sea coastal plains where they could breed in areas of recent rainfall.*

**Oman**

• **Situation**

No locusts were seen during surveys carried out on the Batinah coast in the north and in Sharqiya region in the northeast during March.

• **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 on the southern coast near Bandar Abbas and Jask on 12 March.

• **Forecast**

*Locusts are expected to appear and breed on the southeastern coastal plains and interior areas near Iranshahr and Jaz Murian.*

**Pakistan**

• **Situation**

In the spring breeding areas of Baluchistan, isolated solitarious adults were present in the Shooli Valley near Turbat (2600N/6303E) during the first half of March.

• **Forecast**

*Locust numbers are expected to increase significantly in Baluchistan because of the unusually good rainfall in coastal and interior areas that should lead to breeding during the forecast period. Consequently, hoppers are likely to appear during April and May. The situation requires close monitoring in the coming months.*

**India**

• **SITUATION**

No locusts were seen during the second half of February and the first decade of March.

• **FORECAST**

*No significant developments are likely.*

**Afghanistan**

• **SITUATION**

No reports received.

• **FORECAST**

*No significant developments are likely.*

## Announcements

**Locust reporting.** During locust emergencies, 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.

**Locust archives.** Desert Locust reports received by FAO from affected countries from 1952 to the present are available on a series of four CDs in PDF. Please contact the Locust Group for more details.

**Desert Locust booklet.** FAO has produced a booklet for the general public and donor community entitled Hunger in their wake: Inside the battle against the Desert Locust, available for download at: www.fao.org/news/global/locusts/pubs1.htm

**Publications on the Internet.** New FAO publications and meeting reports are available for downloading at www.fao.org/news/global/locusts/pubslist.htm:

- 24th session of the FAO Commission for Controlling the Desert Locust in South-West Asia (English)

**Assistance provided.** Details of assistance provided by donors to the current locust campaign are available on the Internet at: www.fao.org/news/global/locusts/donor/donor.htm.

**2005-06 events.** The following meetings are tentatively scheduled:

- **Train-the-Trainers workshop.** Niamey (Niger), 14 March – 5 April
- **WMO/FAO Regional Workshop on Meteorological Information for locust forecasting, monitoring and control**, Niamey (Niger), 19-22 April
- **Contingency Planning.** 1st workshop jointly organized by FAO and the World Bank (25-29 April) followed by a donor meeting (2-4 May), Bamako (Mali)
- **CLCPRO.** 3rd session, Tripoli (Libya), 12-16 June
- **CRC.** 27th session of the Executive Committee, Khartoum (Sudan), 24-28 July
- **EMPRES/CR.** 6th Consultative Committee, Cairo (Egypt), 13-15 November
- **DLCC.** 39th Session, Rome, 5-9 December
- **EMPRES/CR.** 13th Liaison Officers meeting, Yemen, January 2006
- **EMPRES/WR.** 4th Liaison Officers meeting, Algiers, January/February 2006

**Press release**. Several press releases on the current Desert Locust emergency have been recently issued by FAO. These are available at: http://www.fao.org/newsroom/en/index.html.

## 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**

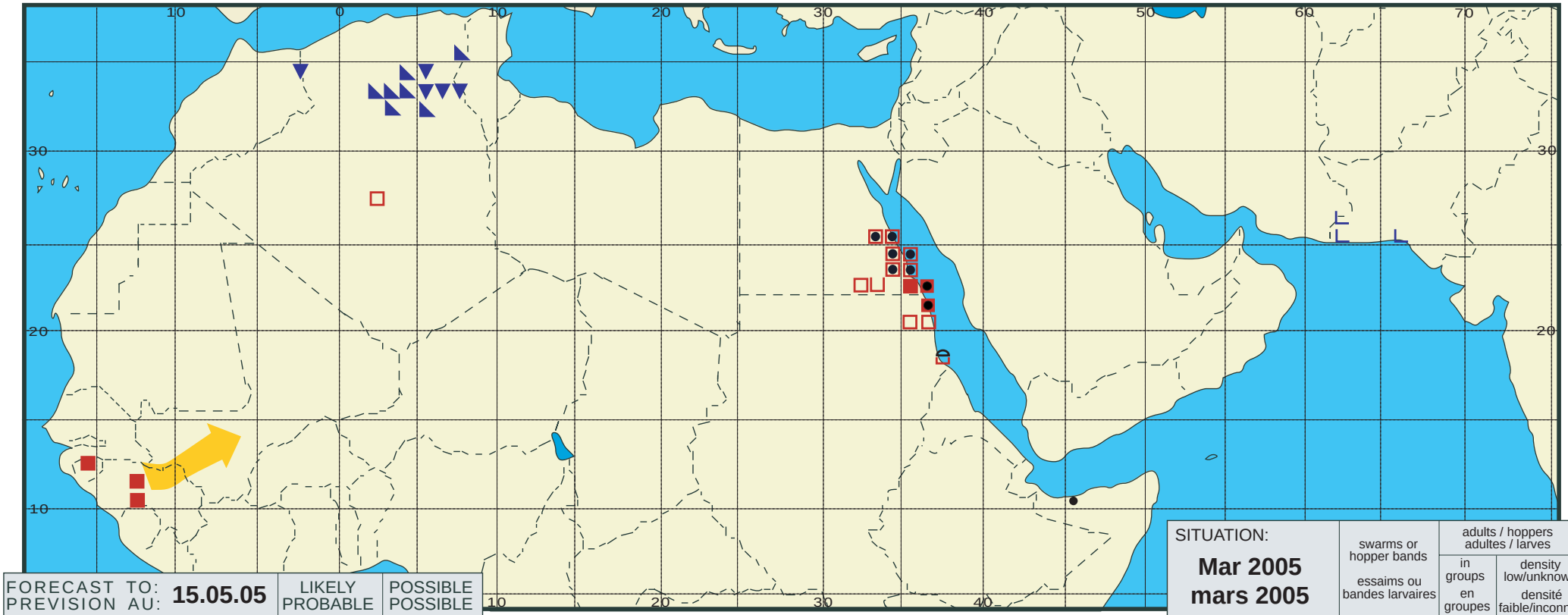
- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

**EASTERN**

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

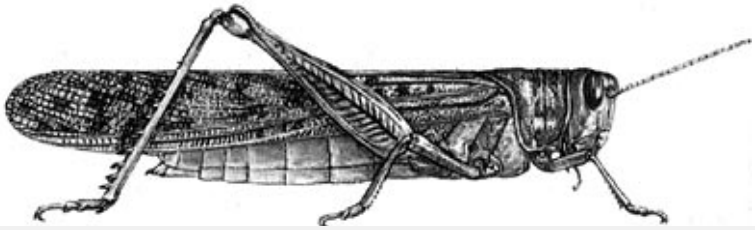
# Desert Locust Summary
# Criquet pèlerin - Situation résumée

**318**




| FORECAST TO: PREVISION AU: **15.05.05** | LIKELY PROBABLE | POSSIBLE POSSIBLE |
|---|---|---|
| favourable breeding conditions<br>conditions favourables à la reproduction | | |
| major swarm(s)<br>essaim(s) important(s) | | |
| minor swarm(s)<br>essaim(s) limité(s) | | |
| non swarming adults<br>adultes non essaimant | | |

| SITUATION: **Mar 2005 mars 2005** | swarms or hopper bands<br>essaims ou bandes larvaires | adults / hoppers adultes / larves | |
|---|---|---|---|
| | | in groups<br>en groupes | density low/unknown<br>densité faible/inconnue |
| immature adults<br>adultes immatures | ■ | □ | ⊔ |
| mature or partly mature adults<br>adultes matures ou partiellement matures | ◣ | ◺ | L |
| adults, maturity unknown<br>adultes, maturité inconnue | ▲ | △ | ⋀ |
| egg laying or eggs<br>pontes ou œufs | ▼ | ▽ | ⋁ |
| hoppers<br>larves | ● | ○ | ◡ |
| hoppers & adults (combined symbol example)<br>larves et adultes (exemple symboles combinés) | ◘ | ◙ | ⊍ |



# DESERT LOCUST UPDATE

**FAO Emergency Centre for Locust Operations** *(25 May 2005)*

## General Situation as of 25 May 2005

**In early May, several immature swarms were seen in southern Niger moving from west to east along the Southern Circuit. A few swarms may have reached northern Cameroon and western Chad. Small-scale breeding is in progress in central Niger where hatching and band formation have commenced. Small hopper infestations are present in northeast Morocco and Algeria. Those in Algeria have started to fledge and could form some adult groups, perhaps a few small swarms, that will start to move towards the Sahel in the coming weeks. At the same time, locust numbers are likely to increase in Niger as breeding continues there. Control operations are underway in Algeria, Morocco and Niger.**

During the first decade of May, there were several reports of immature swarms moving eastwards in southern **Niger** from Maradi to Zinder and Diffa where good rains fell this month. Some of these may have continued migrating and reached western **Chad** near Bol. There were also unconfirmed reports from the extreme north of **Cameroon**. These swarms probably originated in Guinea and moved along the Southern Circuit route to Mali and Burkina Faso in April, as reported in the latest FAO Desert Locust Bulletin No. 319. Locally produced infestations of mature adult groups appeared north of Zinder near Tanout and laid eggs in areas of recent rainfall. In the past few days, hatching commenced and first instar hoppers have started forming small bands. Control operations have treated 420 ha so far. In **Mali**, small infestations are probably present in the north where surveys should be undertaken. Although good rains fell in southeast and northwest **Mauritania**, no locusts were seen during recent surveys.

In Northwest Africa, hoppers formed small patches and bands earlier this month in a limited area near El Oued and Khenchela in northeast **Algeria**. In the past few days, many of the hoppers have started to fledge while new reports of scattered immature adults have been received from the province of Tamanrasset. So far this month, ground control operations have treated 400 ha. In northeast **Morocco**, small infestations of second and third instar hoppers are present near Oujda where ground operations have treated 30 ha in May. Unusually dry conditions prevail in the remainder of the spring breeding areas in Morocco.

In the Central Region, scattered immature solitarious and transiens adults are present in a few places in the Red Sea Hills in southeastern **Egypt**. No new information has been received from **Saudi Arabia** where hopper bands were present on the Red Sea coastal plains near Jeddah last month. In northern **Somalia**, scattered adults were present at mid-month near Erigavo.

The most up-to-date information on the situation and photos are available on the Internet (www.fao.org/news/global/locusts/locuhome.htm) as well as maps of the latest infestations (193.43.36.11/mapper). Please note that the monthly bulletins and updates are no longer distributed by fax.

The FAO Desert Bulletin is issued monthly, supplemented by Updates during periods of increased Desert Locust activity, and is distributed by fax, e-mail, FAO pouch and airmail by the Locusts and Other Migratory Pests Group, AGP Division, FAO, 00100 Rome, Italy. It is also available on the Internet.
**Telephone:** +39 06 570 52420 (7 days/week, 24 hr)
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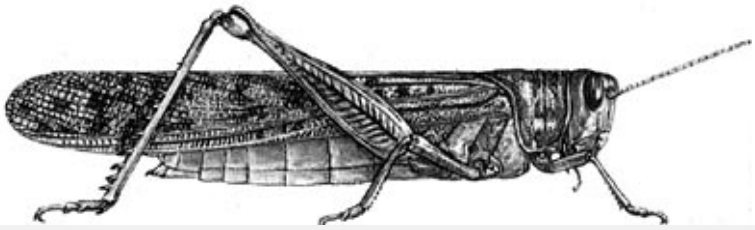

# DESERT LOCUST BULLETIN

**FAO Emergency Centre for Locust Operations** **No. 319**

*(4 May 2005)*

## General Situation during April 2005 Forecast until mid-June 2005

**During April, only very limited breeding occurred in Northwest Africa, mainly in northeast Algeria and to a lesser extent in northeast Morocco. Low numbers of adults were present in northern Mali and probably in northern Niger. At least one small immature swarm moved from Guinea along the Southern Circuit to southwest Mali and Burkina Faso. Although locust infestations declined in Egypt and Sudan, a few swarms crossed the Red Sea to Saudi Arabia where they laid eggs on the coast that hatched and several hopper bands formed during the second half of April. In the Eastern Region, isolated breeding occurred in southeast Iran but few locusts were present in adjacent areas of western Pakistan. Although swarms are not expected to form in Northwest Africa nor invade the Sahel this year, it is essential that intense survey operations be maintained in all affected countries and control be undertaken whenever necessary in the coming months.**

**Western Region.** During April, small-scale breeding was in progress in parts of the spring breeding areas in Northwest Africa where small groups of hoppers formed in the northeastern Sahara in **Algeria** and hatching commenced at the end of the month in one area in northeast **Morocco**. Control operations are underway in Algeria including a bio-pesticide trial. Despite intensive survey efforts in the region, no other infestations were reported. Consequently, very few if any hopper bands or swarms are likely to form during the spring. This suggests that a swarm invasion of the Sahel is unlikely to occur this year and, at most, only low numbers of adults and perhaps a few small groups could arrive from mid June onwards. Presently in the Sahel, scattered adults are present in northern **Mali** and probably in northern **Niger**. A few small immature swarms that persisted in **Guinea** during the past few months moved through the extreme north of **Cote d'Ivoire** and into southwest Mali and central **Burkina Faso**. Although a few more swarms could appear during May, they are not expected to mature and lay eggs during the forecast period nor pose a significant threat to the region.

**Central Region.** Locust infestations declined along both sides of the border in northeast **Sudan** and southeast **Egypt** during April where control operations were undertaken in March. Nevertheless, scattered adults appeared along the Nile in northern Sudan and several small swarms arrived on the Red Sea coastal plains north of Jeddah, **Saudi Arabia** where they laid eggs. By mid-month, hatching and band formation occurred in Saudi Arabia and control operations commenced immediately, treating nearly 2,000 ha. several swarms formed and were seen moving towards the south. Although good rains fell during the second half of April in many parts of the region, no other locusts were seen except for several unconfirmed reports in northern **Somalia**.

**Eastern Region.** Isolated breeding occurred in the spring breeding areas along the coast in southeast **Iran**. No other locusts were seen in Iran or **Pakistan** during the annual Iran/Pakistan joint-border survey in April.

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

## Weather & Ecological Conditions in April 2005

**General dry conditions prevailed during April in the Western Region. Widespread showers fell during the second half of April over Egypt and northern Somalia, and for the second consecutive month over parts of the Arabian Peninsula. Vegetation was drying out in the spring breeding areas in Baluchistan because of poor rainfall.**

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) continued its seasonal progression towards the north in April, oscillating between 10N and 15N and occasionally reaching as far north as 16N over eastern Mali and western Niger. Consequently, dry and hot conditions prevailed in the Sahel in West Africa. Green vegetation and favourable breeding conditions were limited to a few localized areas in the Adrar des Iforas, Mali and in the Air Mountains, Niger. In Northwest Africa, temperatures continued to increase in the spring breeding areas along the southern side of the Atlas Mountains and little rain was reported except at mid-month in eastern Algeria outside of current breeding areas and in western Libya. In Algeria, vegetation was green in the northern Sahara and, to a lesser extent, in localized areas of the central Sahara, mainly the Tademait Plateau and the Ahnet and Mouydir regions north of Tamanrasset. In Morocco, ecological conditions were favourable in some of the wadis and low-lying areas on the High Atlas plateau and in the northeast near Oujda.

In the **Central Region**, good rains fell in several areas during the second half of April. In Egypt, light to moderate rain fell in the Western Desert and along the shores of Lake Nasser. Heavier showers occurred along the southern Red Sea coast between Marsa Alam and Shalatyn. Light rain fell along the coast in Sudan near Port Sudan and in Eritrea near Massawa. Widespread showers occurred over the southern portion of the Arabian Peninsula from the Red Sea coast in Yemen to interior areas between Marib and the Hadhramaut, extending north across the Empty Quarter to central Saudi Arabia and south to the Gulf of Aden. Light to moderate rain also fell over Djibouti and northern Somalia from Hargeisa and Berbera to Burao and Erigavo. Flooding was reported in both Yemen and northern Somalia. In the summer breeding areas in Sudan, light rain fell in Northern Kordofan near El Obeid and between Khartoum and Kassala. At the end of the month, good rains fell along the central Red Sea coast in Saudi Arabia. As a result of these rains, ecological conditions are likely to improve in these areas.

In the **Eastern Region**, vegetation in the spring breeding areas in Baluchistan of Iran and Pakistan was drying out because of poor rainfall during April. Moderate rains fell at the end of the month in parts of Rajasthan, India where Jaisalmer reported 42 mm on the 30th.

## Area Treated

Only about 3,000 ha were treated in April compared to 742,000 ha in April 2004, bringing the total area treated since the beginning of the upsurge (October 2003) to 12.8 million ha.

| | |
|---|---|
| Algeria | 547 ha (4-30 April) |
| Egypt | 513 ha (1-24 April) |
| Saudi Arabia | 1,950 ha (4-18 April) |

*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**

No locusts were seen during surveys carried out in the northwest, centre and south during April.

• **FORECAST**

*Low numbers of adults are expected to start to appear in parts of the centre and south at the end of the forecast period. There is a very low risk that a few small adult groups could appear from Northwest Africa after mid-June.*

**Senegal**

• **SITUATION**

No locusts were reported during April.

• **FORECAST**

*No significant developments are likely.*

**Mali**

• **Situation**

In late March, low numbers of solitarious, transiens and gregarious immature adults were seen in a few places in Timetrine and the Adrar des Iforas.

During April, an immature swarm was seen moving in the southwest near Sikasso (1118N/0538W) early in the month. This swarm probably originated from the central highlands in Guinea where they have been present during the past few months.

• **Forecast**

*Low numbers of adults are likely to be present and maturing in parts of the Adrar des Iforas, the Tilemsi Valley and in the Timetrine. Small-scale breeding could occur if rains fall. A few more small immature swarms from Guinea could appear in the southwest during May and move towards the northeast of the country as the ITCZ moves northward. There is a very low risk that a few small adult groups could appear in the north from Northwest Africa after mid-June.*

**Niger**

• **Situation**

Although no reports were received in April, scattered immature adults and perhaps a few small groups were thought to be present in the Air Mountains.

• **Forecast**

*Low numbers of adults and a few small immature groups are almost certainly present and maturing in parts of the Air Mountains. Small-scale breeding could occur if rains fall. There is a very low risk that a few small adult groups could appear in Tamesna and Air from Northwest Africa after mid-June. A limited number of Southern Circuit groups and perhaps a small swarm could also appear in the west from adjacent areas of Burkina Faso and Mali.*

**Chad**

• **Situation**

No locusts were reported between 15 March and 15 April.

• **Forecast**

*No significant developments are likely.*

**Guinea**

• **Situation**

Although no reports were received, a limited number of small immature swarms were likely present and persisting in the central highlands during April.

• **Forecast**

*The number of immature swarms that are thought to be present in the central highlands will decline as the swarms move along the Southern Circuit to Mali. Consequently, no significant developments are likely.*

**Burkina Faso**

• **Situation**

On 14 April, a small immature swarm was seen in the southwest at Orodara (1059N/0455W), which is adjacent to the Sikasso region in Mali. On the 20th, an immature swarm estimated to be about 5,000 ha in size was seen 35 km south of Ouagadougou. On the 22nd, the swarm moved towards the northeast and was treated by air and ground teams. During the month, there were several reports of swarms moving from the southwest towards the northeast. Some of the reports may be of the same swarm seen several times. Consequently only a limited number of swarms are likely to be present, having originated from the central highlands in Guinea and moved along the Southern Circuit through southwest Mali and the extreme north of Cote d'Ivoire.

• **Forecast**

*There is a very low risk that a few more Southern Circuit immature swarms could appear in the west and continue to move further north with the ITCZ in May. By June, this risk will be substantially reduced.*

**Cote d'Ivoire**

• **Situation**

During the last week of April, there were two unconfirmed reports of immature swarms moving in the extreme north of the country near Tengrela (1029N/0624W), adjacent to the Sikasso region in Mali.

• **Forecast**

*There is a low risk that a few small swarms might pass through the extreme north during May as they move along the Southern Circuit from Guinea to Mali or Burkina Faso. No significant developments are likely.*

**Benin, Cameroon, Cape Verde, Gambia, Ghana, Guinea Bissau, Liberia, Nigeria and Sierra Leone, Togo**

• **Forecast**

*No significant developments are likely.*

**Algeria**

• **Situation**

In late March, hatching occurred in the northeast Sahara between El Oued (3323N/0649E) and Biskra (3448N/0549E). During April, hatching continued in these areas, giving rise to small patches of early

instar hopper groups. At mid-month, breeding had extended to adjacent areas of Khenchela province where hatching was reported in the south. By the end of the month, breeding was also reported southeast of Laghouat (3349N/0243E) and hoppers near El Oued had reached the fourth instar. No locusts were seen during surveys carried out in other areas of the country. Ground teams treated 547 ha during April. Metarhizium trials were in progress on a few of the infestations in the northeast.

• **Forecast**

*Small-scale breeding will continue in the northeastern Sahara and hoppers will form small groups and perhaps a few small bands. Hoppers that are not detected or controlled will fledge from late May onwards and form at most a few small groups and perhaps a swarmlet in early June.*

**Morocco**

• **Situation**

During April, egg pods were detected in the northeast near the Algerian border and south of Oujda in a limited area between Touissit (3429N/0146W) and Guenfouda (3428N/0159W) where laying occurred in March. Small-scale hatching and low numbers of first instar hoppers were reported in this area from 25 April onwards.

• **Forecast**

*Small-scale breeding will continue on a limited basis in the northeast near Oujda where hoppers are expected to fledge in late May and, if not detected or controlled, form at most a few small groups in early June.*

**Libyan Arab Jamahiriya**

• **Situation**

No locusts were seen during surveys carried out in April in the northwest near Ghadames, Nalut and in the Al-Hamada Al-Hamra.

• **Forecast**

*Although scattered adults may be present and breeding on a limited basis in a few places in the northeast where rain fell in March, locust numbers are expected to be too low to give rise to hopper bands or swarms during the forecast period.*

**Tunisia**

• **Situation**

No locusts were reported and no reports were received during April.

• **Forecast**

*Small-scale breeding may be in progress in a few places in the south, mainly between the Algerian border and Tozeur. If so, hoppers that are not detected or controlled could fledge from late May onwards and form at most a few small groups in early June.*

**CENTRAL REGION**

**Sudan**

• **Situation**

During the first half of April, infestations declined in the northeast near the Red Sea coast and interior areas along Wadi Diib and, by mid-month, only isolated immature adults were seen at four locations. Isolated immature gregarious adults appeared in the Nile River Valley near Abu Hamed (1932N/3320E) and Atbara (1742N/3400E) during the second week of the month. These adults are most likely from Wadi Diib. No locusts were seen during surveys in the Tokar Delta.

• **Forecast**

*Scattered adults are likely to persist in the north near Abu Hamed and could appear in other areas between Shendi and Dongola. Low numbers of adults are also likely to appear in the summer breeding areas in Northern Kordofan and Northern Darfur where they will eventually mature and lay eggs with the onset of the seasonal rains. If swarms form on the Red Sea coast of Saudi Arabia in June, there is a risk that these could cross the Red Sea and appear in the summer breeding areas between Kassala and Darfur.*

**Eritrea**

• **Situation**

No locusts were reported during April.

• **Forecast**

*No significant developments are likely.*

**Somalia**

• **Situation**

During the first week of April, isolated maturing solitarious adults were seen northeast Berbera (1028N/4502E) and mature adults were present west of Berbera near Bulhar (1023N/4425E). There were no signs or evidence of swarms as claimed by the locals. At mid-month, there were unconfirmed reports of locusts on the coast between Las Koreh (1110N/4812E) and Bosaso (1118N/4910E), and in the nearby Golis Mountains.

• **Forecast**

*Scattered adults are likely to be present and may persist on the coastal plains near Berbera. Scattered*

*adults may also appear and could eventually breed in adjacent areas of recent rainfall on the escarpment and plateau. The situation requires careful and regular monitoring.*

**Ethiopia**

• **Situation**

No locusts were reported during April.

• **Forecast**

*No significant developments are likely.*

**Djibouti**

• **Situation**

No locusts were reported during April.

• **Forecast**

*No significant developments are likely.*

**Egypt**

• **Situation**

During April, low numbers of late instar hoppers, fledglings, immature and mature adults persisted along the Red Sea coastal plains between Marsa Alam (2504N/3454E) and the Sudanese border as well as further inland in Wadi Diib and the Red Sea Hills. The infestations consisted of a mixture of solitarious, transiens and gregarious locusts. In a few places, densities were as high as 600 adults/bush. By the end of the month, infestations had declined along the coast but were still present in a few places further inland near Allaqi (2256N/3300E) and along Lake Nasser near Garf Husein (2317N/3252E). Ground control operations treated 513 ha on 1-24 April.

• **Forecast**

*Low numbers of adults and perhaps a few small groups are likely to persist near Lake Nasser where they could eventually breed on a small scale in areas of recent rainfall.*

**Saudi Arabia**

• **Situation**

During the first week of April, several mature adult groups at densities of 50-150 locusts/tree were seen copulating on the Red Sea coastal plains north of Jeddah near Masturah (2309N/3851E) on the 4th. During the following days in the same area, a mature swarm at a density of 10-50 adults/$m^2$ laid eggs on the 5th and another swarm at a density of 2,000-4,000 adults/$m^2$ was seen laying eggs on the 7th. Scattered infestations of gregarious adults and groups were reported in nearby areas. These locusts probably originated from infestations that were present on the Red Sea coasts of Egypt and Sudan.

Hatching started on 15 April and hatchlings were forming small bands at densities of 50 hoppers/$m^2$. Scattered hoppers were also seen nearby. Aerial and ground surveys estimated that infestations were present within a relatively small area of some 140 $km^2$. Elsewhere, no locusts were seen in the spring breeding areas in the central interior. Control operations treated 1,950 ha on 4-18 April.

• **Forecast**

*Low to moderate numbers of small hopper groups and bands are likely to form on the northern Red Sea coastal plains between Jeddah and Yenbo. Additional hatching may occur during the first half of May.*
*Any hoppers that are not detected or controlled are expected to fledge from mid-May onwards and could form small immature adult groups and perhaps a few small swarms. If no further rainfall occurs, the locusts are likely to move across the Red Sea towards Sudan.*

**Yemen**

• **Situation**

No locusts were reported during April.

• **Forecast**

*Low numbers of adults may be present along the Red Sea coastal plains where they could breed in areas of recent rainfall. Scattered adults could appear in the interior between Marib and Hadhramaut and eventually breed in areas that received good rains during April.*

**Oman**

• **Situation**

No reports were received during April.

• **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**

During the annual joint Iran/Pakistan locust survey in the second half of April, isolated first to third instar hoppers and maturing adults were seen at five places near Chabahar (2517N/6036E), indicating that small-scale breeding occurred during the spring this year.

• **Forecast**

*Locust numbers will decline in the southeast as vegetation dries out.*

**Pakistan**

• **Situation**

Despite unusually good ecological conditions, no locusts were seen in the spring breeding areas in Baluchistan during the second half of March and first half of April.

• **Forecast**

*Any locusts that may be present in the spring breeding areas in Baluchistan will decline as conditions dry out. Consequently, a few scattered adults may start to appear in the summer breeding areas in Tharparkar and Cholistan by the end of the forecast period.*

**India**

• **Situation**

No locusts were seen during the second half of March and the first three weeks of April.

• **Forecast**

*A few scattered adults may start to appear in the summer breeding areas in Rajasthan by the end of the forecast period.*

**Afghanistan**

• **Situation**

No reports received.

• **Forecast**

*No significant developments are likely.*

## Announcements

**Locust reporting.** During locust emergencies, 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.

**Locust archives.** Desert Locust reports received by FAO from affected countries from 1952 to the present are available on a series of four CDs in PDF. Please contact the Locust Group for more details.

**Desert Locust booklet.** FAO has produced a booklet for the general public and donor community entitled Hunger in their wake: Inside the battle against the Desert Locust, available for download at: www.fao.org/news/global/locusts/pubs1.htm

**Publications on the Internet.** New FAO publications and meeting reports are available for downloading at www.fao.org/news/global/locusts/pubslist.htm:

- 24th session of the FAO Commission for Controlling the Desert Locust in South-West Asia (English)

**Assistance provided.** Details of assistance provided by donors to the current locust campaign are available on the Internet at: www.fao.org/news/global/locusts/donor/donor.htm.

**2005-2006 events.** The following meetings are tentatively scheduled:

- **FAO Representatives.** Locust briefing for Western Region, Dakar (Senegal), 18-19 May
- **CLCPRO.** 3rd session, Tripoli (Libya), 12-16 June
- **CRC.** 27th session of the Executive Committee, Khartoum (Sudan), 24-28 July
- **EMPRES/CR.** 6th Consultative Committee, Cairo (Egypt), 13-15 November
- **DLCC.** 39th Session, Rome, 5-9 December
- **EMPRES/CR.** 13th Liaison Officers meeting, Yemen, January 2006
- **EMPRES/WR.** 4th Liaison Officers meeting, Algiers, January/February 2006

**Press release**. Several press releases on the current Desert Locust emergency have been recently issued by FAO. These are available at: http://www.fao.org/newsroom/en/index.html.

**Nick Jago**. It is with deep regret that we announce the death of Nick Jago on 26 April. Mr. Jago devoted his life to the taxonomy, ecology and management of locusts and grasshoppers, especially in the Sahel. We would like to express our sincere condolences to his family and his government.

## Glossary of terms

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

### NON-GREGARIOUS ADULTS AND HOPPERS

**ISOLATED (FEW)**

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

**SCATTERED (SOME, LOW NUMBERS)**

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

**GROUP**

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

### ADULT SWARM AND HOPPER BAND SIZES

**VERY SMALL**

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

**SMALL**

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

**MEDIUM**

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

**LARGE**

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

**VERY LARGE**

- swarm: 500+ $km^2$ • band: 50+ ha

### RAINFALL

**LIGHT**

- 1 - 20 mm of rainfall.

**MODERATE**

- 21 - 50 mm of rainfall.

**HEAVY**

- more than 50 mm of rainfall.

### OTHER REPORTING TERMS

**BREEDING**

- the process of reproduction from copulation to fledging.

**SUMMER RAINS AND BREEDING**

- July - September/October

**WINTER RAINS AND BREEDING**

- October - January/February

**SPRING RAINS AND BREEDING**

- February - June/July

**DECLINE**

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

**OUTBREAK**

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

**UPSURGE**

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

**PLAGUE**

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

**RECESSION**

- period without widespread and heavy infestations by swarms.

**REMISSION**

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

### 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**

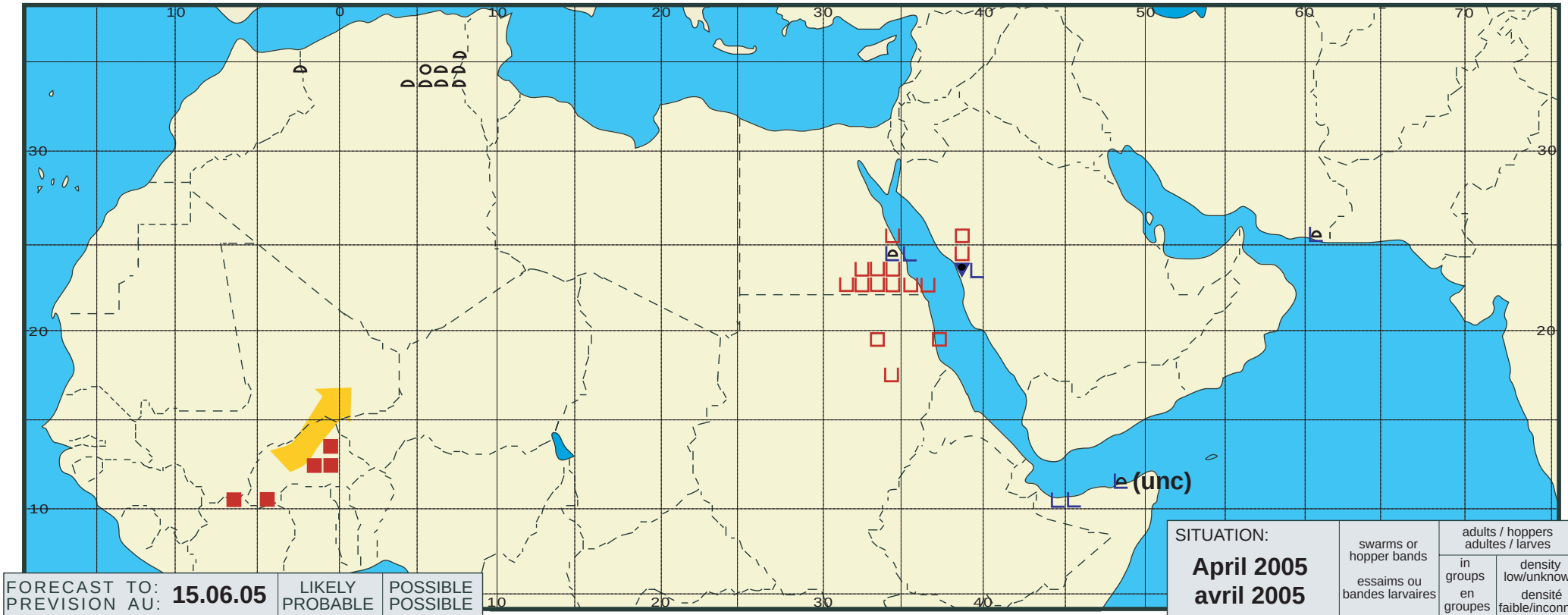
- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

**EASTERN**

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

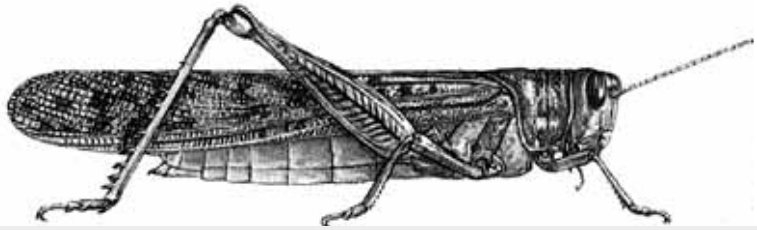
# Desert Locust Summary
# Criquet pèlerin - Situation résumée

**319**




| FORECAST TO: PREVISION AU: **15.06.05** | LIKELY PROBABLE | POSSIBLE POSSIBLE |
|---|---|---|
| favourable breeding conditions<br>conditions favourables à la reproduction | | |
| major swarm(s)<br>essaim(s) important(s) | | |
| minor swarm(s)<br>essaim(s) limité(s) | | |
| non swarming adults<br>adultes non essaimant | | |

| SITUATION: **April 2005 avril 2005** | swarms or hopper bands<br>essaims ou bandes larvaires | adults / hoppers adultes / larves | |
|---|---|---|---|
| | | in groups<br>en groupes | density low/unknown<br>densité faible/inconnue |
| immature adults<br>adultes immatures | | | |
| mature or partly mature adults<br>adultes matures ou partiellement matures | | | |
| adults, maturity unknown<br>adultes, maturité inconnue | | | |
| egg laying or eggs<br>pontes ou œufs | | | |
| hoppers<br>larves | | | |
| hoppers & adults (combined symbol example)<br>larves et adultes (exemple symboles combinés) | | | |



# DESERT LOCUST UPDATE

**FAO Emergency Centre for Locust Operations**

*(20 June 2005)*

## General Situation as of 20 June 2005

**The Desert Locust situation is a cause of concern in Sudan as several swarms moved east across the country from Darfur to Gedaref in mid-June. Some swarms have laid eggs while others may reach or have already reached western Eritrea. Survey efforts should be intensified in both countries. Locust infestations continue to decline in the spring breeding areas in Northwest Africa. In the summer breeding areas in the Sahel in West Africa, small-scale breeding and ground control operations are underway in central Niger and groups of adults and perhaps a few swarms are present in northern Mali. Although swarms are unlikely to invade the Sahel this year, intensive survey operations should nevertheless be immediately launched in Mali, Niger and Chad and continue in Mauritania.**

In the Central Region, a few more swarms appeared in western Darfur, **Sudan** from Chad in early June and quickly matured. Some swarms laid eggs in western and northern Darfur while others moved eastwards along the Inter-Tropical Convergence Zone on 12-16 June, first appearing in western and northern Kordofan and then continuing across the Nile River to the Gedaref area in eastern Sudan. A few swarms are expected to reach the western lowlands of **Eritrea**. Hatching and band formation are likely to start by the end of June in Darfur. In southern **Egypt**, hatchlings and early instar hoppers persisted in the Nokra Valley near Aswan and solitarious immature adults were present on farms near Sh. Oweinat. No locusts were reported elsewhere in the region.

Desert Locust infestations continued to decline in the spring breeding areas in Northwest Africa. In northeast **Morocco**, 6 ha of small residual populations of late instar hoppers were treated near Oujda during the first decade of the month. Although locusts were not seen during recent surveys in northern and central **Algeria**, small-scale breeding was in progress in the south near Tamanrasset where control operations treated 1,200 ha of late instar hoppers and scattered adults during the first week of June.

In West Africa, early rains have fallen in parts of the summer breeding areas in the Sahel. In northern **Mali**, there was an unconfirmed report from nomads of two mature swarms appearing from the north along the border with Algeria on 1-2 June. Groups of immature adults were seen on the 6th in the Tilemsi Valley. In **Niger**, small-scale breeding continues near Tanout where control teams treated 172 ha of early instar hopper bands and mature adults during the first decade of June. Additional surveys are being mounted in both countries. No locusts were reported in **Mauritania**, **Senegal** or **Chad**.

The most up-to-date information on the situation is available on the new FAO locust web site (www.fao.org/ag/locusts). Please note that the monthly bulletins and updates are no longer distributed by fax.

The FAO Desert Bulletin is issued monthly, supplemented by Updates during periods of increased Desert Locust activity, and is distributed by fax, e-mail, FAO pouch and airmail by the Locusts and Other Migratory Pests Group, AGP Division, FAO, 00100 Rome, Italy. It is also available on the Internet.
**Telephone:** +39 06 570 52420 (7 days/week, 24 hr)
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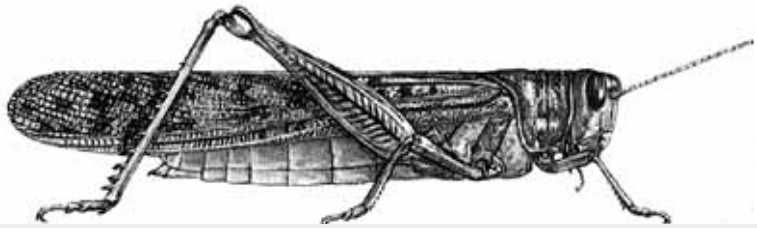

# DESERT LOCUST BULLETIN

**FAO Emergency Centre for Locust Operations** **No. 320**

*(3 June 2005)*

## General Situation during May 2005 Forecast until mid-July 2005

**Small-scale breeding commenced in central Niger during May and control operations were initiated against small hopper bands that started to form by the end of the month. Several immature swarms associated with the Southern Circuit migration moved across southern Niger, through northern Nigeria, Cameroon and Chad and eventually reached western Darfur in Sudan. Some of these swarms could reach eastern Sudan and western Eritrea and may eventually breed. Locust infestations continued to decline in the spring breeding areas in Morocco and Algeria where limited control operations were conducted. Although swarms are unlikely to invade the Sahel this year, intensive survey operations should nevertheless be immediately launched in Mali, Niger and Chad and continue in Mauritania.**

**Western Region.** During May, several immature swarms moved east between 13N and 15N along the Inter-Tropical Convergence Zone from western **Niger** to eastern **Chad**. This movement is commonly referred to as the Southern Circuit migration. Some of these swarms passed through northern **Cameroon** and probably northern **Nigeria**. Groups of mature adults and a few small swarms, mainly from residual populations in Niger near the Air Mountains and in the Sahara region, appeared in central Niger and laid eggs in a relatively limited area where unusually heavy rains fell in early May. By the end of the month, hatching had occurred and small hopper bands were forming. Although control operations were underway, breeding may have taken place in other areas where good rains fell such as near Tahoua. The situation is less clear in northern **Mali** where small-scale breeding may be in progress in parts of the north. No locusts were reported in **Mauritania** or **Senegal**. Spring breeding has come to an end in Northwest Africa where locust numbers continued to decline in northeast **Morocco** and northeast **Algeria**. In the latter, control operations including a bio-pesticide trial were undertaken against small infestations of hopper bands. Small-scale breeding was reported in southern Algeria. During the forecast period, breeding will continue in Niger and is likely to commence in Mali and Mauritania.

**Central Region.** Several Southern Circuit swarms arrived in western Darfur, **Sudan** during the last week of May and continued to move eastwards because although the rains had just started ecological conditions were still dry. These swarms are likely to move to Northern Kordofan and could cross the Nile River and reach eastern Sudan and the western lowlands in **Eritrea** and eventually mature and may breed. They may be supplemented by adults arriving from southern **Egypt** where small-scale breeding occurred during May and perhaps by any locusts that escaped control operations that were carried out against hopper bands on the Red Sea coast north of Jeddah, **Saudi Arabia**. By the end of the forecast period, small hopper groups and bands could form in Sudan and perhaps Eritrea. Solitarious locusts were present in a few places in southern **Yemen** and northern **Somalia** where limited breeding could take place in the coming weeks if conditions are favourable. No locusts were reported elsewhere in the region.

**Eastern Region.** No locusts were reported in the region and dry conditions prevailed except in parts of Rajasthan, **India** where good rains fell. No significant developments are likely during the forecast period.

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

No. 320

DESERT LOCUST BULLETIN

## Weather & Ecological Conditions in May 2005

**Seasonal rains commenced in a few places in the summer breeding areas in the Sahel in West Africa and Sudan and ecological conditions improved during May. Rainfall was heaviest in central Niger where breeding eventually occurred. General dry conditions prevailed elsewhere in the recession area.**

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) continued its seasonal progression towards the north in May, oscillating around 15N and occasionally reaching as far north as 20N over western Mauritania and 22N over northern Mali and Chad. When the ITCZ surged northwards, rain fell in parts of the summer breeding area, mainly in central Niger near Tahoua and Tanout on 1-2 May, in the Air Mountains on the 8th, and on the 27-29th in northern Mali along the border with Algeria as well as in eastern Chad near the Sudanese border. Rainfall was heaviest in Niger near Zinder (123 mm) and Tanout (31 mm). By mid-month ecological conditions had become favourable for breeding in these areas and vegetation in the Air Mountains was turning green again from the recent rains. Light rain fell in a few parts of Inchiri in northwest Mauritania and in local areas within Assaba, Brakna and Hodh El Gharbi in the south where ecological conditions were dry. In northern Mali, light rain fell sporadically during the first week of May and perhaps again towards the end of the month. A few small patches of green vegetation were present in the Timetrine and on the western side of the Adrar des Iforas. No significant rain fell in the spring breeding areas along the southern side of the Atlas Mountains in Northwest Africa or in western Libya. Consequently, vegetation was drying out or already dry in most areas and ecological conditions were not favourable for further breeding.

In the **Central Region**, seasonal rains began to fall in parts of the summer breeding areas in Sudan during the third decade of May. Light to moderate rain was reported in Western Darfur (Geneina 30 mm), Northern Darfur (El Fasher 23 mm), Northern Kordofan (En Nahud 41 mm, El Obeid 18 mm), Khartoum (34 mm) and Kassala (42 mm). By the end of the month, vegetation in some of these areas was starting to become green. Light rain fell in northern Sudan near Atbara. Light rain also fell in the Red Sea Hills and perhaps on the nearby coastal plains in northeast Sudan and southeast Egypt. Although some rain fell in the highlands and the western lowlands of Eritrea at mid-month, ecological conditions were dry. Moderate rain fell in southern Yemen near Lahij at mid-month and on the central and northern Red Sea coastal plains during the last week of the month. In northern Somalia, ecological conditions were generally unfavourable for breeding even though rain fell at times in parts of the northwest and central coastal plains and on the escarpment near Hargeisa.

In the **Eastern Region**, dry conditions prevailed in the spring breeding areas in eastern Iran and western Pakistan. Moderate to heavy rains that fell in the summer breeding areas in Rajasthan, India between Jodhpur and Jaisalmer in early May caused ecological conditions to improve in many areas. During the last decade of the month, the southwesterly winds that eventually bring rain associated with the monsoon to the summer breeding areas along the Indo-Pakistan border became established over the Horn of Africa. Nevertheless, monsoon rains are not expected to start until later in June.

## Area Treated

Nearly 8,300 ha were treated in May compared to more than 1 million ha in May 2004, bringing the total area treated since the beginning of the upsurge (October 2003) to 12.8 million ha.

| | |
|---|---|
| Algeria | 1,570 ha (1-31 May) |
| Egypt | 557 ha (1-30 May) |
| Morocco | 47 ha (1-29 May) |
| Niger | 938 ha (1-26 May) |
| Saudi Arabia | 757 ha (19-30 April) |
| | 5,155 ha (1-25 May) |

*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**

No locusts were seen during surveys carried out in the northwest, centre and south during May.

• **Forecast**

*Low numbers of adults are expected to start to appear in parts of the centre and south and eventually breed on a small scale in those areas that recent rainfall.*

**Mali**

• **Situation**

No locusts were reported during May.

• **Forecast**

*Low numbers of adults are likely to be present and breeding in parts of the Adrar des Iforas, the Tilemsi Valley and in the Timetrine. As the current situation is not very clear and as there is a low risk that a few small adult groups could appear in the north from Northwest Africa after mid-June, intensive surveys should immediately commence in all of the above-mentioned areas.*

**Niger**

• **Situation**

In late April and early May, several medium-density immature swarms associated with the Southern Circuit migration moved eastwards through the south of the country. On 27 April, a swarm was reported near the Benin border at Gaya (1152N/0328E). Swarms were also reported several days later near Tillaberi (1428N/0127E) and Niamey. Several swarms moved east and reached Maradi (1329N/0710E) and the Zinder (1346N/0858E) area on the 3rd and Diffa (1318N/1236E) on the 7th. One swarm was estimated to be about 38 km$^2$ in size while another was reportedly 72 km$^2$. Most of these swarms are thought to have continued to Chad.

About 120 km north of Zinder where the Southern Circuit swarms passed, groups of transiens and gregarious mature adults at densities of 1,000-3,000/ha and a few small swarms, mainly less than 1 km$^2$ in size, were seen laying eggs near Tanout (1505N/0850E) on 14 May. These locusts probably originated from local infestations that have persisted in the Air Mountains and parts of the Sahara during the past six months. Hatching commenced on the 22nd and first instar hoppers formed small groups and bands at densities up to 60 hoppers/m$^2$. Copulating, laying and hatching were still in progress at the end of the month in the Tanout area. Ground control operations treated 938 ha from 1 to 26 May.

In the Air Mountains, isolated immature and mature adults were seen in a few places during surveys on 14-20 May.

• **Forecast**

*Locust numbers will increase in the Tanout area as hatching and band formation continue during June. Fledging is expected to commence during the second half of June and groups and perhaps a few small swarms could form by early July. Additional breeding may be in progress in the Tahoua area where good rains fell during May. There is a low risk that a few small adult groups could appear in Tamesna and Air from Northwest Africa after mid-June as well as any new generation adults from the Tanout area.*

**Chad**

• **Situation**

On 9-11 May, a swarm with a density of 50 adults/m$^2$ was seen near Lake Chad at Bol (1327N/1440E). This swarm is thought to be part of the Southern Circuit migration.

• **Forecast**

*A few small Southern Circuit swarms could still be present and moving east along the ITCZ through the centre of the country. Unless good rains fall, these swarms are expected to continue to Sudan.*

**Cameroon**

• **Situation**

On 8 May, a swarm of transiens and gregarious immature adults reportedly arrived in the Goulfey region (ca. 1206N/1445E) in the extreme north from adjacent areas in Chad near the Logone River. The swarm moved south and reached Bogo (1044N/1436E) on the 10th and Yagoua (1020N/1514E) on the following day. On the 13th, it was seen moving east back to Chad. This swarm was probably part of the Southern Circuit migration.

• **Forecast**

*No significant developments are likely.*

**Nigeria**

• **Situation**

There was an unconfirmed report of aerial control being carried out against swarms in about mid-May in the province of Maiduguri (ca. 1153N/1316E) in the extreme north near the border with Niger, Chad and Cameroon.

• **Forecast**

*No significant developments are likely.*

**Senegal**

• **Situation**

No locusts were reported during the second decade of May.

• **Forecast**

*No significant developments are likely.*

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

• **Forecast**

*No significant developments are likely.*

**Algeria**

• **Situation**

During May, small infestations of late instar hopper groups and bands were present in the northeastern Sahara between El Oued (3323N/0649E) and Biskra (3448N/0549E) and, to a lesser extent, north of Ghardaia (3225N/0337E) and south of Khenchla (3526N/0706E). During the last decade of the month, most of the hoppers were fledging and forming small groups of immature adults. Ground operations treated 1,570 ha during May, most of which were fledglings in the last week of May. In the southern Sahara, local breeding occurred west of Tamanrasset in W. Amded (2250N/0427E) where fifth and sixth instar solitary hoppers, fledglings and immature adults were present during the last week of May. Similar breeding also occurred in one location about 150 km north of Tamanrasset.

• **Forecast**

*Locust numbers will decline in the spring breeding areas as immature adult groups move south towards the Sahel. Consequently, no further developments are expected in the spring breeding areas. Additional breeding may have occurred during May in parts of the southern and central Sahara that was difficult to detect. If so, any resulting adults and perhaps a few small groups that could form are expected to move towards the Sahel.*

**Morocco**

• **Situation**

During May, small residual patches of gregarious hoppers persisted in the northeast near the Algerian border and south of Oujda in a limited area between Touissit (3429N/0146W) and Guenfouda (3428N/0159W). By the end of the month, the hoppers had reached the fourth and fifth instar. Ground control operations treated 47 ha during May.

• **Forecast**

*Locust numbers will decline in the spring breeding areas as conditions become dry. No significant developments are likely.*

**Libyan Arab Jamahiriya**

• **Situation**

During May, scattered solitarious adults were present in the southeast at the Agricultural Project in Kufra (2411N/2315E). No locusts were seen during surveys carried out in the northwest along the border with Tunisia near Ghadames, Nalut and in the Al-Hamada Al-Hamra.

• **Forecast**

*No significant developments are likely.*

**Tunisia**

• **Situation**

No reports were received during May.

• **Forecast**

*Small-scale breeding that may have occurred during May could give rise to a few groups of adults in the southwest near Tozeur. If so, these groups are expected to move towards the Sahel.*

**CENTRAL REGION**

**Sudan**

• **Situation**

On 25 May, an immature swarm was reported in western Darfur near Geneina (1327N2230E) coming from the west. There were several more reports of immature swarms in the Geneina area between the 25$^{th}$ and 30$^{th}$ of May. The swarms were of medium density and varied in size from less than 1 km$^2$ to nearly 7 km$^2$. They appeared from the west, suggesting that they were probably the same swarms reported earlier in the month in Niger and Chad that were moving along the Southern Circuit in association with ITCZ. The swarms continued to move further east towards Northern Kordofan. Gregarious immature adults at densities of up to 200 adults/ha seen near Geneina at the same time were probably from the swarms.

• **Forecast**

*Although it is unlikely that large numbers of additional swarms will appear from the west in Darfur, there is a low risk that a few more small swarms could arrive up to about mid-June. The majority of the swarms that are currently present are expected to move further east to Northern Kordofan and some could cross the Nile River and reach the Kassala area. Any late-arriving swarms from the west could remain in Darfur. In any case, the swarms are likely to mature and may eventually lay eggs in areas where rainfall occurs. If so, hatching and band formation could commence by the end of the forecast period. Small groups of adults from southern Egypt may also appear in Northern Kordofan and along the Nile between Khartoum and Dongola and eventually breed. Intensive surveys should immediately commence in all of the above-mentioned areas.*

**Eritrea**

• **Situation**

No locusts were seen during surveys carried out between Asmara and Barentu (1508N/3736E) in the western lowlands on 16-17 May.

• **Forecast**

*There is a low to moderate risk that a few Southern Circuit swarms coming from the west could reach the western lowlands in June. If so, they are likely to mature and may lay eggs in areas where conditions are favourable. If so, hatching and band formation could start by the end of the forecast period.*

**Somalia**

• **Situation**

During the second week of May, scattered solitarious mature adults were present at a few places on the plains east of Burao (0931N/4533E) and on the coast near Maydh (1058N/4705E). No trace could be found of the unconfirmed locusts reported in April near Las Koreh.

• **Forecast**

*If rains fall, small-scale breeding may occur in a few places along the northern central coast near Maydh.*

**Ethiopia**

• **Situation**

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

• **Forecast**

*No significant developments are likely.*

**Djibouti**

• **Situation**

A single solitarious adult was seen near Lake Abhé (1115N/4149E) on 12 April. No locusts were reported during May.

• **Forecast**

*No significant developments are likely.*

**Egypt**

• **Situation**

During May, scattered immature transiens adults were present on the southern coastal plains of the Red Sea near Shalatyn (2308N/3535E) and in adjacent areas of the Red Sea Hills near Wadi Abraq. Similar infestations mixed with maturing solitarious adults were seen along Lake Nasser. Small-scale breeding occurred in agricultural areas west of Lake Nasser at Sh. Oweinat (2219N/2845E) where late instar hoppers and adults groups were present in crops. During the last decade of the month, breeding also occurred near Aswan in the Nokra Valley where solitarious and gregarious first and second instar hoppers were present at densities of 5-35 hoppers/$m^2$. Ground control operations treated 557 ha during May near Sh. Oweinat and Aswan.

• **Forecast**

*Small-scale breeding will continue near Aswan and Sh. Oweinat and a limited number of small adult groups could form. Some of these could eventually move south towards the summer breeding areas in the interior of Sudan.*

**Saudi Arabia**

• **Situation**

During the second half of April and throughout May, control operations continued in one area north of Jeddah on the central Red Sea coastal plains against hopper groups and bands, some at high densities, near Masturah (2309N/3851E). By mid-May, many of the hoppers had fledged. Operations treated about 5,900 ha during the period. No locusts were seen elsewhere on the coast or in the interior during surveys carried out in May.

• **Forecast**

*Any locusts that escaped survey and control operations on the Red Sea coast are likely to move across the Red Sea towards Sudan.*

**Yemen**

• **Situation**

During the first week of May, isolated breeding occurred on the Gulf of Aden coastal plains south of Ataq (1435N/4649E) where a single third instar hopper was seen. Scattered adults at densities of about 80/ha were seen copulating at one location in the interior northeast of Ataq near Shabwah (1522N/4700E). Isolated mature adults were also present on the coast near Aden (1250N/4503E). No locusts were seen during surveys carried out along the Red Sea coastal plains in May.

• **Forecast**

*Low numbers of adults may be present along the Red Sea coastal plains where they could breed in areas of recent rainfall. Low numbers of solitarious hoppers are likely to appear in a few places in the interior near Ataq as a result of small-scale breeding in those areas where ecological conditions are favourable.*

**Oman**

• **Situation**

No locusts were seen during surveys carried out in Batinah, Sharqiya, Dhahera, Dakhalia, Dofar and

Musandam regions in April and May.

• **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 May.

• **Forecast**

*No significant developments are likely.*

**Pakistan**

• **Situation**

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

• **Forecast**

*A few scattered adults may start to appear in the summer breeding areas in Tharparkar and Cholistan from mid-June onwards and eventually breed with the onset of the monsoon rains.*

**India**

• **Situation**

No locusts were seen during the last week of April and the first half of May.

• **Forecast**

*A few scattered adults may start to appear in the summer breeding areas in Rajasthan from mid-June onwards and eventually breed with the onset of the monsoon rains.*

**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.

**Locust web pages.** The Locust Group will launch an updated version of its web site in English and French on 15 June. The new address will be: www.fao.org/ag/locusts.

**Locust archives.** Desert Locust reports received by FAO from affected countries from 1952 to the present are available on a series of four CDs in PDF. Please contact the Locust Group for more details.

**Desert Locust booklet.** FAO has produced a booklet for the general public and donor community entitled Hunger in their wake: Inside the battle against the Desert Locust, available for download at: www.fao.org/news/global/locusts/pubs1.htm

**Publications on the Internet.** New FAO publications and meeting reports are available for downloading at www.fao.org/news/global/locusts/pubslist.htm:

- 24th session of the FAO Commission for Controlling the Desert Locust in South-West Asia (English)

**Assistance provided.** Details of assistance provided by donors to the current locust campaign are available on the Internet at: www.fao.org/news/global/locusts/donor/donor.htm.

**2005-2006 events.** The following meetings are tentatively scheduled:

- **CLCPRO.** 3rd session, Tripoli (Libya), 12-16 June
- **CRC.** 27th session of the Executive Committee, Khartoum (Sudan), 24-28 July
- **EMPRES/CR.** 6th Consultative Committee, Cairo (Egypt), 13-15 November
- **DLCC.** 39th Session, Rome, 5-9 December
- **EMPRES/CR.** 13th Liaison Officers meeting, Yemen, January 2006

- **EMPRES/WR.** 4th Liaison Officers meeting, Algiers, January/February 2006

## 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**

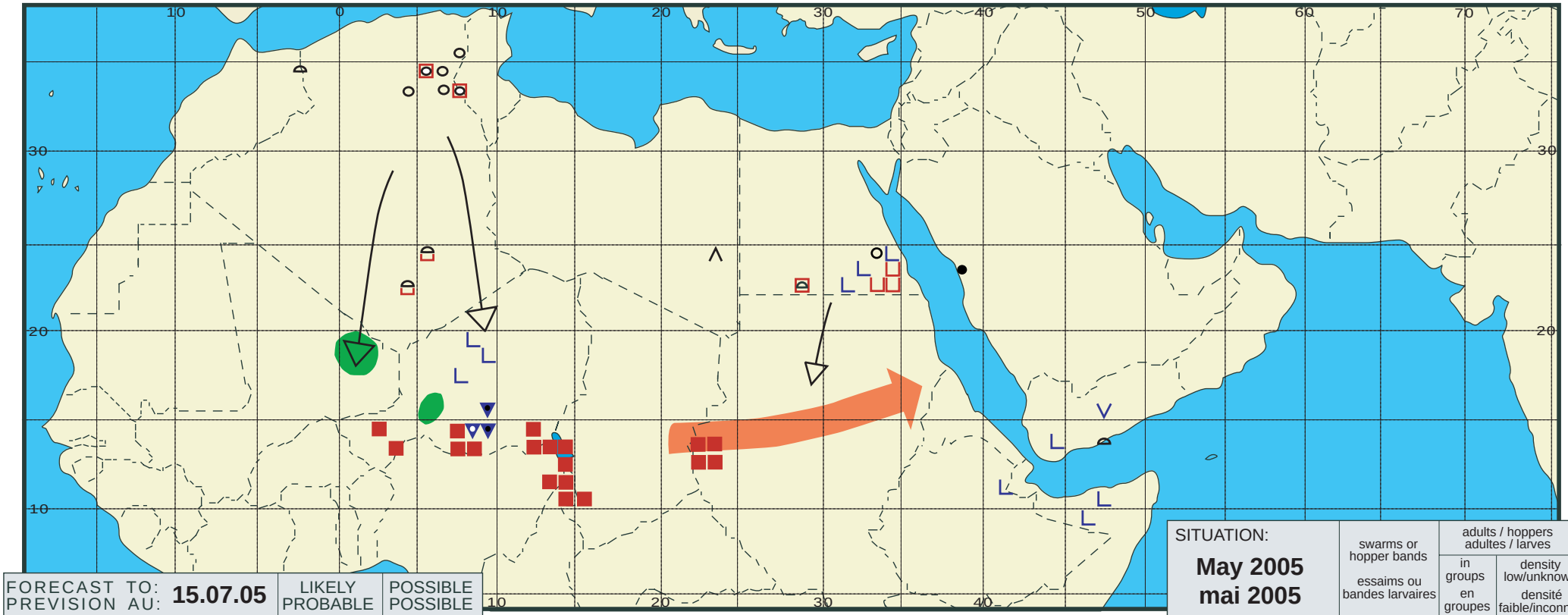
- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

**EASTERN**

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

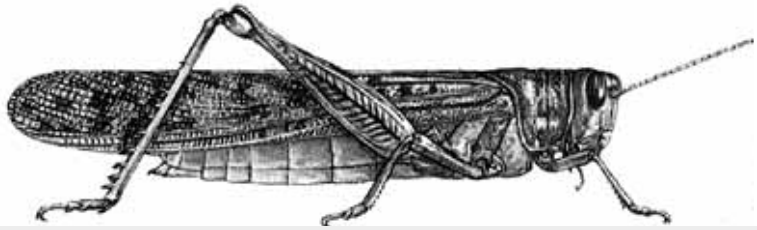
# Desert Locust Summary
# Criquet pèlerin - Situation résumée

**320**




| FORECAST TO: PREVISION AU: **15.07.05** | LIKELY PROBABLE | POSSIBLE POSSIBLE |
|---|---|---|
| favourable breeding conditions<br>conditions favourables à la reproduction | | |
| major swarm(s)<br>essaim(s) important(s) | | |
| minor swarm(s)<br>essaim(s) limité(s) | | |
| non swarming adults<br>adultes non essaimant | | |

| SITUATION: **May 2005 mai 2005** | swarms or hopper bands<br>essaims ou bandes larvaires | adults / hoppers adultes / larves | |
|---|---|---|---|
| | | in groups<br>en groupes | density low/unknown<br>densité faible/inconnue |
| immature adults<br>adultes immatures | ■ | □ | ⊔ |
| mature or partly mature adults<br>adultes matures ou partiellement matures | ◣ | ◺ | └ |
| adults, maturity unknown<br>adultes, maturité inconnue | ▲ | △ | ∧ |
| egg laying or eggs<br>pontes ou œufs | ▼ | ▽ | ∨ |
| hoppers<br>larves | ● | ○ | ◡ |
| hoppers & adults (combined symbol example)<br>larves et adultes (exemple symboles combinés) | ◘ | ◙ | ⊕ |



# DESERT LOCUST UPDATE

**FAO Emergency Centre for Locust Operations**

*(21 July 2005)*

## General Situation as of 21 July 2005

**The Desert Locust situation continues to be a cause of concern in Chad and western Sudan where breeding is in progress and there is a risk of an outbreak developing. Low numbers of new swarms could start to form in eastern Chad in the coming weeks. So far, very few locusts have been seen in southern Mauritania, northern Mali and Niger but good rains have fallen in most of these areas and ecological conditions are favourable for breeding. Seasonal forecasts suggest that good rainfall will continue in August and September. Consequently, increased vigilance and intensive survey operations should be maintained in the Sahel in West Africa and Sudan.**

The current situation is most serious in **Chad** and western **Sudan** where mainly third instar hopper bands are present. The extent of the populations in both countries is not known because of the difficulty to access many of the infested areas due to security concerns and flooding from recent rains. Nevertheless, breeding is in progress in eastern Chad (Ouaddai region) and in western Sudan (Western and Northern Darfur). It may also be underway in central and western Chad (Batha and Kanem regions) where unusually good rains have fallen over a large area and there are unconfirmed reports of hopper bands. To date, only limited ground control operations have been possible in both countries where 400 ha were treated in Chad so far this month and 750 ha in Sudan. Given the good rains and the difficulty of ground operations, there is a risk that an outbreak could develop.

Although the situation is calmer elsewhere in West Africa, it must be continually monitored especially in view of the good rains that have recently fallen in many of the summer breeding areas where residual locust populations are thought to be present. A few solitarious mature adults were reported in Tamesna and in the central Adrar des Iforas in northern **Mali** as well as south of Agadez in **Niger**. Low numbers of second instar hoppers persist in central Niger near Tanout where breeding previously occurred. No locusts were seen during surveys in northern **Senegal**, southern **Mauritania** or in the Air Mountains in Niger. No locusts were reported in Northwest Africa.

In northern **Ethiopia**, confirmation was received that at least one swarm laid eggs in the Amhara region in late June that hatched and a few very small hopper bands formed in early July. Control operations treated 16 ha. Since then, there have been no further reports of locusts. Scattered adults are present in the summer breeding areas in the interior of **Yemen** and in Rajasthan, **India** but no significant developments are likely in either country.

The most up-to-date information on the situation is available on the new FAO locust web site (www.fao.org/ag/locusts).

The FAO Desert Bulletin is issued monthly, supplemented by Updates during periods of increased Desert Locust activity, and is distributed by fax, e-mail, FAO pouch and airmail by the Locusts and Other Migratory Pests Group, AGP Division, FAO, 00100 Rome, Italy. It is also available on the Internet.
**Telephone:** +39 06 570 52420 (7 days/week, 24 hr)
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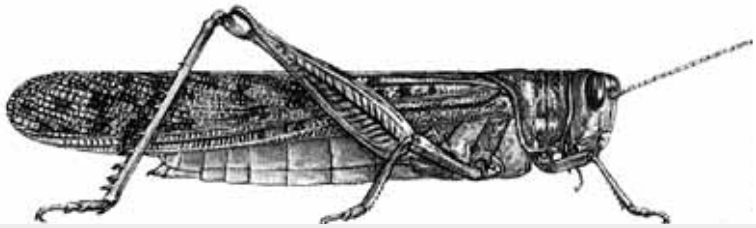

# DESERT LOCUST BULLETIN

**FAO Emergency Centre for Locust Operations** **No. 321**

*(5 July 2005)*

## General Situation during June 2005 Forecast until mid-August 2005

**Although there was an increase in the number of solitarious locusts in the summer breeding areas in the Sahel in West Africa during June, there was no indication of an invasion and substantial control operations were not necessary. Nevertheless, ground teams treated small areas in central Niger and southern Algeria where local breeding was in progress. In Sudan, several Southern Circuit swarms laid eggs in Darfur that hatched and hopper bands formed. A few other swarms moved across central Sudan and one may have reached northern Ethiopia. Elsewhere, insignificant infestations were present in southern Egypt, northern Somalia and in the interior of Saudi Arabia and Yemen. Small-scale breeding will occur during July and August in the Sahel in West Africa and Sudan and cause locust numbers gradually to increase.**

**Western Region.** During June, solitarious adults began to appear in southeastern **Mauritania**, northern **Mali** and in Tamesna, **Niger**. Small-scale breeding continued in central Niger near Tanout where control operations treated several hopper groups and bands. Hoppers and adults were also controlled in southern **Algeria** where small-scale breeding had occurred. The situation is less clear in **Chad** where breeding and control operations may have occurred in June. In Northwest Africa, control operations ended in the spring breeding areas and no further locusts have been seen. During the forecast period, locust numbers will continue to increase in the northern Sahel as small-scale breeding occurs in those areas that receive rainfall. Intensive surveys must be maintained on a regular basis in all areas throughout the summer.

**Central Region.** Several Southern Circuit swarms that arrived in late May from West Africa laid eggs in Darfur, **Sudan** in June and, by the end of the month, hatching and band formation had commenced in a few places. A small number of swarms moved across central Sudan from Darfur to eastern Sudan and one reportedly continued to northern **Ethiopia** where it dispersed. Locust numbers will increase during the forecast period in the summer breeding areas in Darfur and Kordofan, Sudan as more eggs hatch and hoppers form bands. Elsewhere, local breeding occurred near Aswan, **Egypt** and solitarious adults were present in a few farms in the Western Desert. Scattered solitarious adults were reported in the interior of **Saudi Arabia** and **Yemen**, and in parts of northern **Somalia**.

**Eastern Region.** No locusts were reported in the region and dry conditions prevailed except in parts of Rajasthan, **India** where pre-monsoon rains fell. No significant developments are likely during the forecast period.

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No. 321

DESERT LOCUST BULLETIN

## Weather & Ecological Conditions in June 2005

**Early rains fell in many of the summer breeding areas in the Sahel in West Africa and in a few places in Sudan during June. Consequently, ecological conditions for breeding were improving in many areas. Dry conditions prevailed elsewhere in the recession area.**

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) continued its seasonal progression towards the north in June, oscillating between 15N and 20N over West Africa, and reaching 25N over Mauritania at the end of the month. Early rains fell sporadically in parts of the summer breeding areas between Mauritania and Chad. Good rainfall occurred in southern and central Mauritania between Aleg, Tidjikja and Aioun El Atrous, and in the southeast near Nema and perhaps north of Oualata. At the end of the month, heavy rain fell in some of these places. In Mali, rain fell in the centre near Tombouctou, in the Adrar des Iforas in the north and perhaps in the Touadenit region in the northwest. Rains also fell in the Tamesna on both sides of the Mali/Niger border. In Niger, good rains fell in the south and in some places in the Air Mountains. Consequently, ecological conditions were improving in all of the above-mentioned areas. In southern Algeria, showers fell at times south of the Hoggar Mountains where green vegetation persisted in a few places. No significant rainfall was reported in Northwest Africa except in parts of western Libya near Ghat and the Al Hamada Al Hamra where light to moderate showers fell several times during the month.

In the **Central Region**, early seasonal rains fell at times in a few places in the summer breeding areas in Sudan during June, mainly in Darfur where vegetation was becoming green. Ecological conditions were drier in Western and Northern Kordofan, River Nile and White Nile States where less rain was reported. In Eritrea, light rains fell in a few places in the western lowlands but ecological conditions remained generally dry and unfavourable for breeding except in a few wadis. Light to moderate rain fell in the summer breeding areas in the interior of Yemen near Shabwah at mid-month. Dry and hot weather prevailed in northern Somalia where ecological conditions are not favourable for breeding.

In the **Eastern Region**, light rain fell during the first half of June in some places in the summer breeding area in Rajasthan, India and ecological conditions were improving. Dry conditions prevailed elsewhere in the region.

## Area Treated

More than 4,300 ha were treated in June compared to 1.6 million ha in June 2004, bringing the total area treated since the beginning of the upsurge (October 2003) to nearly 12.9 million ha.

| | |
|---|---|
| Algeria | 1,200 ha (4-7 June) |
| Chad *(1)* | 1,900 ha (16-30 June) |
| Egypt | 50 ha (4-14 June) |
| Morocco | 6 ha (2-3 June) |
| Niger | 263 ha (1-12 June) |
| Saudi Arabia *(1)* | 600 ha (June) |

*(1) unconfirmed or estimated*
*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**

Isolated mature adults first appeared in the summer breeding areas in the southeast between Nema (1636N/0715W) and the Malian border on 12 June. During the remainder of the month, scattered adults were seen at a few more places in the same area. No locusts were present between Kiffa and Aioun El Atrous or in the northwest between Akjoujt and Atar.

• **FORECAST**

*Small-scale breeding will occur in the southeast near Nema where hatching should commence during the second half of July and low numbers of hoppers will appear shortly thereafter. Breeding is expected to take place in other areas of the south, depending on the extent and distribution of rainfall in the coming weeks.*

**Mali**

• **SITUATION**

In the northern Adrar des Iforas, there was an

unconfirmed report from nomads of two mature swarms appearing from the north along the Algerian border on 1-2 June. On the 6th, groups of immature adults were reported between Kidal (1827N/0125E) and Tessalit (2011N/0102E). Scattered adults were seen elsewhere in the Adrar des Iforas and in the Timetrine during the remainder of the month.

• **Forecast**

*Small-scale breeding is expected to commence in areas of recent rainfall in parts of the Adrar des Iforas, the Tilemsi Valley, Timetrine and Tamesna. Intensive surveys should be carried out on a regular basis in all of the above-mentioned areas during the forecast period.*

**Niger**

• **Situation**

During June, small-scale breeding continued in the Tanout (1505N/0850E) area where mature solitarious and transiens adults, hatching and band formation were reported in several places. Early instar hopper band densities varied from 100-200 hoppers/$m^2$. By mid-month, some of the hoppers had reached third instar. No infestations were seen during surveys east of Tanout. Control operations treated 263 ha from 1 to 12 June.

In Tamesna, isolated immature adults were present northwest of Agadez (1700N/0756E) on 18 June, groups of gregarious-appearing mature adults were seen to the southwest on the following day, and isolated mature adults were seen near Agadez at the end of the month. No locusts were seen during surveys elsewhere in the Tamesna. The situation is less clear in the Air Mountains.

• **Forecast**

*Fledging is expected to commence early in the forecast period near Tanout and the new adults are likely to form several small groups. Some of the adults may remain in situ while others could move northwards to Tamesna and the Air Mountains. Small-scale breeding will occur in areas of recent rainfall in Tamesna and perhaps in parts of the Air.*

**Chad**

• **Situation**

A late report indicated that several Southern Circuit swarms appeared in the west (Chari-Baguirmi, Hadjer-Lamis and Guera) and southwest (Mayo-Kebbi) in early May and subsequently moved east across the country to Batha, Ouaddai and Wadi Fira regions during the first decade of June. Although most of the swarms were immature and low density (100-2,000 adults/ha), a few mature swarms and copulating adults were seen. During the second half of June, control operations reportedly treated 1,900 ha. Further details and clarification are awaited.

• **Forecast**

*Adults and perhaps a few small groups or swarmlets from the Southern Circuit migration may have laid eggs in areas of recent rainfall in parts of Kanem and Batha, and in the east between Abeche and Fada. Consequently, locust numbers could increase during the forecast period and hoppers may form a limited number of groups or bands. Intensive surveys should be carried out on a regular basis in all of the above-mentioned areas.*

**Senegal**

• **Situation**

No locusts were reported during June.

• **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**

During June, small-scale breeding occurred locally in the southern Sahara north of Tamanrasset (2250N/0528E) where up to 15 late instar solitarious hoppers and 20 immature adults were seen per bush during the first week. Control operations treated 1,200 ha from 4 to 7 June. No locusts were seen during surveys carried out in the Sahara as well as in the spring breeding areas in the north.

• **Forecast**

*Low numbers of locusts may persist in a few places in the south where ecological conditions are favourable. Small-scale breeding could occur in areas that receive rainfall.*

**Morocco**

• **Situation**

During the first two decades of June, low numbers of late instar hoppers, fledglings and immature adults persisted in the northeast near the Algerian border and south of Oujda in a limited area between Touissit (3429N/0146W) and Guenfouda (3428N/0159W). Ground control operations treated 6 ha on 2-3 June. No locusts were reported during the last decade of the month.

• **Forecast**

*No significant developments are likely.*

**Libyan Arab Jamahiriya**

• **Situation**

During June, no locusts were seen during surveys carried out in the southwest near Ghat and in the northwest near Mizda.

• **Forecast**

*No significant developments are likely.*

**Tunisia**

• **Situation**

No locusts were seen during survey carried out along the borders of Algeria and Libya in June.

• **Forecast**

*No significant developments are likely.*

**CENTRAL REGION**

**Sudan**

• **Situation**

During the first half of June, a limited number of mature Southern Circuit swarms and groups were seen copulating and laying eggs in western and Northern Darfur. A few more immature and mature swarms reportedly arrived in these areas from eastern Chad. To the east, local populations of mature solitarious adults were present in Northern Kordofan northwest of El Obeid (1311N/3010E) and Ed Dueim (1400N/3220E). Isolated immature adults were seen at two places along the Atbara River in River Nile State. A few swarms moved across central Sudan from Darfur, passing through the En Nahud (1246N/2828E) area in Western Kordofan on 12 June, continuing towards El Obeid on the 14th and reaching Gedaref (1401N/3524E) in eastern Sudan on the 16th. The swarm departed shortly thereafter towards the east.

During the second half of June, there was an unconfirmed report on the 18th of a swarm laying north of Zalingei (1251N/2329E) in Western Darfur. On the 23rd, hatching commenced near Geneina (1327N2230E) and first instar hoppers were forming medium density bands. Copulating and egg-laying at densities of up to 10 adults/$m^2$ continued to be reported in Northern Darfur.

• **Forecast**

*Locust numbers will increase as additional hatching and band formation are expected to occur in Western and Northern Darfur and commence in parts of Western and Northern Kordofan and perhaps in the Eastern Region near Gedaref and Kassala. Fledging is likely to start at the end of July in Darfur where new adults could form small groups and a few swarms from early August onwards. Solitarious breeding will probably occur in parts of Northern Kordofan and along the Atbara River.*

**Eritrea**

• **Situation**

No locusts were seen during surveys carried out in the western lowlands near the border with Sudan from 11 to 18 June.

• **Forecast**

*There is a low to moderate risk that a few Southern Circuit swarms or groups may have arrived in the western lowlands from adjacent areas of eastern Sudan. If so, the adults are likely to mature quickly and lay eggs that would hatch by mid July. Intensive surveys are suggested to monitor the situation.*

**Ethiopia**

• **Situation**

No locusts were seen during surveys carried out between Dire Dawa and the Somali border on 14-19 June. On the 23rd, there was an unconfirmed report of a locust swarm from eastern Sudan that split up and dispersed in the northern districts of Amhara and Tigray. Further details and confirmation are awaited.

• **Forecast**

*If the swarm is confirmed, there is a risk that the adults will lay eggs in the north that could hatch during the second half of July. The resulting hoppers could form small bands and fledge from mid-August onwards.*

**Djibouti**

• **Situation**

No locusts were seen during a survey carried out on the coast between Tadjourah (1147N/4253E) and Obock (1157N/4317E) as well as on the northern coastal plains between Obock and the Eritrean border on 11-12 June.

• **Forecast**

*No significant developments are likely.*

**Somalia**

• **Situation**

Scattered immature and mature solitarious adults were seen during surveys carried out on 11-23 June near the coast at Berbera (1028N/4502E) and on the escarpment between Burao (0931N/4533E) and

Erigavo (1040N/4720E). During the last week of the month, there were unconfirmed reports of swarms in the northeast near Ufeyn (1047N/4948E), Gardo (0930N/4910E), Elbu (0900N/4903E) and Dangorayo (0844N/4920E). So far, only solitarious Desert Locust adults have been found in these places.

• **FORECAST**

*Scattered adults will probably persist in a few places along the northwest coast and the escarpment if ecological conditions remain favourable for survival. No significant developments are likely.*

**Egypt**

• **SITUATION**

During June, hatchlings and early instar solitarious hoppers were present at densities of 2-10 hoppers/$m^2$ and mixed with immature adults in the Nokra Valley near Aswan. In the Western Desert, high-density groups of solitarious immature adults were reported on farms near Sh. Oweinat (2219N/2845E). Control operations treated 50 ha from 4 to 14 June.

• **FORECAST**

*A limited number of small adult groups could form in the Nokra Valley and eventually move towards Sh. Oweinat or perhaps south towards the summer breeding areas in the interior of Sudan.*

**Saudi Arabia**

• **SITUATION**

During June, scattered immature adults, probably produced from local breeding, were present in the northern interior about 100 km south of Hail (2731N/4141E). Control operations were carried out within an area of 600 ha. No locusts were reported along the Red Sea coastal plains during the month.

• **FORECAST**

*No significant developments are likely.*

**Yemen**

• **SITUATION**

Scattered immature adults were present during June in the interior near Marib at Al-Jubah (1513N/4520E).

• **FORECAST**

*Low numbers of adults may be present in parts of the summer breeding areas in the interior. Small-scale breeding could occur in those places where rainfall occurs and ecological conditions are favourable.*

**Oman**

• **SITUATION**

No locusts were seen during surveys carried out in Dakhalia and Dofar regions in June.

• **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 survey on 26 June in the southeast.

• **FORECAST**

*No significant developments are likely.*

**Pakistan**

• **SITUATION**

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

• **FORECAST**

*A few scattered adults may start to appear in the summer breeding areas in Tharparkar and Cholistan and breed on a small scale with the onset of the monsoon rains.*

**India**

• **SITUATION**

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

• **FORECAST**

*A few scattered adults may start to appear in the summer breeding areas in Rajasthan and breed once the monsoon rains have started.*

**Afghanistan**

• **SITUATION**

No reports received.

• **FORECAST**

*No significant developments are likely.*

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

- Report of the Desert Locust joint survey in the spring breeding areas of Pakistan and I.R. Iran, April 2005 (English)

**2005-2006 events.** The following meetings are tentatively scheduled:

- **CRC.** 27th session of the Executive Committee, Khartoum (Sudan), 24-28 July
- **EMPRES/CR.** 6th Consultative Committee, Cairo (Egypt), 13-15 November
- **DLCC.** 39th Session, Rome, 5-9 December
- **EMPRES/CR.** 13th Liaison Officers meeting, Yemen, January 2006
- **EMPRES/WR.** 4th Liaison Officers meeting, Algiers, January/February 2006

## 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

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

**CENTRAL**

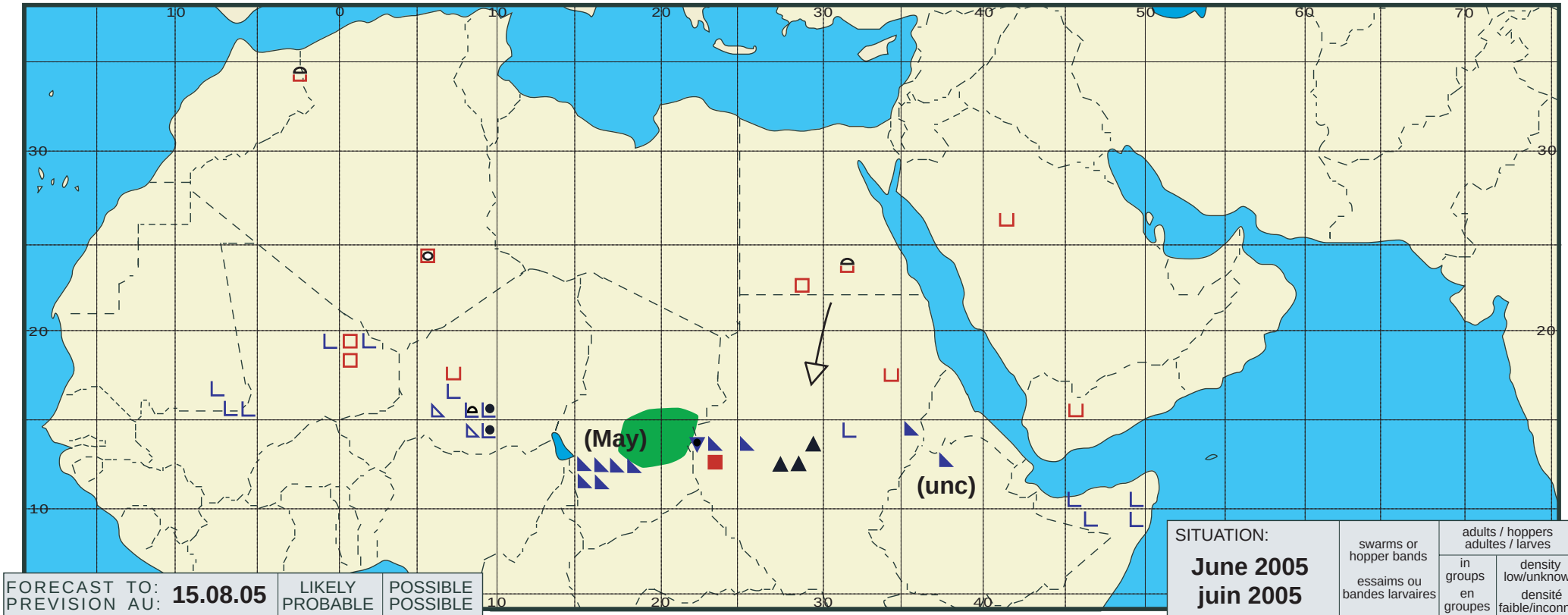
- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

**EASTERN**

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

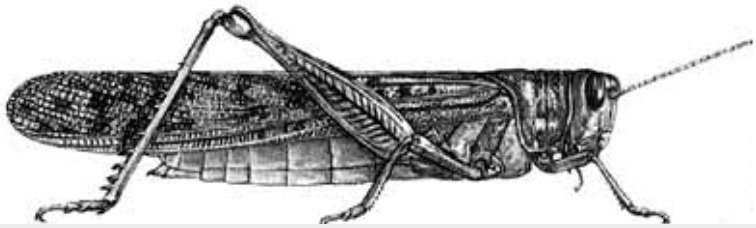
# Desert Locust Summary
# Criquet pèlerin - Situation résumée

**321**




| FORECAST TO: PREVISION AU: **15.08.05** | LIKELY PROBABLE | POSSIBLE POSSIBLE |
|---|---|---|
| favourable breeding conditions<br>conditions favourables à la reproduction | | |
| major swarm(s)<br>essaim(s) important(s) | | |
| minor swarm(s)<br>essaim(s) limité(s) | | |
| non swarming adults<br>adultes non essaimant | | |

| SITUATION: **June 2005 juin 2005** | swarms or hopper bands<br>essaims ou bandes larvaires | adults / hoppers adultes / larves | |
|---|---|---|---|
| | | in groups<br>en groupes | density low/unknown<br>densité faible/inconnue |
| immature adults<br>adultes immatures | ■ | □ | ⊔ |
| mature or partly mature adults<br>adultes matures ou partiellement matures | ◣ | ◺ | ∟ |
| adults, maturity unknown<br>adultes, maturité inconnue | ▲ | △ | ∧ |
| egg laying or eggs<br>pontes ou œufs | ▼ | ▽ | ∨ |
| hoppers<br>larves | ● | ○ | ⌓ |
| hoppers & adults (combined symbol example)<br>larves et adultes (exemple symboles combinés) | ◘ | ◙ | ⌓ |



# DESERT LOCUST BULLETIN

**FAO Emergency Centre for Locust Operations**

**No. 322**

*(3 August 2005)*

## General Situation during July 2005 Forecast until mid-September 2005

**The Desert Locust situation continues to be a cause for concern in central and eastern Chad and western Sudan. In addition, new infestations have been found in eastern Eritrea. Breeding is in progress in Chad and Sudan and there is a risk of outbreaks developing. Hopper bands formed during July in both these countries but only limited control operations could be carried out because of the difficulty of access to many of the infested areas. A few small swarms could form in Chad and Sudan during August and September followed by another generation of breeding during which locust numbers could increase rapidly. Despite unusually good rainfall and excellent breeding conditions elsewhere in the Sahel in West Africa, very few locusts have been seen so far in the summer breeding areas in southern Mauritania, northern Mali, Niger and western Chad. Seasonal forecasts suggest that good rainfall will continue in August and September. Consequently, increased vigilance and intensive survey operations should be maintained in all countries.**

**Western Region.** Unusually good rainfall and excellent breeding conditions caused hopper bands to form during July in **Chad**, primarily in the east of the country adjacent to Darfur, Sudan. Although many areas are difficult to access due to topography, flooding and insecurity, limited control operations over 1320 ha were undertaken. Given these difficulties and the likelihood of groups and maybe small swarms forming during August and September, there is a risk that an outbreak could develop. Very few locusts were present elsewhere in the summer breeding areas in the Sahel despite unusually good rainfall and suitable ecological conditions. During July, only isolated adults were seen in northern **Mali,** and in northern and central **Niger**. Similar scattered populations may be present in southern **Mauritania**. Nevertheless, intensive surveys must be maintained on a regular basis in all areas throughout the summer in order to detect the first signs of an increase in locust populations.

**Central Region.** Similarly to Chad, hatching and hopper band formation occurred during July in Western and Northern Darfur, **Sudan**. Ground control teams were able to treat nearly 1,726 ha in those areas that could be accessed. In **Eritrea**, two infestations were reported during the third decade of July, one in the North-East and the other south of Massawa. Small-scale breeding occurred in northern **Ethiopia** following the arrival in June of at least one Southern Circuit swarm. Consequently, a few small hopper bands formed and were treated but there were other areas where breeding may have occurred but could not be accessed on the ground. During the forecast period, small swarms could form in western Sudan. There is slight chance that a few small groups or swarmlets could also form in northern Ethiopia. Elsewhere, good rains that fell in the summer breeding areas in the interior of **Yemen** may cause a slight increase in locust numbers there in the coming months.

**Eastern Region.** Scattered locusts were reported in a few places in the summer breeding areas along both sides of the border between **India** and **Pakistan** where monsoon rains fell during July. Small-scale breeding will occur during the forecast period but 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

## Weather & Ecological Conditions in July 2005

**Good rains fell for a second consecutive month over large parts of the summer breeding area in the Sahel in West Africa and Sudan. Heavy rains also fell in the interior of Yemen and monsoon rains started along the Indo-Pakistan border. Consequently, ecological conditions improved and were favourable for breeding in most of these areas.**

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) oscillated between 16N and 20N over West Africa during July, with occasional northwards surges to 24N over northern Mali. This resulted in unusually good rainfall for the second consecutive month throughout the summer breeding areas in Mauritania, Mali, Niger and Chad. Consequently, ecological conditions improved or were already favourable for breeding within large areas of southern and central Mauritania, northern Mali (in the wadis of the Adrar des Iforas, in Tamesna and in the Timetrine), in Niger (Tamesna up to 18N and the central and eastern Air Mountains up to 19N) and in Chad (Batha, Kanem, Ouaddai and Wadi Fira regions). In some areas such as eastern Chad, the good rains have caused local flooding, making many places inaccessible to ground survey teams.

In the **Central Region**, ecological conditions improved in the summer breeding areas in Sudan because of good rainfall during July, mainly in the Darfur region. By the end of the month, breeding conditions were favourable over a large area of the interior from the Chad border to the Nile River and in the Kassala area. Khor Barka and several wadis leading to the Tokar Delta on the Red Sea coast were reported to be flooded, probably from rainfall in the Eritrean Highlands. Light to moderate rain fell in the western lowlands in Eritrea during the first half of July and ecological conditions were improving. Small patches of green vegetation were present in the interior of Yemen between Ataq and Shabwah in areas of recent heavy rainfall and runoff. Good rains also fell in the interior near Marib, and light to moderate rains fell along the northern and central parts of the Tihama coastal plains along the Red Sea.

In the **Eastern Region**, light to moderate rains associated with the annual monsoon fell in the summer breeding areas along the Indo-Pakistan border. Rainfall was heaviest in Rajasthan. Consequently, ecological conditions were improving or were already favourable for breeding.

## Area Treated

Nearly 12,000 ha were treated in July compared to 1.6 million ha in July 2004, bringing the total area treated since the beginning of the upsurge (October 2003) to nearly 12.9 million ha.

| | |
|---|---|
| Chad *(1)* | 4,272 ha (16-30 June) |
| | 1,320 ha (1-28 July) |
| Eritrea | 8,933 ha (25-30 July) |
| Ethiopia | 14 ha (11-14 July) |
| Sudan | 1,726 ha (1-30 July) |

*(1) updated information*

*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**

No locusts were seen during surveys carried out during the first two decades of July in the south and northwest. No locusts were reported during the third decade.

• **FORECAST**

*Scattered adults are likely to be present in parts of the south and centre of the country. Small-scale breeding is expected to occur in those areas that have received good rainfall recently, causing locust numbers to increase gradually.*

**Mali**

• **SITUATION**

During July, a few isolated mature adults were present in the northern Adrar des Iforas and in central Tamesna. Some of the adults seen in the Tamesna were transiens. No locusts were seen during surveys carried out in the Timetrine, the Tilemsi Valley and in the central Adrar des Iforas.

• **FORECAST**

*Small-scale breeding is likely to occur in parts of the Adrar des Iforas, Timetrine and Tamesna where good rains have fallen recently. Intensive surveys should be maintained during the forecast period.*

**Niger**

• **SITUATION**

During July, isolated immature and mature adults, some of them laying, as well as a few second and third instar hoppers were reported in areas of previous breeding near Tanout (1505N/0850E). Isolated mature adults were present south of Agadez (1700N/0756E). Isolated immature adults and third instar hoppers were also seen in the western Air. No locusts were seen during surveys in the Tamesna.

• **FORECAST**

*Small-scale breeding is likely to occur in Tamesna and parts of the Air Mountains where good rains have fallen recently. Intensive surveys should be maintained during the forecast period.*

**Chad**

• **SITUATION**

During the second half of June, substantial hatching reportedly occurred in the eastern part of the country (Ouaddai and Wadi Fira) and to a lesser extent in the centre (Batha) and west (Kanem). Hatchlings formed hopper bands at densities of up to 800-3,000 hoppers/$m^2$. By the end of the month, most of the hoppers had reached the second and third instar stage. Ground control operations treated 4,272 ha.

During the first decade of July, hopper bands continued to be reported in Ouaddai but there were also unconfirmed reports of hopper bands in Wadi Fira, Kanem and Batha. During the second decade, 10,000 ha were reported as infested in Batha and Kanem and 10 immature adults were seen in Ouaddai. On 25 July, surveys detected six fifth instar hopper bands of 0.5-1 ha in size in Batha, close to Ati (1315N/1828E); other last instar hopper bands, fledglings, immature and mature adults were also found in Batha during the third decade. Only one transiens adult was observed in Wadi Fira, and no locusts were reported in Borkou-Ennedi-Tibesti, Kanem and Lake up to the end of the month. Ground control operations treated 1,320 ha up to 28 July, mainly in Batha.

• **FORECAST**

*Small groups and probably a few small swarms are likely to form in Ouaddai, Wadi Fira and Batha, and to a lesser extent, in Kanem during August. As ecological conditions are favourable, adults are expected to stay, mature and lay eggs by the end of the forecast period. If this occurs, there is a risk that locust numbers could increase rapidly and an outbreak may develop.*

**Senegal**

• **SITUATION**

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

• **FORECAST**

*No significant developments are likely.*

**Burkina Faso**

• **SITUATION**

No locusts were reported up to 25 July.

• **FORECAST**

*No significant developments are likely.*

**Benin, 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**

During the first three weeks of July, no locusts were seen in the northern Sahara, near Tindouf in the west, along the Tunisia/Libya border in the east and in the southern Sahara near the Niger border.

• **FORECAST**

*Low numbers of locusts may be present and breeding on small scale is likely in a few places in the south, primarily between the Mali/Niger border and Tamanrasset, if ecological conditions are favourable.*

**Morocco**

• **SITUATION**

No locusts were reported during July.

• **FORECAST**

*No significant developments are likely.*

**Libyan Arab Jamahiriya**

• **SITUATION**

No locusts were reported during July.

• **FORECAST**

*No significant developments are likely.*

**Tunisia**

• **SITUATION**

The situation was reported to be calm during the first three weeks of July.

• **FORECAST**

*No significant developments are likely.*

**CENTRAL REGION**

**Sudan**

• **SITUATION**

During the first decade of July, medium-density mature gregarious adults were present in two locations in Northern Darfur and there were unconfirmed reports of swarms near El Fasher (1337N/2522E) as well as egg laying at 12 locations. Early instar hopper bands continued to form in Western Darfur near Geneina (1327N2230E) and egg-fields were reported nearby.

During the remainder of the month, small hopper bands, up to 1,000 $m^2$ in size, continued to develop in Western Darfur where many had reached the fledging stage by late July. In Northern Darfur, high-density first and second instar bands started forming during the third week and groups of gregarious adults were seen copulating. Scattered mature gregarious adults were found laying eggs at three places in Western Kordofan, west of En Nahud (1246N/2828E) and El Obeid (1311N/3010E) at mid-month.

During July, ground control operations treated 1,675 ha in the secure areas in Western Darfur and 51 ha in Northern Darfur. No locusts were seen in Northern Kordofan from El Obeid and Hamrat El Wuz (1500N/3010E) to the Nile River, on the western side of the Red Sea Hills and along the Red Sea coast, although locals reported locusts in the Tokar Delta. The situation is less clear in Northern Darfur, between El Fasher and En Nahud, and along the Gasht River north of Kassala because of access difficulties.

• **FORECAST**

*Breeding will continue in Western and Northern Darfur and, on a smaller scale, in Western Kordofan, causing locust numbers to increase. Solitarious breeding is likely to occur in Northern Kordofan and White Nile States and along the Atbara and Gasht Rivers. Current hopper band infestations in Darfur will fledge and small adult groups and a few small swarms could form in August and September.*

**Eritrea**

• **SITUATION**

No locusts were seen during surveys carried out in the western lowlands near the border with Sudan from 29 June to 15 July. During the third decade of July, infestations were reported in two separate areas, one in Mahmimet (1723N/3833E) in the North-East and the other in Bada, south of Massawa (1536N/3927E), and 8,933 ha have been treated. The infestations in Mahmimet consisted of all stages of hoppers and of one small hopper band at a density of up to 100-150/ $m^2$. Scattered fledglings, immature and mature laying adults and groups of these locusts were also present. The extent of these newly found infestations is being investigated.

• **FORECAST**

*No significant developments are likely in the western lowlands but monitoring is requested. It is not clear if the recently found infestations derived from local breeding or were produced by Southern Circuit swarms. The density of the infestations is relatively low with the result that only small adult groups and a few small swarms are likely to be produced during the forecast period.*

**Ethiopia**

• **SITUATION**

On 16 June, at least one small mature Southern Circuit swarm arrived in the northern region of Tigray and, on the next day, a swarm was reported in the adjacent region of Amhara. During the last decade of June, mature groups and swarms were seen in the Bombai area (1404N/3645E), Tigray region, some of them copulating and laying eggs. Although ground control operations were undertaken at five locations and treated about 100 ha, hatching occurred and about twenty small first and second instar bands formed by mid-July near Bombai. Control operations treated 14 ha. No locusts were seen during follow-up surveys in the surrounding areas up until 20 July but some areas were inaccessible by ground.

• **FORECAST**

*Hatching and the formation of small bands may have occurred in a few inaccessible places in Tigray and Amhara. If so, the hoppers would fledge and the adults could form a few small groups or swarmlets and mature during the forecast period.*

**Djibouti**

• **SITUATION**

No locusts were reported during July.

• **FORECAST**

*No significant developments are likely.*

**Somalia**

• **SITUATION**

Scattered immature solitary adults were seen on 12 July near Iredame (1030N/4930E). At the end of the second decade, a few isolated immature and mature adults were present in the Togdheer region (0900N/4600E). There were also unconfirmed reports

of locusts on the northeastern coast near Las Koreh (1110N/4812E) at the beginning of the third decade. Further details are awaited.

• **FORECAST**

*Scattered adults will probably persist in a few places along the northern coast and the escarpment if ecological conditions remain favourable for survival. No significant developments are likely.*

**Egypt**

• **SITUATION**

During July, no locusts were seen during surveys carried out in the Western Desert (Bahariya, New Valley and Sh. Oweinat), along the shoreline of Lake Nasser and further east in the Red Sea Hills in the Allaqi area.

• **FORECAST**

*No significant developments are likely.*

**Saudi Arabia**

• **SITUATION**

No locusts were reported during July in the interior regions of Riyadh, Al Jouf and Al Gassim.

• **FORECAST**

*No significant developments are likely.*

**Yemen**

• **SITUATION**

Scattered immature and mature adults, including a few transiens, were present at densities up to 163 adults/ha during July at six places in the interior between Ataq (1435N/4649E) and Shabwah (1522N/4700E).

• **FORECAST**

*Low numbers of adults may be present in parts of the summer breeding areas in the interior. Small-scale breeding could occur in those places where rainfall occurs and ecological conditions are favourable.*

**Oman**

• **SITUATION**

No locusts were seen during surveys carried out in Sharqiya and Dofar regions in July.

• **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 22 July in the southern coast near Jask and Bandar Abbas.

• **FORECAST**

*No significant developments are likely.*

**Pakistan**

• **SITUATION**

During the last week of June, isolated mature adults appeared at two locations in the Nara Desert near the Indian border.

During the first half of July, solitarious mature adults, at densities ranging from 6 to100 adults/ ha, appeared in the summer breeding areas at 31 locations in the Tharparkar, Nara and Cholistan Deserts near the border with India.

• **FORECAST**

*Small-scale breeding will occur in areas of recent rainfall in Tharparkar, Nara and Cholistan Deserts. Consequently, locust numbers will increase during the forecast period but will remain well below threatening levels.*

**India**

• **SITUATION**

No locusts were seen during surveys carried out during the second half of June.

Isolated mature adults and one mature group were seen in a few places in Rajasthan from 1 to 25 July.

• **FORECAST**

*Small-scale breeding will occur in areas of recent rainfall in Rajasthan. Consequently, locust numbers will increase during the forecast period but will remain well below threatening levels.*

**Afghanistan**

• **SITUATION**

No reports received.

• **FORECAST**

*No significant developments are likely.*

No. 322

DESERT LOCUST BULLETIN

## 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.

**Locust web pages.** The Locust Group has launched an updated version of its web site in English and French at: www.fao.org/ag/locusts.

**Locust archives.** Desert Locust reports received by FAO from affected countries from 1952 to the present are available on a series of four CDs in PDF. Please contact the Locust Group for more details.

**Desert Locust booklet.** FAO has produced a booklet for the general public and donor community entitled *Hunger in their wake: Inside the battle against the Desert Locust*, available for download at www.fao.org/ag/locusts (Publications).

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

- Report of the Desert Locust joint survey in the spring breeding areas of Pakistan and I.R. Iran, April 2005 (English)

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- **EMPRES/CR.** 6th Consultative Committee, Cairo (Egypt), 13-15 November
- **DLCC.** 39th Session, Rome, 5-9 December
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- very few present and no mutual reaction occurring;
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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 $m^2$

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- 1 - 20 mm of rainfall.

MODERATE

- 21 - 50 mm of rainfall.

HEAVY

- more than 50 mm of rainfall.

**OTHER REPORTING TERMS**

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- the process of reproduction from copulation to fledging.

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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.

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- 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**

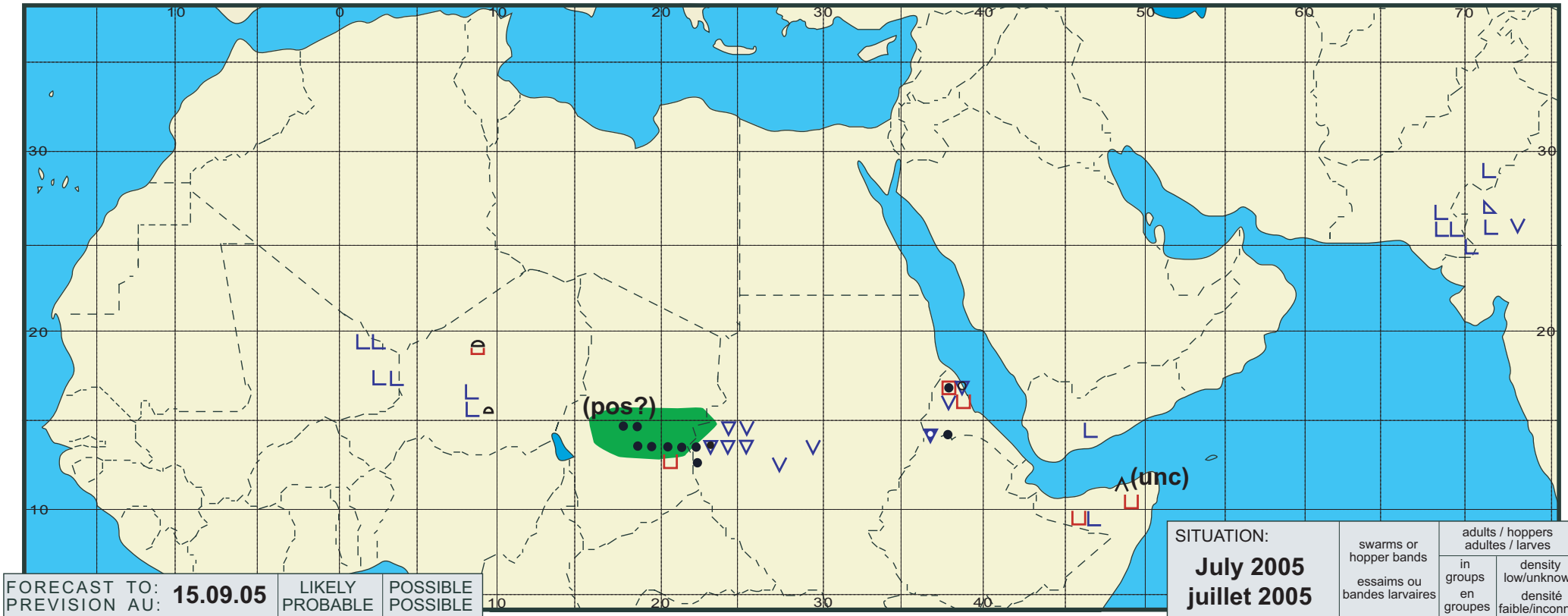
- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

**EASTERN**

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

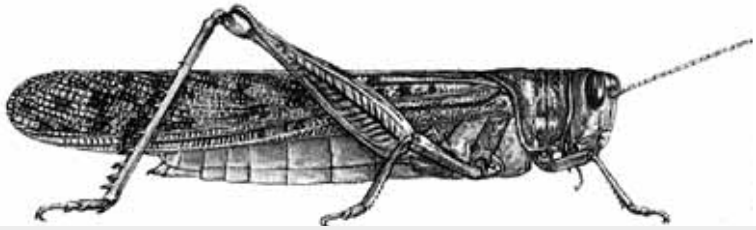
# Desert Locust Summary
# Criquet pèlerin - Situation résumée

**322**




| FORECAST TO: PREVISION AU: **15.09.05** | LIKELY PROBABLE | POSSIBLE POSSIBLE |
|---|---|---|
| favourable breeding conditions<br>conditions favourables à la reproduction | | |
| major swarm(s)<br>essaim(s) important(s) | | |
| minor swarm(s)<br>essaim(s) limité(s) | | |
| non swarming adults<br>adultes non essaimant | | |

| SITUATION: **July 2005 juillet 2005** | swarms or hopper bands<br>essaims ou bandes larvaires | adults / hoppers adultes / larves | |
|---|---|---|---|
| | | in groups<br>en groupes | density low/unknown<br>densité faible/inconnue |
| immature adults<br>adultes immatures | ■ | □ | ⊔ |
| mature or partly mature adults<br>adultes matures ou partiellement matures | ◣ | ◺ | L |
| adults, maturity unknown<br>adultes, maturité inconnue | ▲ | △ | ∧ |
| egg laying or eggs<br>pontes ou œufs | ▼ | ▽ | ∨ |
| hoppers<br>larves | ● | ○ | ⌓ |
| hoppers & adults (combined symbol example)<br>larves et adultes (exemple symboles combinés) | ◘ | ◙ | ⌾ |



# DESERT LOCUST UPDATE

**FAO Emergency Centre for Locust Operations**

*(25 August 2005)*

## General Situation up to 25 August 2005

**Most of the current Desert Locust activity is concentrated along both sides of the Chad/Sudan border and on the Red Sea coastal plains in northeast Eritrea. In the past few days, there have been a few unconfirmed reports of swarms in Chad. Ground control operations are in progress in the three countries. Local breeding is underway in the interior of Yemen. The situation is calmer in the western part of the Sahel in West Africa where only low numbers of solitarious adults have been detected in Mauritania, Mali and Niger. As ecological conditions are unusually favourable for breeding, increased vigilance and intensive survey operations should be maintained in the Sahel in West Africa and Sudan.**

The locust situation continues to be serious in **Chad** and western **Sudan** where breeding is in progress. Although helicopter surveys are underway in eastern Chad to confirm recent swarm reports, the extent of the infestations in the country is not well known because of the difficulty to access many of the infested areas. In Sudan, nearly 7,000 ha of hopper bands were treated during the first half of August in the few areas that can be accessed in Darfur. A limited number of small swarms could form during September in both countries. As long as ecological conditions remain favourable, the new swarms will probably remain in place, mature and eventually lay eggs, giving rise to a second generation of locusts.

Because of good rainfall during the past few months, unusually heavy local breeding has occurred on the northern coastal plains of the Red Sea in **Eritrea** near the Sudanese border. More than 11,000 ha of hopper bands and adults were treated by ground teams during the first half of August. Any locusts that are not controlled could form several small swarms in September that may spread into adjacent areas of Sudan. Local breeding is also underway, but on a smaller scale, in the interior of **Yemen**. In **Ethiopia**, ground teams treated 158 ha of residual hopper populations in Tigray.

Despite unusually good and widespread rainfall and ecological conditions, the situation continues to remain calm in **Mauritania**, **Mali**, **Niger** and southern **Algeria** where only low numbers of scattered solitarious adults have been found by surveys. Limited breeding has been reported in Mauritania and is probably in progress in the other countries. Control operations have not been required so far, except near Tamanrasset, Algeria where 320 ha were treated in mid August. Nevertheless, intensive ground surveys, supplemented by helicopters, are underway in the Sahel in order to detect the first signs that locust numbers might be increasing. This will probably become more evident once the rains end and vegetation starts to dry out.

Ground and aerial control operations have treated 12.9 million ha since the beginning of the current upsurge in October 2003.

The most up-to-date information on the situation is available on the new FAO locust web site (www.fao.org/ag/locusts).

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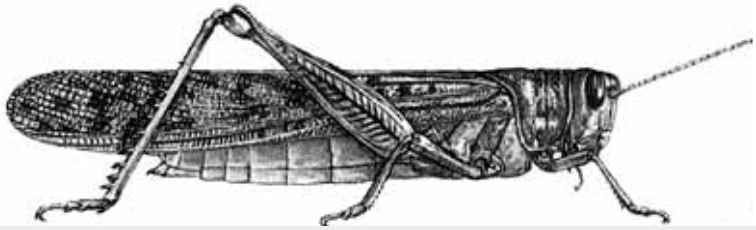

# DESERT LOCUST UPDATE

**FAO Emergency Centre for Locust Operations**

*(20 September 2005)*

## General Situation up to 20 September 2005

**So far this month, scattered solitarious locusts have been reported in Mauritania, Niger and Chad. Locust numbers increased slightly in northwest Mauritania and Niger where small-scale breeding is in progress. Very little rain has fallen in the past week in the Sahel and vegetation is starting to dry up in some places. Intensive ground and helicopter surveys should continue in the Sahel for several more weeks in order to detect the first signs that locust numbers might be increasing. Locusts will become easier to see as they concentrate in the remaining patches of green vegetation. Limited control operations are in progress in western Sudan and on the Red Sea coast in Eritrea. Locusts increased slightly on the Red Sea coast of Yemen and in the interior where good rains continue to fall. Consequently, intensive vigilance and survey operations are needed in the coming weeks in Yemen.**

Low numbers of solitarious mature adults started to appear in northwest **Mauritania** between Tidjikja and Akjoujt in late August. Small-scale breeding is underway in this area and, by mid September, isolated first and second instar hoppers were seen in a few places. Elsewhere, individual adults were reported in the southeast near Nema and at one site along the Senegal River Valley. No locusts were seen in adjacent areas of northern **Senegal**. Vegetation is starting to dry out in northern **Mali** and no locusts have been seen during helicopter and ground surveys carried out so far this month. In **Niger**, small-scale breeding is in progress in Tamesna and the western Air Mountains where scattered adults are present as well as some hoppers. During intensive ground and aerial surveys in **Chad**, only a few individual mature adults were seen in Kanem.

In late August, small adult infestations were seen in southwest **Libya** near Ghat. Since then, no further locusts have been reported there or in **Morocco** and **Algeria**.

During the first half of September, control operations in **Sudan** treated 159 ha of low to medium density very small fifth instar hopper bands near El Fasher in Northern Darfur. Individual adults were seen on the western side of the Red Sea Hills. In **Eritrea**, ground control operations treated less than 100 ha during the first half of September on the northern coastal plains of the Red Sea where small-scale breeding is in progress and second to fifth instar hoppers and solitarious adults are present. A few adults were seen copulating in this area as well as further south near the Danakil depression. No locusts were seen in the western lowlands in Eritrea, in **Ethiopia** and in northern **Somalia**. Isolated adults were maturing in **Yemen** along the central and northern Red Sea coastal plains and small-scale breeding is underway in the interior near Shabwah where patches of hoppers at densities of 15-50 hoppers/$m^2$ were seen.

In South-West Asia, control operations treated 355 ha of scattered hoppers and adults near Jaisalmer in the summer breeding areas in Rajasthan, **India** during the second week of September.

Ground and aerial control operations have treated 12.9 million ha since the beginning of the current upsurge in October 2003.

The most up-to-date information on the situation is available on the new FAO locust web site (www.fao.org/ag/locusts).

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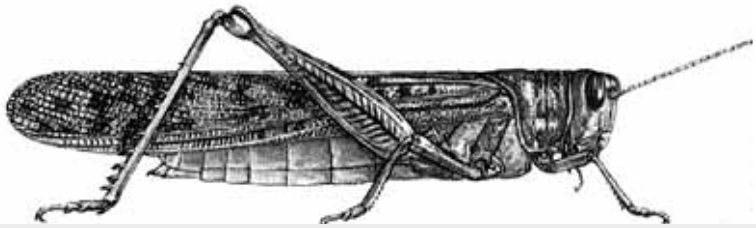

# DESERT LOCUST BULLETIN

**FAO Emergency Centre for Locust Operations** **No. 323**

*(1 Sept 2005)*

## General Situation during August 2005 Forecast until mid-October 2005

**During August, most of the Desert Locust activity was concentrated along the Chad/Sudan border and on the Eritrean Red Sea coast where hopper bands were present and developing. So far, one immature swarm has reportedly formed in eastern Chad while only adult groups have been seen in Darfur, Sudan. Although control operations are in progress in Sudan, a limited number of swarms could form during September and October in both countries. Some of these swarms are likely to move towards the winter breeding areas along the Red Sea coast while others could move towards Northwest Africa. A few additional swarms could form on the northern Eritrean coast where breeding is in progress. Although the situation remained calm in the Sahel despite unusually good breeding conditions, intensive survey operations should be maintained in the coming months.**

**Western Region.** Even though unusually good rain has fallen for the third consecutive month in the Sahel and ecological conditions are extremely favourable for breeding, very few locusts were detected by intensive aerial and ground surveys during August and the situation remains calm. Only isolated solitarious adults were present in southern **Mauritania**, northern **Mali** and **Niger**. The situation is less clear in **Chad** where a few hopper bands were present and a small swarm formed at mid-month, and there were several unconfirmed reports of other swarms. There is a chance that a few swarms will form in September and October along the Chad/Sudan border and some of these could move towards Northwest Africa. Local breeding occurred in southern **Algeria** and control operations were carried out in August. Intensive ground and aerial surveys should be maintained in the Sahel during September and October in order to detect any signs that locust numbers might be increasing. This will probably become more evident once the rains end and vegetation starts to dry out.

**Central Region.** Ground control operations were carried out against hopper band infestations in the secure areas of Darfur, **Sudan**. Some of the hoppers had fledged and formed groups of immature adults in a few places. So far, locusts have not been detected by surveys conducted elsewhere in the summer breeding areas in Sudan. As vegetation dries out, any swarms that form in Darfur could move towards the Atbara River and the Red Sea coast. In **Eritrea**, local breeding occurred on the northern coastal plains where rains started in April. Although ground control operations treated hopper bands in August, there is a risk that a few small swarms could form in September but these are likely to remain on the coast for winter breeding. In **Ethiopia**, control operations treated a few residual hopper populations in Tigray. Locust numbers could increase in the interior of **Yemen** where good rains fell and breeding occurred during August.

**Eastern Region.** Small-scale breeding began in August in a few places in the summer breeding areas in Rajasthan, **India** where low numbers of solitarious adults were reported. So far, breeding has not been detected in adjacent areas in **Pakistan**. No significant developments are likely during the forecast period.

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No. 323

DESERT LOCUST BULLETIN

## Weather & Ecological Conditions in August 2005

**Good rains fell for a third consecutive month over large parts of the summer breeding area in the Sahel in West Africa and Sudan. Good rains also fell along both sides of the southern Red Sea. Consequently, ecological conditions were favourable for breeding in all of these areas.**

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) oscillated around 19N over West Africa during August. Several successive storms moved west along the ITCZ from Chad to Mauritania mainly during the first half of the month and caused rain to fall in most of the recession breeding areas in Mauritania, Mali, Niger and Chad where vegetation conditions were already improving. Rainfall increased during the second decade in southwest Mauritania, the southern part of Tamesna in Niger and in eastern Chad. Moderate to heavy rains fell throughout the Adrar des Iforas in northern Mali. MODIS imagery suggests that green vegetation was present at mid-month in southern Mauritania (north of Boutilimit to Moudjeria to Boumdeid, Tamchaket and northeast of Oualata), in the wadis of the Adrar des Iforas in Mali, in central Tamesna on both sides of the Mali/Niger border, in western Air in Niger, and in eastern Chad as far north as Fada and Wadi Achim.

In the **Central Region**, moderate to heavy showers fell during August in Darfur while light to moderate rainfall occurred in Northern Kordofan, White Nile and Kassala provinces in Sudan. Good rains fell for at least a second consecutive month along the Red Sea coastal plains in northeastern Eritrea and in Yemen. Light to moderate rains fell in the summer breeding areas in the interior of Yemen between Marib and the Hadhramaut and flooding was reported near Shabwah. Good rains also fell along the Gulf of Aden coastal plains in Yemen. Ecological conditions were favourable for breeding in western and central Sudan, in the Tokar Delta, the Red Sea coastal plains in Eritrea and Yemen and in the interior of Yemen. Conditions were improving along the Gulf of Aden coastal plains.

In the **Eastern Region**, light to moderate rain associated with the monsoon fell in parts of the summer breeding area in Rajasthan, India and in adjacent areas in the Cholistan and Tharparkar Deserts in Pakistan during August. Rainfall was heavier in India than in Pakistan and, consequently, ecological conditions were more favourable for breeding there.

## Area Treated

Some 24,000 ha were treated in August compared to 125,000 ha in August 2004, bringing the total area treated since the beginning of the upsurge (October 2003) to 12.9 million ha.

| | |
|---|---|
| Algeria | 200 ha (28 July) |
| | 630 ha (1-20 August) |
| Eritrea | 11,117 ha (1-15 August) |
| Ethiopia | 158 ha (1-20 August) |
| Sudan | 12,289 ha (1-31 August) |

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**

No locusts were seen during surveys carried out in the south and northwest during the last decade of July and first decade of August. In mid-August, isolated mature adults were seen at a few places in Brakna, Adrar and Assaba regions and a few solitarious second instar hoppers were present east of Boumdeid (1726N/0950W).

• **FORECAST**

*Small-scale breeding is expected to occur in those areas that have received good rainfall recently, causing locust numbers to increase gradually. Low numbers of adults may start to appear in the northwest by the end of the forecast period. Intensive surveys should be maintained during the forecast period.*

**Mali**

• **SITUATION**

The situation during August remained nearly the same as in July. A few isolated immature and mature

adults persisted in the Adrar des Iforas and in central Tamesna. Some of the adults seen in the Tamesna were transiens. Individual locusts were seen during surveys carried out in the Timetrine.

• **Forecast**

*Small-scale breeding is likely to occur in parts of the Adrar des Iforas, Timetrine and Tamesna where good rains have fallen recently. Intensive surveys should be maintained during the forecast period.*

**Niger**

• **Situation**

The situation during August remained nearly the same as in July. Isolated mature adults were present near Agadez (1700N/0756E) and in a few places in Tamesna and on the western side of the Air Mountains. In the Sahelian zone, a few immature adults were seen near Tanout (1505N/0850E) and northeast of Gouré (1359N/1015E). No locusts were seen during extensive ground and aerial surveys elsewhere in the country.

• **Forecast**

*Small-scale breeding is likely to occur in Tamesna and parts of the Air Mountains where good rains have fallen recently. Intensive surveys should be maintained during the forecast period.*

**Chad**

• **Situation**

During the first week of August, hopper bands were present in Batha near Ati (1311N/1820E). At mid-month, a small swarm was seen southwest of Abeche (1349N/2049E) and hopper bands were present near the Sudan border and Adré (1326N/2214E). Although ground and aerial surveys found few locusts during the month, there were several unconfirmed reports by farmers of immature swarms moving north of Abeche in Ouaddai and near Arada (1501N/2040E) in Wadi Fira.

• **Forecast**

*Small groups and perhaps a few small swarms could form in Ouaddai and Wadi Fira and, to a lesser extent, in Batha and Kanem. As long as ecological conditions remain favourable, adults are likely to stay, mature and lay eggs. If this occurs, there is a risk that locust numbers could increase rapidly.*

**Senegal**

• **Situation**

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

• **Forecast**

*No significant developments are likely.*

**Burkina Faso**

• **Situation**

No locusts were reported during the first decade of August.

• **Forecast**

*No significant developments are likely.*

**Benin, 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**

During the last decade of July, ground control operations treated 10 ha of solitarious third instar hoppers at densities of 5-6 hoppers/bush and 190 ha of solitarious immature adult groups at densities of 20-25 adults/bush present west of Tamanrasset (2250N/0528E).

During the first two decades of August, groups of solitarious hoppers and immature adults continued to be reported west of Tamanrasset. By mid-month, the hoppers had reached the fifth instar stage and adult densities had declined to 400-800 adults/ha. Ground control operations treated 630 ha. No locusts were reported in these areas or in the northern Sahara, in the west near Tindouf and in the east along the Libyan border during the remainder of the month

• **Forecast**

*Low numbers of adults may persist in a few places in the south, primarily between the Mali/Niger border and Tamanrasset, if ecological conditions are favourable.*

**Morocco**

• **Situation**

No locusts were reported during August.

• **Forecast**

*No significant developments are likely.*

**Libyan Arab Jamahiriya**

• **Situation**

No reports were received during August.

• **Forecast**

*No significant developments are likely.*

**Tunisia**

• **SITUATION**

No reports were received during August.

• **FORECAST**

*No significant developments are likely.*

**CENTRAL REGION**

**Sudan**

• **SITUATION**

Late information indicated that groups of mature adults were present near El Fasher (1337N/2522E) in Northern Darfur during the last week of July.

During August, hopper bands of all instars and at densities up to 300 hoppers/m$^2$ persisted in Western Darfur near Geneina (1327N2230E) and, to a lesser extent, near Zalingei (1251N/2329E) as well as in Northern Darfur near El Fasher. Some of the hoppers had fledged and formed groups of immature adults in a few places. New areas of breeding were found in Southern Darfur near Nyala (1201N/2450E) where first instar hopper bands were seen early in the month. Ground control operations treated 11,597 ha in the secure areas in Darfur during August.

No locusts were seen elsewhere in the summer breeding areas except for solitarious immature adults at densities of 20 adults/ha along the Nile River north of Atbara (1742N/3400E) on 10 August.

• **FORECAST**

*Low numbers of small adult groups and swarms are likely to form in Darfur during the forecast period. As vegetation dries out, some of these infestations are likely to move west while others will move east towards the Atbara River and the Red Sea coast. Small-scale breeding may be in progress or will occur in the summer breeding areas in Northern Kordofan and White Nile States and along the Atbara and Gasht Rivers but it may be difficult to detect. There is a risk that adult groups could appear on the southern coastal plains of the Red Sea and in the Tokar Delta from adjacent areas in Eritrea.*

**Eritrea**

• **SITUATION**

During August, locust numbers increased on the northern Red Sea coastal plains because of local breeding in areas of recent rainfall. Hoppers of all instars at densities of 12-140 hoppers/m$^2$ were forming small groups and bands near Mehimet (1723N/3833E). By mid-month, most of the hoppers were third instar but some had already fledged and immature solitarious, transiens and gregarious adults were present. The infestations extended to the Sudanese border and were scattered within an area of about 45 km by 200 km. A second area of about 20 km$^2$ was similarly infested south of Mehimet at Shakat (1715N/3843E). First to third instar hoppers at densities of 10 hoppers/m$^2$ mixed with immature adults were present in a third area on the coast near Naro (1626N/3840E). Scattered mature adults were reported south of Massawa near Bada (1433N/4008E) in the northern Danakil depression. Control operations treated 11,117 ha from 1 to 15 August in all areas.

• **FORECAST**

*A few small adult groups or swarms are likely to form on the northern Red Sea coastal plains during September and October as the remaining hoppers fledge and become adults. Most of the adults are likely to stay in place, mature and eventually lay eggs in those areas where ecological conditions are favourable. The populations in the Danakil are likely to disperse due to dry and hot conditions.*

**Ethiopia**

• **SITUATION**

During the first two decades of August, ground control operations treated 158 ha of residual late instar hopper populations at two places in western Tigray. No locusts were seen elsewhere in the north during intensive surveys.

• **FORECAST**

*A few isolated adults may persist in Tigray. No significant developments are likely.*

**Djibouti**

• **SITUATION**

No locusts were seen during surveys carried out in the southeast near Ali Sabieh (1109N/4242E) on 10-11 August.

• **FORECAST**

*No significant developments are likely.*

**Somalia**

• **SITUATION**

No reports were received during August.

• **FORECAST**

*Scattered adults may be present in a few places along the northern coast and the escarpment and are likely to persist if ecological conditions remain favourable for survival. No significant developments are likely.*

**Egypt**

• **SITUATION**

During August, no locusts were seen during surveys

carried out in the Western Desert near Sh. Oweinat, along the shoreline of Lake Nasser, further east in the Red Sea Hills in the Allaqi area and on the Red Sea coast near Abu Ramad.

• **FORECAST**

*No significant developments are likely.*

**Saudi Arabia**

• **SITUATION**

No locusts were seen during surveys carried out on the Red Sea coastal plains near Jizan and the Yemeni border. No locusts were reported in other regions of the country.

• **FORECAST**

*No significant developments are likely.*

**Yemen**

• **SITUATION**

During August, scattered immature and mature adults persisted in the summer breeding areas in the interior near Ataq (1435N/4649E) and Shabwah (1522N/4700E). Local breeding occurred near Marib (1525N/4521E) where first to third instar hoppers were concentrated in a few places at densities up to 25 hoppers/$m^2$ on 30 ha.

• **FORECAST**

*Locust numbers will increase slightly as small-scale breeding continues in the summer breeding areas in the interior between Marib and the Hadhramaut. A few small adult groups could form by the end of the forecast period. Low numbers of locusts may be present and breeding in areas of recent rainfall on the Red Sea coastal plains.*

**Oman**

• **SITUATION**

No locusts were seen during surveys carried out along the Musandam peninsula in August.

• **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 21 August in the southern coast near Jask and Bandar Abbas.

• **FORECAST**

*No significant developments are likely.*

**Pakistan**

• **SITUATION**

During the second half of July, solitarious mature adults at densities up to 25 adults/ha were present in several places in the Tharparkar, Nara and Cholistan Deserts near the border with India.

During the first half of August, isolated mature adults persisted in the Cholistan Desert and, to a lesser extent, in the Nara and Tharparkar Deserts as well as in the Lasbela Valley west of Karachi.

• **FORECAST**

*Small-scale breeding will occur in areas of recent rainfall in Tharparkar, Nara and Cholistan Deserts. Consequently, locust numbers will increase during the forecast period but will remain well below threatening levels.*

**India**

• **SITUATION**

During August, isolated adults at densities up to 25 adults/ha were found at an increasing number of places in Rajasthan, primarily between Jodhpur (2618N/7308E) and Bikaner (2801N/7322E), and to a lesser extent near Barmer (2543N/7125E). Some adults were reported to be laying eggs northwest of Jodhpur.

• **FORECAST**

*Hatching will occur in areas of recent egg laying in Rajasthan and low numbers of hoppers will be present during the forecast period. Consequently, locust numbers will increase slightly but will remain well below threatening levels.*

**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.

**Locust web pages.** The Locust Group has launched an updated version of its web site in English and French at: www.fao.org/ag/locusts.

**Locust archives.** Desert Locust reports received by FAO from affected countries from 1952 to the present are available on a series of four CDs in PDF. Please contact the Locust Group for more details.

**Desert Locust booklet.** FAO has produced a booklet for the general public and donor community entitled Hunger in their wake: Inside the battle against the Desert Locust, available for download at www.fao.org/ag/locusts (Publications).

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

- Report of the Desert Locust joint survey in the spring breeding areas of Pakistan and I.R. Iran, April 2005 (English)

**2003-05 campaign evaluation.** An independent evaluation of the recent Desert Locust campaign will be carried out during the next few months. It will be overseen by a Steering Committee composed of donors and affected countries. The results of the evaluation are expected to be reported at the next session of the DLCC. Consequently, this session has been rescheduled to accommodate the evaluation.

**2005-2006 events.** The following meetings are tentatively scheduled:

- **EMPRES/CR.** 6th Consultative Committee, Cairo (Egypt), 13-15 November
- **EMPRES/CR.** 13th Liaison Officers meeting, Yemen, January 2006
- **EMPRES/WR.** 4th Liaison Officers meeting, Algiers, January/February 2006
- **DLCC.** 38th Session, Rome, 6-10 March

## 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**

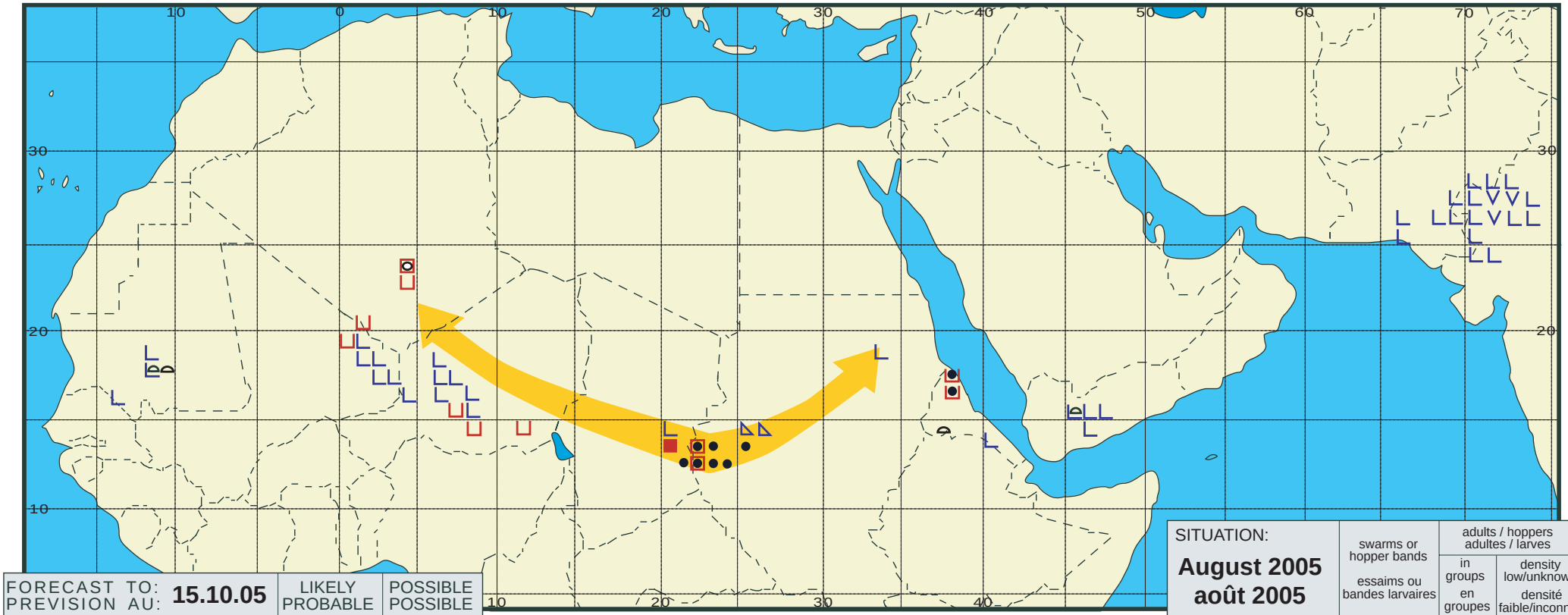
- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

**EASTERN**

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

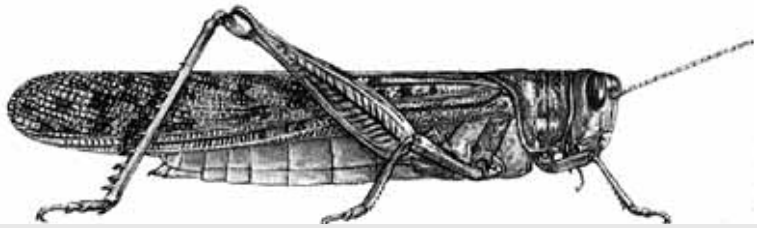
# Desert Locust Summary
# Criquet pèlerin - Situation résumée

**323**




| FORECAST TO: PREVISION AU: **15.10.05** | LIKELY PROBABLE | POSSIBLE POSSIBLE |
|---|---|---|
| favourable breeding conditions<br>conditions favourables à la reproduction | | |
| major swarm(s)<br>essaim(s) important(s) | | |
| minor swarm(s)<br>essaim(s) limité(s) | | |
| non swarming adults<br>adultes non essaimant | | |

| SITUATION: **August 2005 août 2005** | swarms or hopper bands<br>essaims ou bandes larvaires | adults / hoppers adultes / larves | |
|---|---|---|---|
| | | in groups<br>en groupes | density low/unknown<br>densité faible/inconnue |
| immature adults<br>adultes immatures | ■ | □ | ⊔ |
| mature or partly mature adults<br>adultes matures ou partiellement matures | ◣ | ◺ | L |
| adults, maturity unknown<br>adultes, maturité inconnue | ▲ | △ | ⋀ |
| egg laying or eggs<br>pontes ou œufs | ▼ | ▽ | ⋁ |
| hoppers<br>larves | ● | ○ | ◡ |
| hoppers & adults (combined symbol example)<br>larves et adultes (exemple symboles combinés) | ◘ | ◙ | ◒ |



# DESERT LOCUST BULLETIN

**FAO Emergency Centre for Locust Operations** **No. 326**

*(2 Dec 2005)*

## General Situation during November 2005 Forecast until mid-January 2006

**The Desert Locust situation remained generally calm during November. The most significant activity during the month was along the Indo-Pakistan border where small hopper bands and swarms formed. Although control operations were undertaken in both countries, there is a risk that a limited number of swarms will move from Rajasthan to western Pakistan while a few other small swarms could move further south or east in western India. Very few locusts remain in the summer breeding areas of the Sahel in West Africa except for western and central Mauritania where locust numbers increased slightly as small-scale breeding continued in November. Local breeding also occurred in southeast Algeria and southwest Libya. Small-scale breeding commenced in the winter breeding areas along the Red Sea in Sudan and Yemen. During the forecast period, locust numbers are expected gradually to increase along both sides of the Red Sea and in northern Mauritania.**

**Western Region.** Small-scale breeding occurred during November in western and central **Mauritania** for the third consecutive month. Consequently, there has been a gradual increase in locust numbers as well as a shift from solitarious to transiens locusts. During the second half of November, hoppers were concentrating in a few places and increasing in density and one hopper band was reported at the end of the month. Intensive surveys should be maintained to detect any further changes in locust populations. Scattered solitarious adults mixed with a few transiens adults were present in parts of northern **Mali** and isolated adults were reported in **Chad**. Local breeding continued in southeastern **Algeria** and occurred in southwest **Libya**. Ground control operations were undertaken in both countries.

**Central Region.** Small-scale breeding commenced during November in the winter breeding areas along the Red Sea coast in **Sudan** between Tokar Delta and the Eritrean border, and on the Red Sea and Gulf of Aden coastal plains in **Yemen**. Breeding is expected to occur on the northern coast in **Eritrea** where scattered adults were reported in November and will continue in Sudan and Yemen. Consequently, locust numbers will gradually increase in these countries during the forecast period. An immature swarm was seen in early November in West Darfur, Sudan but there were no further reports thereafter. There was also a report of immature gregarious adults near Taif, **Saudi Arabia** but only a few adults were seen during follow-up surveys. Dry conditions prevailed elsewhere in the region.

**Eastern Region.** Numerous small hopper bands were present during November in one area on both sides of the border in Rajasthan, **India** and Cholistan, **Pakistan**. Small immature swarms started to form early in the month and by the end of November, a few had moved out of the infested areas to eastern and central Rajasthan. Although ground control operations were undertaken in both countries, a few more small swarms are expected to form. Most of these swarms are likely to move west to the Indus Valley and eventually reach Baluchistan in western Pakistan while a few swarms could move east towards Delhi or south to Gujarat.

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. 326

DESERT LOCUST BULLETIN

## Weather & Ecological Conditions in November 2005

**Ecological conditions have become dry in most of the summer breeding areas in the Sahel in West Africa and Sudan, and along the Indo-Pakistan border. Breeding conditions improved in the winter breeding areas in northern Mauritania and in some places along the Red Sea coastal plains.**

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) continued its retreat southwards, oscillating between 10N and 5N in November. Consequently, vegetation was nearly dry in most of the summer breeding areas in the Sahel except for small patches of green vegetation in a few places in the Timetrine region in northern Mali, in parts of the Tamesna Plains on both sides of the Mali/Niger border, and in some of the wadis in eastern Chad as far north as Fada. Breeding conditions remained favourable in western and central Mauritania as a result of October rainfall. Ecological conditions improved in the winter breeding areas in northwest and northern Mauritania and in adjacent areas of Western Sahara where moderate rain fell on 20-21 November. So far, vegetation has become green only in relatively limited areas. During the last week of November, light rain fell in eastern Algeria and western Libya. Ecological conditions remained generally favourable in southern Algeria and in parts of southwest Libya.

In the **Central Region**, moderate to heavy rainfall was reported along the Red Sea coastal plains in Sudan between Tokar Delta and the Eritrean border during the last decade of November. Consequently, ecological conditions were favourable for breeding there and were improving on the northern coast of Eritrea near Mehimet where it rained in October and in early November. By contrast, dry conditions prevailed on the northern coast in Sudan and in adjacent areas in southeastern Egypt. In Yemen, moderate rains fell on the northern Red Sea coast near the Saudi Arabian border but vegetation remained dry on the border itself. Breeding conditions were more favourable further south on the coast between Midi and Bajil. In southern Yemen, vegetation was drying out along the Gulf of Aden coast but remained green further inland near the mountains. Dry conditions prevailed in Djibouti and northern Somalia.

In the **Eastern Region**, hot and dry weather prevailed during November. Consequently, vegetation was drying out in the summer breeding areas along both sides of the Indo-Pakistan border. This became increasingly evident by the end of the month when locusts started to leave breeding areas in India between the Rajasthan Canal and the Pakistani border.

## Area Treated

Nearly 8,300 ha were treated in November, mainly against hopper bands and swarms along the Indo-Pakistan border.

| | |
|---|---|
| Algeria | 905 ha (1-22 November) |
| India | 6,201 ha (November) |
| Libya | 100 ha (November) |
| Pakistan | 1,266 ha (16-30 October) |
| | 1,056 ha (1-15 November) |

*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 November, small-scale breeding continued for a third consecutive month west and east of Tidjikja (1833N/1126W) and northwest of Moudjeria (1752N/1219W) where hoppers of all instars were present mixed with fledglings and maturing adults. Breeding also continued in the Aftout Fai area north of Boutilimit (1732N/1441W) where third to fifth instar hoppers and adults were seen. Locust densities gradually increased in both areas and an increasing number of transiens hoppers were seen. By mid-month, solitarious and transiens hoppers were grouping at one location in Aftout Fai at densities of 8,400 hoppers/ha on 50 ha while densities reached up to 3,000 hoppers/ha near Tidjikja. On 30 November, there was a report at one place in the Aftout Fai of three small third to fifth instar hopper bands at densities of up to 5 hoppers/$m^2$ and of less than 500 $m^2$ in size. In the northwest, local breeding occurred in Inchiri where isolated mature adults

and a few individual second to fourth instar hoppers were present. In the north, a few mature solitarious adults were seen in Tiris-Zemmour near Zouerate (2244N/1221W) and Bir Moghrein (2510N/1135W).

• **Forecast**

*Unless further rainfall occurs, breeding is expected to come to an end near Tidjikja and hoppers and adults could concentrate and form small groups and perhaps a few small bands in the remaining green vegetation. On the other hand, breeding may continue in the Aftout Fai and Inchiri areas, and is expected to commence in Tiris Zemmour near Zouerate and Bir Moghrein. Consequently, locust numbers are likely to continue to increase further during the forecast period. Intensive surveys should be maintained in all of these areas.*

**Mali**

• **Situation**

During November, isolated immature and mature adults were present in a few places in Timetrine. Scattered solitarious hoppers and immature adults mixed with a few transiens adults were seen in a few places on the Tamesna Plains at densities up to 300 adults/ha. No locusts were seen in the Adrar des Iforas.

• **Forecast**

*Low numbers of locusts are expected to persist in the few places that remain green in Timetrine, the Adrar des Iforas and Tamesna.*

**Niger**

• **Situation**

No reports were received during November.

• **Forecast**

*Low numbers of locusts are likely to persist in the few places that remain green in Tamesna.*

**Chad**

• **Situation**

During the last decade of October, the situation was reported to be calm. Isolated solitarious mature adults were present during the first two decades of November in a few places in BET and Wadi Fira regions in the northeast. Further details are awaited.

• **Forecast**

*As vegetation continues to dry out, locust numbers will decline and only isolated adults are likely to persist in the few areas that remain green in Ouaddai and Fada.*

**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, Cote d'Ivoire, Gambia, Ghana, Guinea Bissau, Guinea, Liberia, Nigeria, Sierra Leone and Togo**

• **Forecast**

*No significant developments are likely.*

**Algeria**

• **Situation**

During November, local breeding continued in the southeast of the country east of Tamanrasset (2250N/0528E). Isolated breeding also occurred further south near the Niger border and in the eastern part of the country near Illizi (2630N0825E). Solitarious hoppers of all instars at densities up to 5 hoppers/bush, mixed with immature adults were present in these places. Ground control operations treated 905 ha from 1 to 22 November. No locusts were seen during surveys carried out in other parts of the country.

• **Forecast**

*As ecological conditions become unfavourable, locusts may concentrate in the few areas that remain green in the southeast, increase slightly in density and, at most, form a few small groups.*

**Morocco**

• **Situation**

No reports were received during November.

• **Forecast**

*Scattered adults may be present in parts of Western Sahara and small-scale breeding could occur in areas of recent rainfall.*

**Libyan Arab Jamahiriya**

• **Situation**

Small-scale breeding occurred during November in the southwest where solitarious first to third instar hoppers at densities of 3-10 hoppers/$m^2$ were seen near Ghat in Wadi Taselet (2432N/1057E) at mid-month. Ground control teams treated 100 ha.

• **Forecast**

*Low numbers of locusts are likely to persist and breed on a small scale in areas that remain favourable in the southwest.*

**Tunisia**

• **Situation**

No locusts were reported during October and November.

• **Forecast**

*No significant developments are likely.*

**CENTRAL REGION**

**Sudan**

• **Situation**

On 5 November, a medium-density immature swarm was seen in West Darfur near Zalingei at Nartite (1258N/2402E) covering an area of 150 ha. Due to insecurity, follow-up surveys could not be conducted.

On the Red Sea coastal plains, isolated mature adults were present in Tokar Delta and in a few places further south towards the Eritrean border during the first half of November. Isolated second to fourth instar hoppers were seen in the Tokar Delta and adult densities gradually increased to 450 adults/ha during the remainder of the month. Scattered mature adults were seen further north along the coast in the Arbaat area (1958N/3723E). No locusts were seen elsewhere on the northern coastal plains or in the adjacent areas of the interior along Wadi Oko/Diib.

• **Forecast**

*Small-scale breeding will continue along the Red Sea coastal plains between Suakin and the Eritrean border. Limited breeding could occur in a few places on the coast north of Port Sudan. Consequently, locust numbers are likely to increase slightly along the coast during the forecast period.*

**Eritrea**

• **Situation**

Isolated immature and mature adults were present during November on the Red Sea coastal plains in the north near Mehimet (1723N/3833E) and in the centre near Wakiro (1550N/3917E).

• **Forecast**

*Small-scale breeding is expected to occur in a few places along the Red Sea coast between Massawa and the Sudanese border. Consequently, locust numbers are likely to increase slightly during the forecast period.*

**Ethiopia**

• **Situation**

No locusts were seen during surveys carried out in the Dire Dawa and Somali regions between the Awash Valley and the Somali border on 11-16 November.

• **Forecast**

*No significant developments are likely.*

**Djibouti**

• **Situation**

No locusts were reported during November.

• **Forecast**

*No significant developments are likely.*

**Somalia**

• **Situation**

No locusts were seen on the plateau between Boroma (0956N/4313E) and Burao (0931N/4533E) during surveys carried out on 18-24 November.

• **Forecast**

*No significant developments are likely.*

**Egypt**

• **Situation**

No locusts were seen during surveys carried out in November along both sides of Lake Nasser, on the Red Sea coast and in the adjacent interior between Marsa Alam and the Sudanese border.

• **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**

On 2 November, there was an unconfirmed report of immature gregarious adults near Taif (2115N/4021E) that may be linked to the unconfirmed swarm last month. However, only isolated immature solitarious adults were seen nearby at one location during follow-up surveys. No locusts were seen elsewhere in the region.

• **Forecast**

*Isolated adults may be present on the southern coastal plains of the Red Sea near Jizan and small-scale breeding could occur in areas where conditions are favourable.*

**Yemen**

• **Situation**

During November, solitarious immature and mature adults were present in three areas on the northern and central Red Sea coast: between Hodeidah (1450N/4258E) and Bajil (1458N/4314E), west of Suq Abs (1600N/4312E) and near Midi (1619N/4248E).

Isolated fourth instar hoppers were seen near Bajil on the 6th.

On the Gulf of Aden coastal plains, solitarious second to fourth instar hoppers, at densities up to 5 hoppers/$m^2$, mixed with a few adults were present at two places near Zinjibar (1306N/4523E) on 26 November, and isolated adults were present near Lahij (1303N/4453E).

• **FORECAST**

*Small-scale breeding will continue in a few places along the Red Sea and Gulf of Aden coasts causing locust numbers to increase slightly. The extent of the breeding will depend on rainfall that occurs during the forecast period.*

**Oman**

• **SITUATION**

No locusts were seen in early November in the Dhahera region 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 near Bander-e Lengheh (2634N/5452E) and Jask (2540N/5746E) on 26 October and again on 18-19 November. During the latter survey, locusts were also absent near Bushehr (2854N/5050E).

• **FORECAST**

*No significant developments are likely.*

**Pakistan**

• **SITUATION**

During the second half of October, some 250 small hopper bands of all instars were present along the border with India east of Rahimyar Khan (2822N/7020E) in the Cholistan Desert where breeding occurred in September and early October. Ground control teams treated 1,266 ha. Scattered mature solitarious adults at densities of up to 20 adults/ha were reported in a few places in the Nara, Tharparkar and Cholistan deserts.

During the first half of November, a 1 $km^2$ immature swarm was reported in the Cholistan Desert near the Indian border at Chalanwala (2801N/7152E) on the 12th. Ground control operations treated 1,056 ha in nearby areas against about 140 third to fifth instar hopper bands and four groups of immature adults.

• **FORECAST**

*An increasing number of adults including a few groups and small swarms are likely to appear from adjacent areas of Rajasthan and progressively move towards the west through the central Indus Valley and eventually reach Baluchistan.*

**India**

• **SITUATION**

During the first half of November, fourth and fifth instar hopper bands and immature adult groups and swarms were reported at 123 locations in Jaisalmer and Bikaner districts. The infestations were concentrated in a relatively small area of about 100 km by 50 km between the Rajasthan Canal and the Pakistani border. The hopper bands were very small with densities of 20-50 hoppers/$m^2$ while the swarms were less than 1 $km^2$ in size with densities of 15-25 adults/$m^2$. By the end of the month, most of the hoppers had reached fifth instar. A few small immature swarms were reported about 200 km east near Nagaur (2712N/7348E) on 22-25 November and about 75 km south near Jaisalmer (2652N/7055E) on the 30th. This suggests that adults are starting to move out of the infested areas as ecological conditions become dry. Ground control operations treated 6,201 ha during November.

• **FORECAST**

*Additional small adult groups and swarms are expected to form during the first half of December in currently infested areas. As ecological conditions continue to dry out, these populations will probably move towards the west although there is a slight risk that a few could move northeast towards Punjab, east towards Delhi, or south towards Gujarat, depending on the wind. In any case, the situation should improve by the end of the forecast period.*

**Afghanistan**

• **SITUATION**

No reports received.

• **FORECAST**

*No significant developments are likely.*

No. 326

DESERT LOCUST BULLETIN

## 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)

**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.

**2005-2006 events.** The following meetings are tentatively scheduled:

- **EMPRES/CR.** 13th Liaison Officers meeting, Sana'a (Yemen), 11-15 December 2005
- **EMPRES/WR.** 4th Liaison Officers meeting, Algiers (Algeria), 25 February - 1 March (tentative)
- **EMPRES/WR.** Steering committee meeting, Algiers (Algeria), 4-6 March (tentative)
- **CRC.** 25th Session, Dubai (UAE), 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

**John Francis Ambrose.** It is with deep regret that we announce the death of Captain John Francis Ambrose in late November. Captain Ambrose played a key role in the operational capacity of the International Red Locust Control Organization for Central and Southern Africa (IRLCO-CSA) for many years and, in the last few months, acted as Director of the Organization. We would like to express our sincere condolences to his family and his government.

## Glossary of terms

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

**NON-GREGARIOUS ADULTS AND HOPPERS**

ISOLATED (FEW)

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

SCATTERED (SOME, LOW NUMBERS)

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

GROUP

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

**ADULT SWARM AND HOPPER BAND SIZES**

VERY SMALL

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

SMALL

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

MEDIUM

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

LARGE

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

VERY LARGE

- swarm: 500+ $km^2$ • band: 50+ ha

## RAINFALL

**LIGHT**

- 1 - 20 mm of rainfall.

**MODERATE**

- 21 - 50 mm of rainfall.

**HEAVY**

- more than 50 mm of rainfall.

## OTHER REPORTING TERMS

**BREEDING**

- the process of reproduction from copulation to fledging.

**SUMMER RAINS AND BREEDING**

- July - September/October

**WINTER RAINS AND BREEDING**

- October - January/February

**SPRING RAINS AND BREEDING**

- February - June/July

**DECLINE**

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

**OUTBREAK**

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

**UPSURGE**

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

**PLAGUE**

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

**RECESSION**

- period without widespread and heavy infestations by swarms.

**REMISSION**

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

## 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**

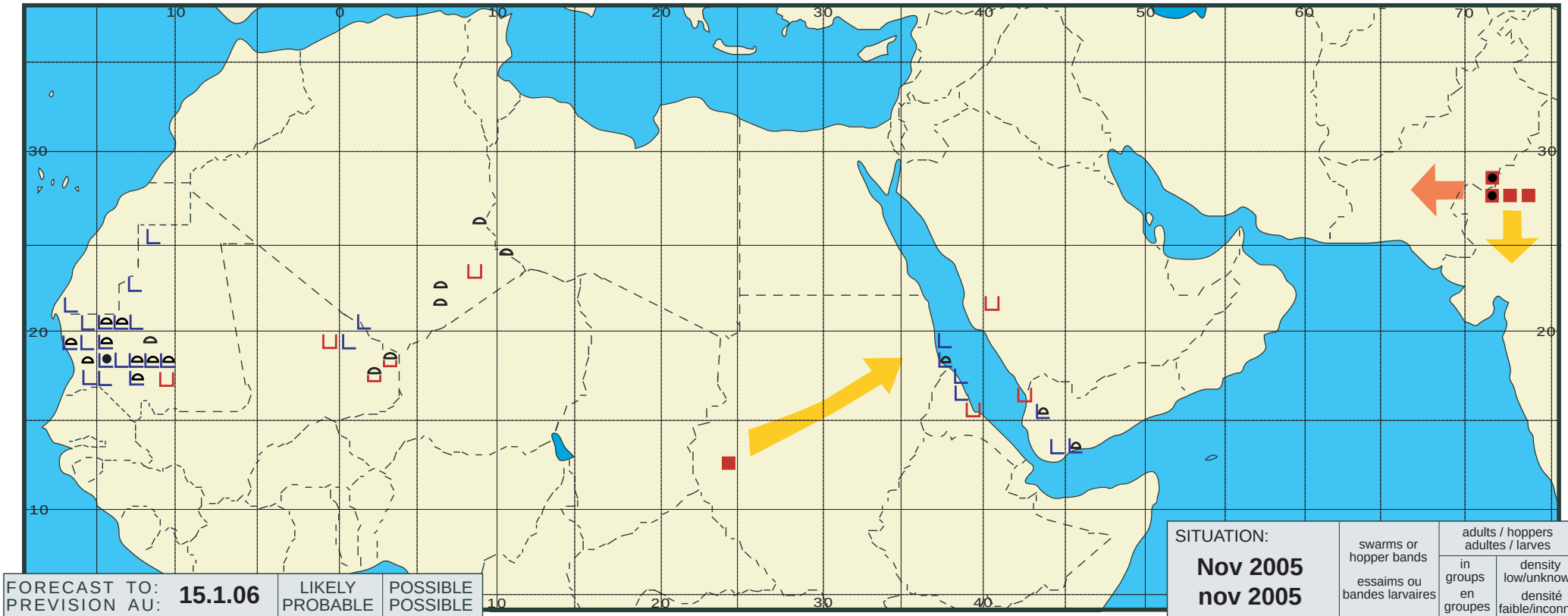
- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

**EASTERN**

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

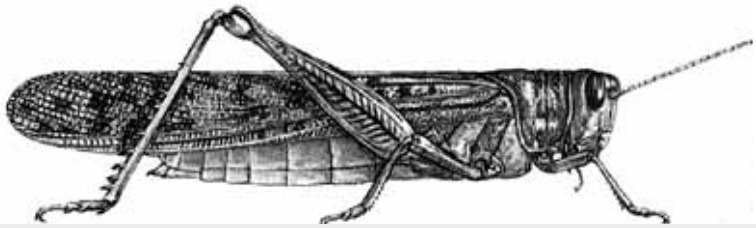
# Desert Locust Summary
# Criquet pèlerin - Situation résumée

**326**




| FORECAST TO: PREVISION AU: **15.1.06** | LIKELY PROBABLE | POSSIBLE POSSIBLE |
|---|---|---|
| favourable breeding conditions<br>conditions favourables à la reproduction | | |
| major swarm(s)<br>essaim(s) important(s) | | |
| minor swarm(s)<br>essaim(s) limité(s) | | |
| non swarming adults<br>adultes non essaimant | | |

| SITUATION: **Nov 2005**<br>**nov 2005** | swarms or hopper bands<br>essaims ou bandes larvaires | adults / hoppers adultes / larves | |
|---|---|---|---|
| | | in groups<br>en groupes | density low/unknown<br>densité faible/inconnue |
| immature adults<br>adultes immatures | ■ | □ | ⊔ |
| mature or partly mature adults<br>adultes matures ou partiellement matures | ◣ | ◺ | L |
| adults, maturity unknown<br>adultes, maturité inconnue | ▲ | △ | ∧ |
| egg laying or eggs<br>pontes ou œufs | ▼ | ▽ | ∨ |
| hoppers<br>larves | ● | ○ | ◞ |
| hoppers & adults (combined symbol example)<br>larves et adultes (exemple symboles combinés) | ◘ | ◙ | ⊕ |



# DESERT LOCUST BULLETIN

**FAO Emergency Centre for Locust Operations** **No. 324**

*(3 Oct 2005)*

## General Situation during September 2005 Forecast until mid-November 2005

**During September, small-scale breeding occurred in parts of the summer breeding area in the Sahel in West Africa, causing locust numbers to increase slightly but still remaining relatively low and insignificant. Although rains declined in many of these areas and vegetation started to dry out by the end of the month, survey operations need to be maintained to check whether locust populations concentrate in the areas remaining green. Limited control operations were carried out against small infestations in southern Algeria and southwest Libya. In the Central Region, control teams treated hopper bands in Darfur, Sudan while operations against hoppers and adults came to an end on the Red Sea coast of Eritrea. During the forecast period, locusts are likely to migrate to the Sudanese Red Sea coast. Intensive monitoring is required in the interior of Yemen where small-scale breeding continued for a second month and control operations were conducted. In South-West Asia, summer breeding along the Indo-Pakistan border has led to an increase in locusts and a swarm reportedly formed.**

**Western Region.** Rainfall declined during September within much of the summer breeding areas in the Sahel and vegetation started to dry out except in western **Mauritania** and in **Niger** where small-scale breeding occurred. So far, breeding has not been reported in northern **Mali** and has probably ended in **Chad**. In both countries, only scattered adults were present during September. Local breeding occurred in southern **Algeria** and control operations were carried out for the second consecutive month. Adults were seen copulating in mid-September in southwest **Libya**. During the forecast period, vegetation will continue to dry out in the Sahel and adults are likely to concentrate in the few areas that remain green. This may cause some small groups to form in Niger, while in Mauritania adults will probably move towards the northwest (Inchiri) and, if rainfall occurs, breed on a small scale. There is a low risk that a few adult groups could move towards Northwest Africa from western Sudan. Intensive ground and helicopter surveys will be maintained in the Sahelian countries until the end of October.

**Central Region.** Ground control operations continued against hopper bands until at least mid-September in the secure areas of Darfur, **Sudan**. As vegetation dries out in October, adult groups could form in Darfur and most of these are likely to move towards the winter breeding areas along the Sudanese Red Sea coast while a few could move west towards Northwest Africa. Although control operations ended in mid-September on the northern Red Sea coast in **Eritrea** where breeding previously occurred, another generation of breeding could occur, if good rains fall, and locust numbers could increase again. Summer breeding should soon come to an end in the interior of **Yemen** where limited control operations were undertaken. Adults and any groups that form are expected to move to the winter areas along the Red Sea coastal plains in Yemen and eventually breed. No locusts were reported elsewhere in the Region.

**Eastern Region.** Locust numbers increased in the summer breeding areas along the Indo-Pakistan border during September. Control teams in Rajasthan, **India** treated nearly 1,900 ha of gregarizing hoppers, and one swarm reportedly formed on the border with Pakistan. Smaller-scale breeding occurred in adjacent areas in **Pakistan**. Breeding may continue for a few

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more weeks but once vegetation starts to dry out, locusts are likely to concentrate and form several small adult groups and perhaps a few small swarms. By the end of the forecast period, an increasing number of adults are likely to move west towards the southern Indus Valley in Pakistan.

## Weather & Ecological Conditions in September 2005

**Summer rains began to decline in mid-September in parts of the summer breeding areas in West Africa and Sudan and vegetation was drying up. Good rains continued to fall in Yemen along the Red Sea coast and in the interior. Breeding conditions remained favourable along the Indo-Pakistan area.**

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) started its seasonal retreat towards the south during September, oscillating around 15N over West Africa and occasionally reaching 27N over southwest Algeria. During the first decade, moderate rains fell in southern Algeria near the Malian border as well as in the southeast near the Libyan border early in the month. Good rains also fell in northwest and southern Mauritania, northern Mali, in parts of Tamesna, Niger, and in Chad. Very little rain fell during the remainder of the month in these areas except for southern Mauritania. By the end of the month, vegetation had started to dry up in northern Mali (Timetrine, Adrar des Iforas and Tamesna), in parts of Tamesna and the Air Mountains in Niger, and in Chad. On the other hand, ecological conditions remained favourable for breeding in southern Mauritania and conditions improved in northwest Mauritania, in southern and southeast Algeria and in southwest Libya near Ghat.

In the **Central Region**, there was significant decline in rainfall in the summer breeding areas in Sudan during September. Nevertheless, ecological conditions remained favourable for breeding. In Eritrea, rainfall started to decline along the Red Sea coast during the second decade of the month and vegetations was drying out. Good rains fell for the third consecutive month in Yemen along the Red Sea coast and in the interior near Shabwah. Consequently, breeding conditions remained favourable in both areas. Moderate to heavy rains fell along parts of the northern coast and plateau of Somalia.

In the **Eastern Region**, light to moderate rain associated with the monsoon continued to fall in parts of the summer breeding area in Rajasthan, India and in adjacent areas in the Cholistan and Tharparkar Deserts in Pakistan during September. As a result, ecological conditions were favourable for breeding in both countries.

## Area Treated

Some 3,600 ha were treated in September compared to 750,000 ha in September 2004, bringing the total area treated since the beginning of the upsurge (October 2003) to 12.9 million ha.

| | |
|---|---|
| Algeria | 140 ha (21-31 August) |
| | 315 ha (11-20 September) |
| Eritrea | 85 ha (7-12 September) |
| India | 1,886 ha (1-30 September) |
| Libya | 1,555 ha (2-14 September) |
| Sudan | 159 ha (1-14 September) |
| Yemen | 175 ha (September) |

*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 September, small-scale breeding occurred to the west and east of Tidjikja (1833N/1126W) where a few first and second instar hoppers mixed with mature solitarious adults were found during intensive surveys. Consequently, locust numbers gradually increased but remained relatively low and insignificant. Isolated mature adults were also reported in the southeast near Nema (1636N/0715W) and Oualata (1717N/0701W), at one location in the Senegal River Valley across from Podor, and appeared in the northwest between Akjoujt (1945N/1421W) and Atar (2032N/1308W).

• **FORECAST**

*Locust numbers will decline in the summer breeding areas in the south as vegetation dries out.*

*Consequently, scattered adults will move towards the northwest where they are likely to appear in Inchiri and eventually breed if rainfall occurs. Locust numbers will increase but should remain below threatening levels in the Aftout Fai area and near Tidjikja as small-scale breeding continues in the coming weeks.*

**Mali**

• **SITUATION**

During September, intensive ground and helicopter surveys were carried out in the north. Throughout the month, only isolated adults were reported but during the last week, scattered immature and mature solitarious adults, at densities well below 100 adults/ha, and mixed with a few *transiens*-appearing adults were seen at about a dozen places, mainly in Tamesna and to a lesser extent in the northern Adrar des Iforas and in Timetrine.

• **FORECAST**

*Unless further rainfall occurs in the Adrar des Iforas or Tamesna, locust numbers will decline and only isolated adults are likely to persist and could breed in the few areas that remain green in the north.*

**Niger**

• **SITUATION**

During September, locust numbers increased slightly in Tamesna and the Air Mountains where low densities of mature solitarious adults were seen at numerous places during intensive ground and helicopter surveys. Small-scale breeding occurred in at least one location in northwest Tamesna near the Algerian and Malian borders where an individual fifth instar hopper and a few immature adults were found. By the end of the month, breeding was reported near the Air Mountains at Tezrzait (1921N/0853E) where a few late instar hoppers mixed with immature adults at densities of 5,000 adults/ha were seen on 30 ha on the 9th. Breeding also occurred near Agadez (1700N/0756E) where isolated fourth instar hoppers were present on the 25th, and near Agaliouk (1846N/0731E) where mainly mature adults, of which some were copulating, were present on about 500 ha at densities up to 300 adults/ha mixed with solitarious and a few *transiens* hoppers of all stages (second instar dominant). In the latter area on 27 September, some of the hoppers were concentrating into groups at densities of 10-20 hoppers/$m^2$ over about 10 ha.

During the last week of the month, the media reported that a swarm was present near the Malian border. Field teams confirmed that this was not the case and only scattered solitarious adults were present.

• **FORECAST**

*As summer rains cease and vegetation becomes drier, breeding will decline and be confined to those few areas that remain green in Tamesna and the Air Mountains where locusts are expected to concentrate, increase slightly in density and, at most, form a few small groups.*

**Chad**

• **SITUATION**

During the first two decades of September, isolated mature adults were seen at a few places in Kanem. No locusts were seen near Fada during intensive ground and helicopter surveys. No locusts were seen during the third decade of the month.

• **FORECAST**

*Unless further rainfall occurs, locust numbers will decline and only isolated adults are likely to persist in the few areas that remain green in Kanem, Ouaddai and Fada.*

**Senegal**

• **SITUATION**

No locusts were reported during the third decade of August and first two decades in September.

• **FORECAST**

*No significant developments are likely.*

**Burkina Faso**

• **SITUATION**

No locusts were reported during August.

• **FORECAST**

*No significant developments are likely.*

**Nigeria**

• **SITUATION**

Recent reports in the media of locust infestations in the north are not of Desert Locust.

• **FORECAST**

*No significant developments are likely.*

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

• **FORECAST**

*No significant developments are likely.*

**Algeria**

• **SITUATION**

During the last decade of August, ground control operations were carried out on 140 ha of immature solitarious adults mixed with a few fifth instar hoppers

north of Tamanrasset (2250N/0528E).

During September, ground control operations treated 315 ha of low-density solitarious hoppers and adults in the extreme south near the Niger border in the second decade. No locusts were reported during the remainder of the month.

• **Forecast**

*Locust numbers are expected to decline in the south as ecological conditions become unfavourable.*

**Morocco**

• **Situation**

No locusts were reported during September.

• **Forecast**

*A few isolated adults may appear in the southern part of Western Sahara.*

**Libyan Arab Jamahiriya**

• **Situation**

At the end of August, groups of low to medium density solitarious and *transiens* adults were seen in the southwest near Ghat in Wadi Tetaghsin (2532N/0955E) and Wadi Insika (2531N/0945E) on 110 ha. No locusts were seen in the southeast near Jebel Uweinat.

During September, small infestations persisted in the above wadis near Ghat where some adults were seen copulating by mid-month and ground control operations treated 1,555 ha during September. No locusts were seen in the northwest near Ghadames.

• **Forecast**

*Small-scale breeding may occur in the southwest near Ghat but locust numbers are expected to remain low.*

**Tunisia**

• **Situation**

A late report indicated that the situation was calm during August.

• **Forecast**

*No significant developments are likely.*

**CENTRAL REGION**

**Sudan**

• **Situation**

During the first half of September, ground control operations treated 159 ha of medium density fifth instar hopper bands in the secure areas in Northern Darfur near El Fasher (1337N/2522E). At mid-month, isolated mature adults were seen at two places along the western side of the Red Sea Hills near Haiya (1820N/3621E). No locusts were seen during surveys carried out in Northern Kordofan between El Obeid (1311N/3010E) and Ed Dueim (1400N/3220E) and on the Red Sea coast near Suakin (1908N/3717E).

During the second half of September, no locusts were seen in Western Darfur but security difficulties in Northern Darfur prevented teams from confirming reports of hopper infestations near Mellit (1407N/2543E).

• **Forecast**

*A limited number of small adult groups could form in Northern and Western Darfur. If so, most of these adults are likely to move towards the winter breeding areas along the Red Sea coast while a few could move west towards Northwest Africa. Those that move east may first appear along the Atbara River. Small-scale breeding along the Red Sea coast is expected to commence with the onset of the winter rains.*

**Eritrea**

• **Situation**

No locusts were seen during surveys carried out in the Western Lowlands in late August.

During the first half of September, control teams treated 85 ha of residual hopper and immature adult populations, at densities of 3-10 hoppers/$m^2$ and 2-70 adults/$m^2$, in previously infested areas on the northern coastal plains of the Red Sea near Mehimet (1723N/3833E). By the 20th, only a few small hopper infestations persisted mixed with adults, some of which were laying, at densities up to 5 adults/$m^2$. Elsewhere on the coast, hoppers and laying adults were present in crops near Naro (1626N/3840E) and a few adults were seen in farms near Shelshela (1553N/3906E).

No locusts were seen during surveys carried out in the Western Lowlands in late August.

• **Forecast**

*Another generation of hatching is expected to occur in favourable areas along the Red Sea coastal plains between Massawa and the Sudanese border, causing locust numbers to increase and the formation of a few small groups of hoppers and adults. Therefore, intensive surveys should be carried out on a regular basis during the forecast period.*

**Ethiopia**

• **Situation**

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

• **Forecast**

*No significant developments are likely.*

**Djibouti**

• **SITUATION**

No locusts were seen during surveys carried out in late August in the interior near Dikhil (1108N/4220E).

• **FORECAST**

*No significant developments are likely.*

**Somalia**

• **SITUATION**

A late report indicated that no locusts were seen at the end of August along the escarpment and on the plateau near Hargeisa. No locusts were seen during the last decade of September in the above areas nor on the northwest coast near Berbera and nor along the Djibouti border.

• **FORECAST**

*No significant developments are likely.*

**Egypt**

• **SITUATION**

No locusts were seen during surveys carried out in September along the Red Sea coast near Abu Ramad, near Lake Nasser at Abu Simbel and in the Western Desert at Sh. Oweinat.

• **FORECAST**

*No significant developments are likely.*

**Saudi Arabia**

• **SITUATION**

No reports were received during September.

• **FORECAST**

*Isolated adults may be present on the southern coastal plains of the Red Sea near Jizan and small-scale breeding could occur in areas where conditions are favourable.*

**Yemen**

• **SITUATION**

During September, small-scale breeding continued in the interior desert where patches of solitarious and *transiens* hoppers of all instars at densities of 15-50 hoppers/m$^2$ were seen at six locations near Komama (1440N/4618E) within an area of about 500 ha. Solitarious fledglings, immature and mature adults were concentrated in the limited areas of green vegetation at densities up to 1,500 adults/ha. Smaller hopper and adult infestations were seen nearby in the Humama area (ca. 1442N/4615E). At the end of the month, ground control operations treated 175 ha.

On the Red Sea coastal plains, isolated immature and mature adults were seen on the central Tihama south of Hodeidah (1450N/4258E) and on the northern Tihama near Suq Abs (1600N/4312E).

• **FORECAST**

*As rainfall ceases and vegetation becomes drier in the Shabwah interior, breeding will decline and locusts are likely to concentrate in the few areas that remain green, increase slightly in density and perhaps form a few small groups. By the end of the forecast period, most of the adults are likely to have moved towards the Red Sea coastal plains where small-scale breeding is expected to occur.*

**Oman**

• **SITUATION**

No locusts were seen during surveys carried out along the Musandam peninsula and on the Batinah coast in 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 25 September along the southern coast near Jask and Bandar Abbas.

• **FORECAST**

*No significant developments are likely.*

**Pakistan**

• **SITUATION**

During the second half of August, isolated solitarious mature adults, at densities up to 60 adults/ha, persisted in the Tharparkar, Nara and Cholistan deserts as well as in the Lasbela area west of Karachi where they were seen at 38 places. Breeding occurred in Cholistan near Bahawalpur (2924N/7147E) and hoppers of all instars were present at densities of 1-4 hoppers/m$^2$ at five locations.

During the first half of September, adult densities increased slightly to about 230 adults/ha in the above-mentioned areas. Breeding extended to the Nara Desert where isolated third instar hoppers were seen at three places near Sukkur (2742N/6854E).

During the last week of the month, a 5 km$^2$ swarm was seen in Cholistan near the Indian border at Salamsar (2758N/7149E) and groups of gregarious adults were reported nearby in the

Kakki (2855N/7114E) area. Control operations were immediately initiated.

• **Forecast**

*Locust numbers may increase early in the forecast period as a result of any undiscovered local breeding. Once summer rains cease and vegetation becomes drier, breeding will decline and locusts may concentrate in the few areas that remain green, increase slightly in density and perhaps form a few small groups. Adults are likely to move back and forth along both sides of the Indo-Pakistan border at any time. By the end of the forecast period, easterly winds should become established in the region and an increasing number of adults are likely to move west towards the southern Indus Valley.*

**India**

• **Situation**

During August, isolated adults at densities up to 25 adults/ha were found in increasing numbers of places in Rajasthan, primarily between Jodhpur (2618N/7308E) and Bikaner (2801N/7322E), and to a lesser extent near Barmer (2543N/7125E). Some adults were reported to be laying eggs northwest of Jodhpur.

During the first half of September, small-scale breeding occurred northwest of Jodhpur between Phalodi (2706N/7222E) and Jaisalmer (2652N/7055E) where small infestations of hoppers of all instars at densities of up to one hopper/10m$^2$ were present at about 40 locations. Higher densities of 1,000 hoppers/m$^2$ were reported at two locations and a third place reported 20 hoppers/m$^2$. Fledging commenced during the second week and the size of the infested areas increased. By the end of the month, immature adults were forming small groups in some places. Ground control operations treated 1,886 ha during September.

• **Forecast**

*Locust numbers are expected to increase further as breeding continues in areas of recent rainfall in Rajasthan. Once the rains cease and vegetation starts to dry out, locusts are likely to concentrate in the few areas that remain green, increase slightly in density, become more gregarious and form small groups and perhaps a few small swarms. Adults will probably move back and forth along both sides of the Indo-Pakistan border at any time but, by the end of the forecast period, an increasing number could move west once easterly winds become established in the region.*

**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.

**Locust web pages.** The Locust Group has launched an updated version of its web site in English and French at: www.fao.org/ag/locusts.

**Locust archives.** Desert Locust reports received by FAO from affected countries from 1952 to the present are available on a series of four CDs in PDF. Please contact the Locust Group for more details.

**Desert Locust booklet.** FAO has produced a booklet for the general public and donor community entitled Hunger in their wake: Inside the battle against the Desert Locust, available for download at www.fao.org/ag/locusts (Publications).

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

- Report of the Desert Locust joint survey in the spring breeding areas of Pakistan and I.R. Iran, April 2005 (English)

**2003-05 campaign evaluation.** An independent evaluation of the recent Desert Locust campaign will be carried out during the next few months. It will be overseen by a Steering Committee composed of donors and affected countries. The results of the evaluation are expected to be reported at the next session of the DLCC. Consequently, this session has been rescheduled to accommodate the evaluation.

**2005-2006 events.** The following meetings are tentatively scheduled:

- **EMPRES/CR.** 6th Consultative Committee, Cairo (Egypt), 13-15 November
- **EMPRES/CR.** 13th Liaison Officers meeting, Yemen, January 2006
- **EMPRES/WR.** 4th Liaison Officers meeting, Algiers, January/February 2006
- **DLCC.** 38th Session, Rome, 6-10 March

## 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**

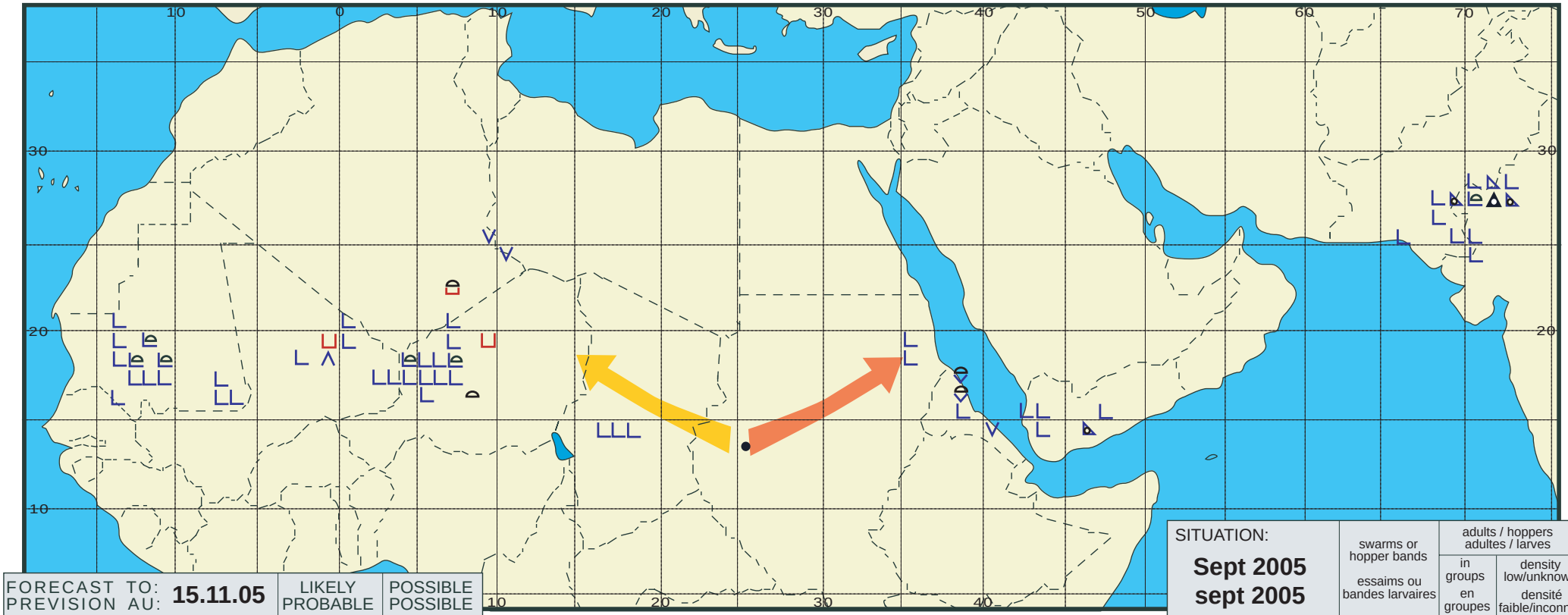
- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

**EASTERN**

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

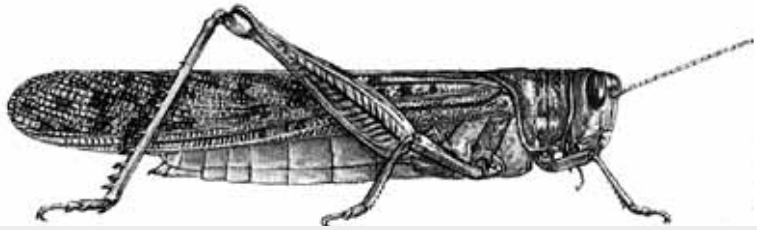
# Desert Locust Summary
# Criquet pèlerin - Situation résumée

**324**




| FORECAST TO: PREVISION AU: **15.11.05** | LIKELY PROBABLE | POSSIBLE POSSIBLE |
|---|---|---|
| favourable breeding conditions<br>conditions favourables à la reproduction | | |
| major swarm(s)<br>essaim(s) important(s) | | |
| minor swarm(s)<br>essaim(s) limité(s) | | |
| non swarming adults<br>adultes non essaimant | | |

| SITUATION: **Sept 2005**<br>**sept 2005** | swarms or hopper bands<br>essaims ou bandes larvaires | adults / hoppers adultes / larves | |
|---|---|---|---|
| | | in groups<br>en groupes | density low/unknown<br>densité faible/inconnue |
| immature adults<br>adultes immatures | ■ | □ | ⊔ |
| mature or partly mature adults<br>adultes matures ou partiellement matures | ◣ | ◺ | L |
| adults, maturity unknown<br>adultes, maturité inconnue | ▲ | △ | ∧ |
| egg laying or eggs<br>pontes ou œufs | ▼ | ▽ | ∨ |
| hoppers<br>larves | ● | ○ | ◡ |
| hoppers & adults (combined symbol example)<br>larves et adultes (exemple symboles combinés) | ◘ | ◙ | ◒ |



# DESERT LOCUST UPDATE

**FAO Emergency Centre for Locust Operations**

*(16 November 2005)*

## General Situation up to 16 November 2005

**The Desert Locust situation remained relatively calm in Africa and along both sides of the Red Sea during the first half of November. Small-scale breeding continued in western Mauritania, and a few adults were seen in the north where more adults may appear by the end of the month. Isolated infestations were present in southeast Algeria and in eastern Chad. A small swarm was reported in Darfur, Sudan and a few more swarms are likely to form there in the coming weeks and move towards the Red Sea coast where so far in Sudan only scattered adults are present. Intensive surveys were underway along the Red Sea coast in Saudi Arabia where a swarm was reported last month but despite searching could not be confirmed. Ground control operations continued against hopper bands along the Indo-Pakistan border where the situation should improve by the end of November.**

Small-scale breeding by scattered adults continued in western **Mauritania** during the first half of November in two areas where ecological conditions remained favourable: between Magta Lahjar (1730N/1305W) and Tidjikja (1833N/1126W) where third to fifth instar hoppers and scattered solitarious adults were present and between Boutilimit (1732N/1441W) and Akjoujt (1945N/1421W) where hoppers of all instars mixed with isolated adults were reported. In both areas, densities were less than 200 locusts/ha. Although ecological conditions improved in the north as a result of rainfall during October, so far only isolated adults have been seen near Bir Moghrein (2510N/1135W) and Zouerate (2244N/1221W). The situation remained calm in northern **Mali**. In northern **Niger**, a *Metarhizium* trial was conducted in early November against scattered adults in the Agaliouk (1846N/0731E) area east of Arlit. Scattered adults were also present in a few places in eastern **Chad**. In southeast **Algeria**, hoppers of different instars were present near Illizi (2630N0825E) and immature solitarious adults were seen southwest of Djanet (2434N/0930E).

On 5 November, a 1.5 km$^2$ immature swarm was seen in West Darfur, **Sudan** near Zalingei (1251N/2329E). A few more small swarms may form in Darfur where survey and control operations are hampered by the prevailing security situation. If so, the swarms are likely to move towards the winter breeding areas along both sides of the Red Sea. So far, only low numbers of mature solitarious adults have appeared on the coast in the Tokar Delta and along the plains towards the Eritrean border but these are likely to increase in the coming weeks. In **Saudi Arabia**, there was an unconfirmed report of immature gregarious adults near Taif (2115N4021E) that may be linked to the unconfirmed swarm last month. Intensive surveys are underway along the coastal plains to clarify these reports.

In South-West Asia, control operations continued in the summer breeding areas along both sides of the Indo-Pakistan border in late October. In **Pakistan**, ground teams treated 1,266 ha of hopper bands and adults during the second half of October. In **India**, teams treated an additional 1,729 ha of hoppers near Jaisalmer (2652N/7055E).

The most up-to-date information on the situation is available on the new FAO locust web site (www.fao.org/ag/locusts).

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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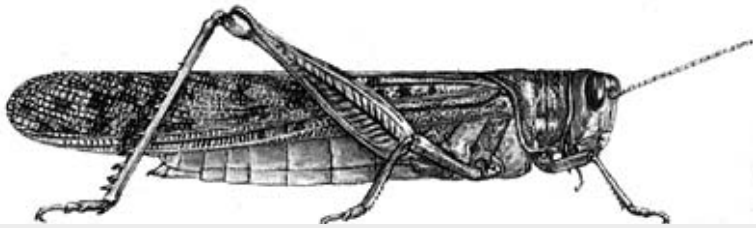

# DESERT LOCUST BULLETIN

**FAO Emergency Centre for Locust Operations** **No. 325**

*(3 Nov 2005)*

## General Situation during October 2005
## Forecast until mid-December 2005

**Small-scale breeding continued in parts of the summer breeding areas in the Sahel in West Africa during October. Consequently, locust numbers increased a little in some places but remained low. Limited control operations were only required in Algeria and, to a lesser extent, in Niger. Unusually good rain fell in northern Mauritania and Western Sahara where locusts are expected to arrive and eventually lay eggs. In the Central Region, solitarious adults appeared on the Red Sea coast in Sudan and there was a report of a swarm on the Saudi Arabian coast that could not be confirmed. Control operations were carried out along the Indo-Pakistan border where small hopper bands and adult groups and swarmlets formed. A few small swarms could form there during the forecast period and move towards the Indus Valley in Pakistan.**

**Western Region.** Small-scale breeding occurred during October and low numbers of solitarious hoppers and adults were present in **Mauritania**, northeast **Mali** and northern **Niger**. In western Mauritania, locusts were scattered throughout a large area where ecological conditions were favourable for further breeding. More locusts may actually be present than are suggested by survey results. In the other countries, vegetation was drying out and the locusts were concentrating in the few places that remained green. In Niger, control operations treated 125 ha. Breeding continued for the third consecutive month in southern **Algeria** where ground teams treated more than 5,000 ha in October. Locust numbers declined in **Chad** and only isolated adults persisted. During the forecast period, locust numbers are expected to increase further in western Mauritania and some locusts will move into northern Mauritania and **Western Sahara** where unusually good rains fell in early October. Intensive surveys should be maintained in these three areas.

**Central Region.** Although control operations were undertaken in parts of Darfur, **Sudan** in October, there is a risk that a limited number of adult groups and small swarms could form and move towards the winter breeding areas along both sides of the Red Sea. So far, solitarious adults have appeared in the Tokar Delta in Sudan and good rains fell on the northern coast in **Eritrea**. In **Yemen**, small-scale breeding occurred on the Gulf of Aden coast and isolated adults were present on the Red Sea coastal plains. An immature swarm was reported on the coast north of Jeddah in **Saudi Arabia** but subsequent surveys could find no trace of it or other locusts along the coast. Although the swarm could have originated from western Sudan, it is unlikely that it moved nearly 2,000 km without being seen.

**Eastern Region.** Hatching and hopper band formation occurred during October in one area on both sides of the Indo-Pakistan border. Although control operations were undertaken in **India** (3,500 ha) and **Pakistan** (1,700 ha), a few small swarms could form and move to the Indus Valley and Baluchistan, Pakistan.

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## Weather & Ecological Conditions in October 2005

**Unusually good rains fell in northern Mauritania and Western Sahara in early October. Vegetation continued to dry out in the Sahel where summer rains have ended. Ecological conditions improved in a few places along both sides of the Red Sea. Monsoon rains ended along the Indo-Pakistan border and vegetation was starting to dry out.**

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) continued its retreat southwards, oscillating between 15N and 10N in October. Unusually good rain fell on 7-10 October in northern Mauritania between Zouerate and Bir Moghrein as far east as 9W and in adjacent parts of Western Sahara between Tichla and Al-Farcia. Moderate rain also fell during the first decade in Morocco along the Atlantic coast between Tan-Tan and Agadir, on the southern side of the Atlas Mountains and in southern Algeria near Tamanrasset. No significant rain occurred during the remainder of the month. Vegetation continued to dry out in south and southeastern Mauritania but conditions remained favourable in the west between Nouakchott and Tidjikja. By the end of the month, vegetation was starting to become green in Western Sahara where it had rained earlier. Small patches of vegetation persisted in parts of the Tamesna Plains in northeast Mali and northwest Niger while ecological conditions were much drier in the Air Mountains in Niger. In southern Algeria, green vegetation persisted near the Malian and Libyan borders. In Chad, vegetation was drying out in most places.

In the **Central Region**, mainly dry weather prevailed throughout the region during October. Good rains and flooding occurred at the end of the month on the northern Red Sea coast near Mehimet, Eritrea. Conditions were improving on the Red Sea coast of Sudan in the Tokar Delta but were dry in other coastal areas between Egypt and Eritrea. Ecological conditions were favourable for breeding on the Red Sea coast in Saudi Arabia near Jizan and in adjacent areas on the Tihama coast in Yemen; elsewhere, it was dry in both countries. Light to moderate rain associated with eastward-moving Mediterranean depressions fell along the northern coast in Egypt but locusts are unlikely to be in these areas.

In the **Eastern Region**, no significant rainfall occurred during October. Although vegetation started to dry out in a few places, ecological conditions remained generally favourable in the summer breeding areas in Rajasthan, India and, to a lesser extent, in adjacent areas of Pakistan in the Cholistan and Tharparkar deserts.

## Area Treated

Some 10,400 ha were treated in October compared to 1.6 million ha in October 2004, bringing the total area treated since the beginning of the upsurge (October 2003) to nearly 13 million ha.

| | |
|---|---|
| Algeria | 5,120 ha (1-31 October) |
| India | 3,456 ha (1-26 October) |
| Niger | 125 ha (1-31 October) |
| Pakistan | 570 ha (16-30 September) |
| | 1,740 ha (1-15 October) |
| Sudan | no details (October) |

*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 October, small-scale breeding continued to the west and east of Tidjikja (1833N/1126W) and northwest of Moudjeria (1752N/1219W). Laying and hatching were reported north of Boutilimit (1732N/1441W) in the Aftout Fai area. Solitarious hoppers of all instars and immature and mature adults were present in these areas. Consequently, there was a slight increase in locust numbers but densities remained well below 100 adults/ha. Scattered immature and mature adults were present northeast of Kiffa (1638N/1124W) and immature adults persisted east of Nema (1636N/0715W) and Oualata (1717N/0701W). At the end of the month, isolated mature adults appeared in the northwestern region of Inchiri but no locusts were seen in Tiris Zemmour south of Bir Moghrein.

• **Forecast**

*Locust numbers are expected to increase in the west between Nouakchott and Tidjikja as breeding continues and adults arrive from the summer breeding areas. If further rainfall occurs, breeding is likely to carry on in these areas and extend to Inchiri. Scattered adults may be present and breeding in Tiris Zemmour between Zouerate, Bir Moghrein and east to 9W where good rains fell in early October. If so, increases in locust numbers can be expected. Intensive surveys should be maintained in the northwest and north.*

**Mali**

• **Situation**

During October, small-scale breeding occurred in the Tamesna and Timetrine where solitarious hoppers of all instars were present at densities up to 9 hoppers/bush. Scattered immature and mature adults were reported in these areas as well as in the Adrar des Iforas between Kidal (1827N/0125E) and the Algerian border. A few of the hoppers and adults were transiens and some of the adults were copulating in the Tamesna.

• **Forecast**

*Unless further rainfall occurs in the Adrar des Iforas or Tamesna, breeding is expected to come to an end and only isolated adults are likely to persist in the few areas that remain green in the north.*

**Niger**

• **Situation**

During October, low numbers of immature and mature adults and isolated hoppers were present in the northern Air Mountains near Iferouane (1904N/0825E) and on the Tamesna Plains between Arlit (1844N/0722E) and the Malian border. Adults were copulating and laying eggs in a few places west of Arlit and breeding was in progress in one wadi north of Iferouane where solitarious and transiens hoppers of all instars were present on 0.5 ha at densities of up to 4 hoppers/$m^2$. Isolated adults were also present east of Agadez (1658N/0759E) and on the western edge of the Tenere Desert. During the first decade, adults started to concentrate in the few areas that remained green and ground control teams treated 125 ha of solitarious adults at densities of up to 2,500 adults/ha north of Iferouane in Wadi Tassos (1941N/0815E) and on the western side of the Air Mountains in Wadi Anou Mekkerene (1806N/0736E). At the end of the month, hatching was reported in northwest Tamesna near Anes Baraka (1815N/0548E) and first instar hoppers were present at densities up to 20 hoppers/$m^2$ in four places. A Metarhizium trial against scattered adults in the Agaliouk (1846N/0731E) area east of Arlit is expected to take place in early November.

• **Forecast**

*As vegetation becomes drier, breeding will continue to decline and be confined to those few areas that remain green in Tamesna and perhaps in the northern Air Mountains. Locusts are expected to concentrate in these areas, increase slightly in density and, at most, form a few small groups.*

**Chad**

• **Situation**

During the first two decades of October, isolated solitarious adults were present in the east between Biltine (1430N/2053E) and Fada (1714N/2132E) at densities up to 70 adults/ha.

• **Forecast**

*Unless further rainfall occurs, locust numbers will decline and only isolated adults are likely to persist in the few areas that remain green in Kanem, Ouaddai and Fada.*

**Senegal**

• **Situation**

No locusts were reported during the third decade of September and first two decades in October.

• **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**

During October, small-scale breeding continued east of Tamanrasset where solitarious third to fifth instar hoppers, at densities of up to 10 hoppers/$m^2$, and mature adults, at densities of up to 5 adults/$m^2$, were present. During the last week of the month, additional hopper infestations were found further east towards Djanet (2434N/0930E). Ground control operations treated 5,120 ha during October, mainly in the first week of the month. No locusts were seen during surveys carried out in other parts of the country.

• **Forecast**

*As ecological conditions become unfavourable, locusts may concentrate in the few areas that remain*

*green in the southeast, increase slightly in density and, at most, form a few small groups.*

**Morocco**

• **Situation**

No locusts were seen during surveys carried out south of the Atlas Mountains along the border with Algeria and in Western Sahara.

• **Forecast**

*Scattered adults may appear in the southern part of Western Sahara and could extend as far north as Smara where small-scale breeding could occur in areas of recent rainfall.*

**Libyan Arab Jamahiriya**

• **Situation**

No locusts were reported during October.

• **Forecast**

*Small-scale breeding may be in progress in the southwest near Ghat but locust numbers are expected to remain low.*

**Tunisia**

• **Situation**

No reports were received during October.

• **Forecast**

*No significant developments are likely.*

**CENTRAL REGION**

**Sudan**

• **Situation**

During October, control operations were undertaken in some of the secure parts of North Darfur and hoppers were seen in inaccessible areas near Karnoi (1503N/2337E). No further details were available. On the Red Sea coast, isolated immature and mature adults appeared in the Tokar Delta on 16 October. No locusts were seen elsewhere along the coast as well as in the interior near Wadi Oko/Diib. Although the situation was reported to be calm in other regions, further details are awaited.

• **Forecast**

*A limited number of small adult groups and perhaps a few small swarms could still form in Darfur. If so, most of these adults are likely to move towards the winter breeding areas along the Red Sea coast while a few could move west towards Northwest Africa. Those that move east may first appear along the Atbara River. Small-scale breeding is expected to commence on the Red Sea coast with the onset of the winter rains.*

**Eritrea**

• **Situation**

No locusts were seen during surveys carried out on the northern coast of the Red Sea near Mehimet (1723N/3833E) and on the southern plains near Tio (1441N/4057E) on 13-24 October.

• **Forecast**

*Low numbers of locusts may be present or reappear on the northern coastal plains of the Red Sea and breed on a small scale in areas of recent rainfall.*

**Ethiopia**

• **Situation**

No locusts were seen during surveys carried out in the Tigray region during the first week of October.

• **Forecast**

*No significant developments are likely.*

**Djibouti**

• **Situation**

No locusts were reported during October.

• **Forecast**

*No significant developments are likely.*

**Somalia**

• **Situation**

No locusts were seen on the escarpment to the northwest and northeast of Hargeisa (0931N/4402E) or on the coast west of Berbera (1028N/4502E) during surveys carried out on 18-22 October.

• **Forecast**

*No significant developments are likely.*

**Egypt**

• **Situation**

No locusts were seen during surveys carried out in October along both sides of Lake Nasser or near Shalatyn on the Red Sea coast.

• **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**

On 31 October, there was an unconfirmed report of an immature swarm on the Red Sea coast north of Jeddah in downtown Rabigh (2247N/3901E). Subsequent surveys could find no trace of the swarm or of other locusts along the Red Sea coastal plains between Yenbo and Jizan.

• **Forecast**

*Isolated adults may be present on the southern coastal plains of the Red Sea near Jizan and small-scale breeding could occur in areas where conditions are favourable. If the swarm is confirmed, it is likely to remain on the coast or move inland in search of favourable ecological conditions. There is a low risk that it could move west across the Red Sea.*

**Yemen**

• **Situation**

During October, local breeding occurred at five places on the coastal plains east of Aden near Zinjibar (1306N/4523E) where first to fourth instar hoppers were present at densities up to 2 hoppers/$m^2$ at mid-month. Isolated solitarious mature adults were seen on the Red Sea coastal plains near Hodeidah (1450N/4258E) and Bayt Al Faqih (1430N4317E). No locusts were seen on the northern coastal plains of the Red Sea or on the coast west of Aden. No information was received about the situation in the interior where breeding occurred during September.

• **Forecast**

*Small-scale breeding is expected to occur on the Red Sea coastal plains causing locust numbers to increase slightly. Fledging will take place on the Gulf of Aden coast near Aden and perhaps a few small adult groups could form. Further breeding could eventually occur if rains fall during the forecast period.*

**Oman**

• **Situation**

No locusts were seen during October 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 October.

• **Forecast**

*No significant developments are likely.*

**Pakistan**

• **Situation**

Late reports indicated that a swarm of about 320 ha was seen copulating and laying eggs and six other small swarmlets of about 100 ha each were present on 26-30 September in Cholistan near the Indian border and Salamsar (2758N/7149E). Control teams treated 570 ha.

During the first half of October, there were 15 reports of mature swarmlets settled in several places in the Salamsar area. Hatching occurred in some of these places and about 54 small first to third instar hopper bands reportedly formed. Ground control teams treated 1,740 ha. Elsewhere, isolated mature solitarious adults at densities of up to 20 adults/ha were present in a few places in Nara, Tharparkar and Cholistan deserts.

• **Forecast**

*An increasing number of adults including a few groups and small swarms are likely to appear from adjacent areas of Rajasthan and progressively move towards the west, threatening the southern and central Indus Valley. Most of these populations will probably continue further west where they may disperse in Baluchistan.*

**India**

• **Situation**

During the first half of October, hatching occurred in 11 places northwest of Jodhpur between Phalodi (2706N/7222E) and Jaisalmer (2652N/7055E) where laying was reported in September. First and second instar hoppers formed very small patches and bands at densities of up to 30 hoppers/$m^2$ mixed with groups of mature adults within a limited area of about 75 km by 25 km in Jaisalmer district. By the end of the month, some of the hoppers had reached fifth instar. Ground control teams treated 3,456 ha from 1 to 26 October. Although the situation was reported to be calm elsewhere in Rajasthan, further details are awaited.

• **Forecast**

*Any locusts that escape detection and control are likely to form a few small adult groups and swarmlets near Jaisalmer that will probably move towards the west. Consequently, the situation should improve by 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. 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)

**Desert Locust booklet.** FAO has produced a booklet for the general public and donor community entitled Hunger in their wake: Inside the battle against the Desert Locust, available for download at www.fao.org/ag/locusts (Publications).

**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)

**2003-05 campaign evaluation.** An independent evaluation of the recent Desert Locust campaign will be carried out during the next few months. It will be overseen by a Steering Committee composed of donors and affected countries. Preliminary results of the evaluation are expected to be reported at the next session of the DLCC in March 2006.

**2005-2006 events.** The following meetings are tentatively scheduled:

- **EMPRES/CR.** 6th Consultative Committee, Cairo (Egypt), 13-15 November
- **EMPRES/CR.** 13th Liaison Officers meeting, Yemen, 11-15 December
- **EMPRES/WR.** 4th Liaison Officers meeting, Algiers, January/February 2006
- **DLCC.** 38th Session, Rome, 6-10 March

## 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**

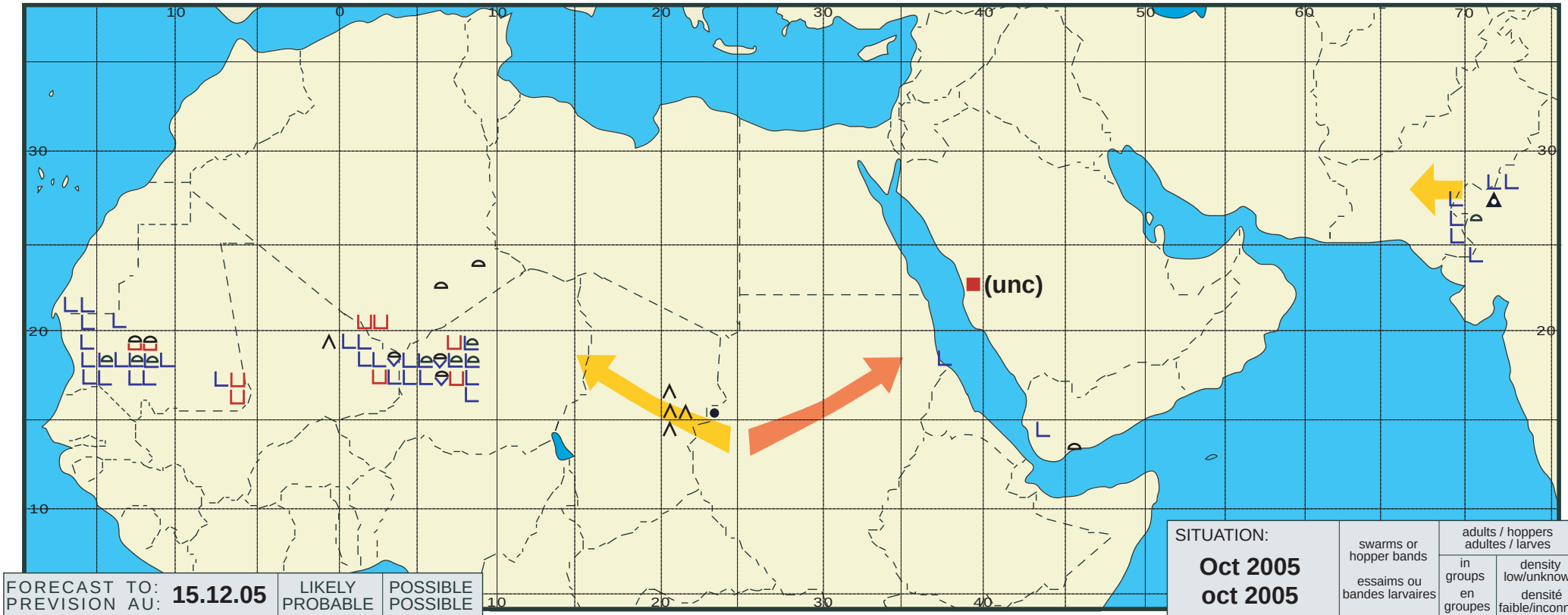
- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

**EASTERN**

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

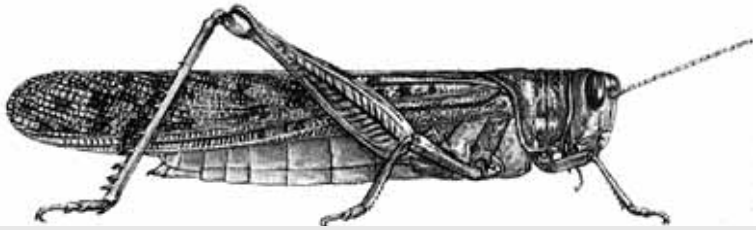
# Desert Locust Summary
# Criquet pèlerin - Situation résumée

**325**




| FORECAST TO: PREVISION AU: **15.12.05** | LIKELY PROBABLE | POSSIBLE POSSIBLE |
|---|---|---|
| favourable breeding conditions<br>conditions favourables à la reproduction | | |
| major swarm(s)<br>essaim(s) important(s) | | |
| minor swarm(s)<br>essaim(s) limité(s) | | |
| non swarming adults<br>adultes non essaimant | | |

| SITUATION: **Oct 2005**<br>**oct 2005** | swarms or hopper bands<br>essaims ou bandes larvaires | adults / hoppers adultes / larves | |
|---|---|---|---|
| | | in groups<br>en groupes | density low/unknown<br>densité faible/inconnue |
| immature adults<br>adultes immatures | ■ | □ | ⊔ |
| mature or partly mature adults<br>adultes matures ou partiellement matures | ◣ | ◺ | L |
| adults, maturity unknown<br>adultes, maturité inconnue | ▲ | △ | ⋀ |
| egg laying or eggs<br>pontes ou œufs | ▼ | ▽ | ⋁ |
| hoppers<br>larves | ● | ○ | ◞ |
| hoppers & adults (combined symbol example)<br>larves et adultes (exemple symboles combinés) | ◘ | ◙ | ◒ |



# DESERT LOCUST UPDATE

**FAO Emergency Centre for Locust Operations**

*(20 December 2005)*

## General Situation up to 20 December 2005

**The Desert Locust situation continues to remain relatively calm in Africa and along both sides of the Red Sea. Breeding is in progress in western Mauritania and, to a lesser extent, in southern Algeria. Limited control operations were undertaken in early December in both countries. Small-scale breeding is also underway in the Tokar Delta on the Red Sea coast in Sudan where ecological conditions are favourable. Elsewhere, scattered locusts are probably present in a few places on the Tamesna Plains in Niger and perhaps in northern Mali. Although ground control operations have declined against hopper bands and immature swarms that formed along both sides of the Indo-Pakistan border, there is a risk that some adults and a perhaps a few small swarms could eventually appear in Baluchistan, western Pakistan.**

Small-scale breeding continues in western **Mauritania** where solitarious and a few *transiens* hoppers, mainly fourth instar stage, mixed with scattered fledglings and immature adults are present in three areas between Aftout Fay (1834N/1424W) and Tidjikja (1833N/1126W). So far, eight small hopper bands have formed, each less than 120 $m^2$ in size with a density of up to 7 hoppers/$m^2$. Ground control operations were carried out in one area and treated 452 ha from 4 to 10 December. Scattered mature solitarious adults are present in northwest Inchiri and in Tiris Zemmour near Bir Moghrein and Zouerate. A few solitarious hoppers have also been seen near Zouerate. In southern **Algeria**, ground control teams treated 125 ha of solitarious hoppers that were present southeast of Tamanrasset at densities of 10-20 hoppers/bush and mixed with solitarious immature adults.

Elsewhere in the region, the situation remains calm. In late November, scattered adults were present near Arlit, **Niger** and small-scale breeding was in progress in a few places in Tamesna. Although surveys have not been carried out in December, small infestations are likely to present and could persist in some of the above areas. No locusts were reported in northern **Mali** during the first half of December.

Small-scale breeding is in progress in the winter breeding areas on the Red Sea coastal plains in the Tokar Delta, **Sudan**. Isolated third to fifth instar hoppers and scattered immature and mature adults are present at about 30 places in the delta at densities of up to 300 adults/ha.

In Southwest Asia, control operations have declined along both sides of the Indo-Pakistan border where small hopper bands and swarms had formed in areas of previous breeding in November. On 1 December, control teams in **India** treated a low-density immature swarm on 150 ha near Jaisalmer. Control operations were in progress during the first week of December in adjacent areas of **Pakistan** against about 100 ha of small immature adult groups. Any adults that escape control will form a few more small groups or swarmlets and move out of the area because vegetation has become dry. Most of these adults are likely to move towards the spring breeding areas in Baluchistan, western Pakistan while a few adults could move further east or south in Rajasthan. So far, a few solitarious mature adults appeared at mid-month in coastal areas near Shooli and Las Bela. Surveys should be intensified in all affected areas.

The most up-to-date information on the situation is available on the FAO locust web site (www.fao.org/ag/locusts).

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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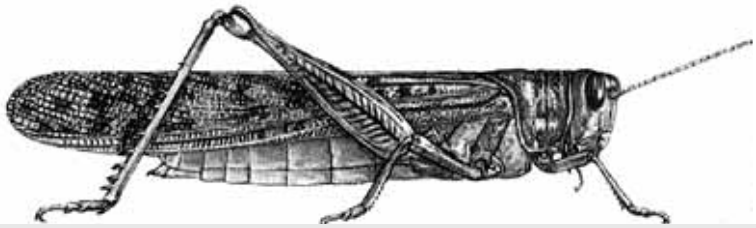

# DESERT LOCUST BULLETIN

**FAO Emergency Centre for Locust Operations** **No. 327**

*(31 Dec 2005)*

## General Situation during December 2005 Forecast until mid-February 2006

**The Desert Locust situation remained generally calm during December. Control operations declined along both sides of the Indo-Pakistan border where small swarms were present during the first week. Adults that escaped control moved out of this area and reached the spring breeding areas in western Pakistan by mid-month. Small-scale breeding continued in western Mauritania and southern Algeria where limited ground control operations were required in both countries. So far, only small-scale breeding has occurred on the Red Sea coast in Sudan in the Tokar Delta but locust numbers remained low. During the forecast period, breeding is expected on both sides of the Red Sea and could commence in northern Mauritania and Western Sahara where good rains fell in December.**

**Western Region.** Small-scale breeding continued during December in western and central **Mauritania** for the fourth consecutive month. As a result of a gradual increase in locust numbers as well as a shift from solitarious to *transiens* locusts, ground control operations were conducted in a few areas. Scattered adults were present in northwest and northern Mauritania where ecological conditions improved and small-scale breeding commenced near Zouerate and could start in other areas in the coming weeks. Limited control operations were also carried out against hoppers and adults in southern **Algeria**. Scattered solitarious adults were present in parts of Tamesna, **Niger**. Low numbers of solitarious adults are likely to persist during the forecast period in parts of northern **Mali** and Niger, and perhaps in southern Algeria.

**Central Region.** Small-scale breeding continued during December in the winter breeding areas along the Red Sea coast in **Sudan** in the Tokar Delta where scattered hoppers and adults were present. Isolated adults were present in subcoastal areas in northeast Sudan and near two farms in southern **Egypt**. In **Yemen**, ecological conditions remained favourable in some places along the Red Sea and Gulf of Aden coastal plains where hoppers and adults were present. During the forecast period, small-scale breeding will continue in the Tokar Delta and on the northern Tihama coast in Yemen. Limited breeding could also occur on the Red Sea coast in southeast Egypt where good rains fell in late December and, if more rainfall occurs, on the northern coast in **Eritrea** and central Tihama coast in Yemen.

**Eastern Region.** Ground control operations treated several small immature adult groups and swarms along both sides of the border in Rajasthan, **India** and Cholistan, **Pakistan** in early December. Thereafter, scattered mature adults appeared in eastern Pakistan and they moved progressively west across the Indus Valley and reached the spring breeding areas in coastal Baluchistan, western Pakistan at mid-month. Small-scale breeding will take place along the coast and in the interior of Baluchistan if rainfall occurs during the forecast period but low temperatures, especially in the interior, may delay hatching and hopper development.

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No. 327

DESERT LOCUST BULLETIN

## Weather & Ecological Conditions in December 2005

**Good rains fell in parts of the winter breeding areas in northern Mauritania and Western Sahara where breeding conditions were improving. Ecological conditions were also favourable for breeding in a few places along the Red Sea coast, mainly in Sudan. Vegetation dried out during December along the Indo-Pakistan border.**

In the **Western Region**, good rains fell during a few days in the second half of December in northern Mauritania, Western Sahara and south of the Atlas Mountains in Morocco. Rainfall was heaviest along the northern coast (Laayoune, 51 mm) and adjacent interior (Smara, 33 mm) of Western Sahara. Light showers fell along the Atlantic coast in Morocco south of Agadir, in western Algeria near Tindouf and in northwest and northern Mauritania near Tijirat and Bir Moghrein. Consequently, ecological conditions were already favourable or improving in these areas to allow breeding. Annual vegetation was drying out in western Mauritania near Tidjikja and Aftout Fai where locust breeding was in progress in December. Although vegetation was also drying out in northern Mali (Tilemsi Valley, Adrar des Iforas and Tamesna), northern Niger (Tamesna) and southern Algeria due to a lack of rainfall, ecological conditions remained favourable enough in a few places to allow low numbers of locusts to survive.

In the **Central Region**, showers fell at times in parts of the winter breeding areas on both sides of the Red Sea. Light rain fell on the 7th on the coast near Suakin, Sudan and Emit, Eritrea. Heavy rain was reported near Port Sudan on the 9th and near Abu Ramad, Egypt on the 23rd. Ecological conditions were favourable for breeding in the Tokar Delta and, to a lesser extent, along the coast between Tokar and Mehimet, Eritrea. Conditions were improving in subcoastal areas in northeast Sudan along Wadi Oko and on the Red Sea coast in southeast Egypt between Shalatyn and the Sudanese border. No significant rainfall was reported on the eastern side of the Red Sea, but ecological conditions remained favourable in some places along the Tihama and Gulf of Aden coastal plains in Yemen. In northern Oman, light rain fell in spring breeding areas along the northern Batinah coast near Sohar at mid-month.

In the **Eastern Region**, cold and dry weather prevailed during December in summer breeding areas along the Indo-Pakistan border as well as in spring breeding areas in Baluchistan, western Pakistan.

## Area Treated

Nearly 1,800 ha were treated in December against hopper bands and swarms along the Indo-Pakistan border and small-scale breeding in Algeria and Mauritania.

| | |
|---|---|
| Algeria | 425 ha (14-23 December) |
| India | 535 ha (1-5 December) |
| Mauritania | 723 ha (December) |
| Pakistan | 107 ha (16-30 November) |
| | 108 ha (1-15 December) |

*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 December, small-scale breeding continued in the west of the country where solitarious and a few *transiens* hoppers, mixed with scattered fledglings and maturing adults, were present in the Aftout Fai (1834N/1424W) region, north of Moudjeria (1752N/1219W), and near Tidjikja (1833N/1126W). Hoppers were grouping in the Aftout Fai at densities up to 20 hoppers/bush. By mid-month, a few small hopper groups and bands formed, each less than 120 $m^2$ in size with a density of up to 7 hoppers/$m^2$, and laying was reported at one location. Most of the hoppers were fifth instar. Ground control teams treated 723 ha from 4 to 20 December. Low numbers of immature and mature solitarious adults were scattered throughout Inchiri as well as in parts of Tiris-Zemmour near Zouerate (2244N/1221W) and Bir Moghrein (2510N/1135W).

• **FORECAST**

*Small-scale breeding may continue in parts of Aftout Fai and Inchiri where conditions remain favourable.*

*Scattered adults are likely to persist in these areas as well as near Tidjikja. Limited breeding is expected to commence in Tiris Zemmour near Zouerate and Bir Moghrein, causing locust numbers to increase gradually during the forecast period. Intensive surveys should be maintained in all of these areas.*

**Mali**

• **Situation**

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

• **Forecast**

*Low numbers of locusts are likely to be present and persist in the few places that remain green in the Tilemsi Valley, the Adrar des Iforas and Tamesna.*

**Niger**

• **Situation**

In late November, scattered adults were present near Arlit and small-scale breeding was in progress in a few places in Tamesna.

During December, there was a report of solitarious hoppers in the extreme southeast near Nguigmi (1415N/1307E) on the 4th. In Tamesna, isolated immature and mature adults were present at a few locations northwest of In Abangharit (1754N/0559E) during the third decade.

• **Forecast**

*Isolated adults may persist in the few places that remain green in Tamesna.*

**Chad**

• **Situation**

No locusts were reported during the first decade of December in BET and Wadi Fira.

• **Forecast**

*No significant developments are likely.*

**Senegal**

• **Situation**

No locusts were reported during the second decade in December.

• **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**

During the second half of December, solitarious third to fifth instar hoppers at densities of 10-20 hoppers/bush and immature solitarious adults at densities of 5 adults/bush were present southeast of Tamanrasset (2250N/0528E). Ground control teams treated 425 ha from 14 to 23 December. No locusts were seen during surveys carried out in the south near the Malian border, in the east near Djanet and Illizi or in the north near El Bayadh.

• **Forecast**

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

**Morocco**

• **Situation**

No locusts were reported during November and December.

• **Forecast**

*Scattered adults may be present in parts of Western Sahara, especially near Smara, and small-scale breeding could occur in areas of recent rainfall.*

**Libyan Arab Jamahiriya**

• **Situation**

No locusts were reported during December.

• **Forecast**

*Low numbers of locusts are likely to persist and breed on a small scale in areas that remain favourable in the southwest.*

**Tunisia**

• **Situation**

No reports were received up to 30 December.

• **Forecast**

*No significant developments are likely.*

**CENTRAL REGION**

**Sudan**

• **Situation**

During December, scattered solitarious hoppers and immature and mature adults were present at several places in the Tokar Delta. A few of the adults were seen laying eggs. Further north, isolated mature adults were seen in a few places in Wadi Oko north and east of Tomala (2002N/3551E) during the last week of the month. No locusts were seen in Wadi Diib.

• **Forecast**

*Small-scale breeding will continue in the Tokar Delta and to a lesser extent elsewhere along the Red Sea coastal plains between Suakin and the Eritrean border. Limited breeding may occur in Wadi Oko/Diib.*

*Consequently, locust numbers are likely to increase slightly in both areas during the forecast period.*

**Eritrea**

• **Situation**

No locusts were seen during surveys carried out on the Red Sea coastal plains between Mehimet (1723N/3833E) and Tio (1441N/4057E) from 12 to 23 December.

• **Forecast**

*Small-scale breeding is expected to occur in a few places along the Red Sea coast, mainly in areas of recent rainfall or runoff near Shelshela and Mehimet. Consequently, locust numbers are likely to increase slightly during the forecast period.*

**Ethiopia**

• **Situation**

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

• **Forecast**

*No significant developments are likely.*

**Djibouti**

• **Situation**

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

• **Forecast**

*No significant developments are likely.*

**Somalia**

• **Situation**

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

• **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**

During December, isolated immature and mature solitarious adults were present in trees near two farms in the Western Desert at Sh. Oweinat (2219N/2845E). No locusts were seen elsewhere in the Western Desert, on the northwest coast of the Mediterranean, near Lake Nasser or along the Red Sea coastal plains.

• **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**

Isolated solitarious adults were seen at one location on the southern coastal plains of the Red Sea near Jizan (1656N/4233E) in December.

• **Forecast**

*Low numbers of solitarious adults are expected to persist 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**

During December, isolated mature adults were present on the central coastal plains of the Red Sea west of Bajil (1458N/4314E) and near Bayt Al Faqih (1430N4317E). On the northern plains, first to third instar hoppers at densities of 6-7 hoppers/$m^2$ and immature adults were seen near Midi (1619N/4248E). On the Gulf of Aden coast, isolated third to fourth instar hoppers and immature adults persisted at two places near Zinjibar (1306N/4523E) and a few immature adults were seen on the coastal plains west of Aden.

• **Forecast**

*Small-scale breeding will continue in a few places along the Red Sea causing locust numbers to increase slightly. Isolated adults may persist along parts of the Gulf of Aden coastal plains.*

**Oman**

• **Situation**

No locusts were seen on the Musandam Peninsula during the second decade of 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 on the southern coast near Bander-e Lengheh and in the interior of Sistan-Baluchistan near Iranshahr from 11 to 12 December.

• **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**

During the second half of November, 11 fifth instar hopper bands and 18 groups of immature adults formed near the Indian border in the Cholistan Desert southeast of Rahimyar Khan (2822N/7020E). Ground control teams treated 107 ha. No locusts were reported elsewhere in the summer breeding areas.

During the first half of December, five groups of immature adults were seen in the above-mentioned areas on 1-3 December and control teams treated 108 ha. During the second week, mature solitarious adults began to move towards the south and southwest, appearing in the Khairpur and Tharparkar Deserts on the 10th, as well as further west, appearing in the Nara Desert on the 12th, crossing the Indus Valley and reaching Lasbela (2612N/6620E) and the Shooli area near Turbat (2600N/6303E) on the 14th. During the second half of December, a few more mature solitarious adults appeared in the Khairpur and Tharparkar Deserts on the 21st and 22nd.

• **Forecast**

*Locust numbers are expected to increase slightly in the spring breeding areas in Baluchistan as adults arrive from the summer breeding areas along the Indian border. Small-scale breeding will take place in coastal and interior areas in Baluchistan if rainfall occurs during the forecast period but low temperatures, especially in the interior, may delay hatching and hopper development.*

**India**

• **Situation**

During the first half of December, several small immature swarms varying in size from 10 to 180 ha were present between the Rajasthan Canal and the Pakistani border where hopper bands had formed during October and November. Ground control teams treated 535 ha from 1 to 5 December. Groups of immature adults were also seen moving south in Jaisalmer and Jodhpur districts during the first week. Only isolated immature adults remained in the above areas until mid-month. Thereafter, no further locusts were reported.

• **Forecast**

*Low numbers of adults may persist in a few places that remain green between the Rajasthan Canal and the Pakistani border.*

**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)

**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 (tentative)
- **EMPRES/WR.** Steering committee meeting, Algiers (Algeria), 4-6 March (tentative)
- **CRC.** 25th Session, Dubai (UAE), 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

## 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**

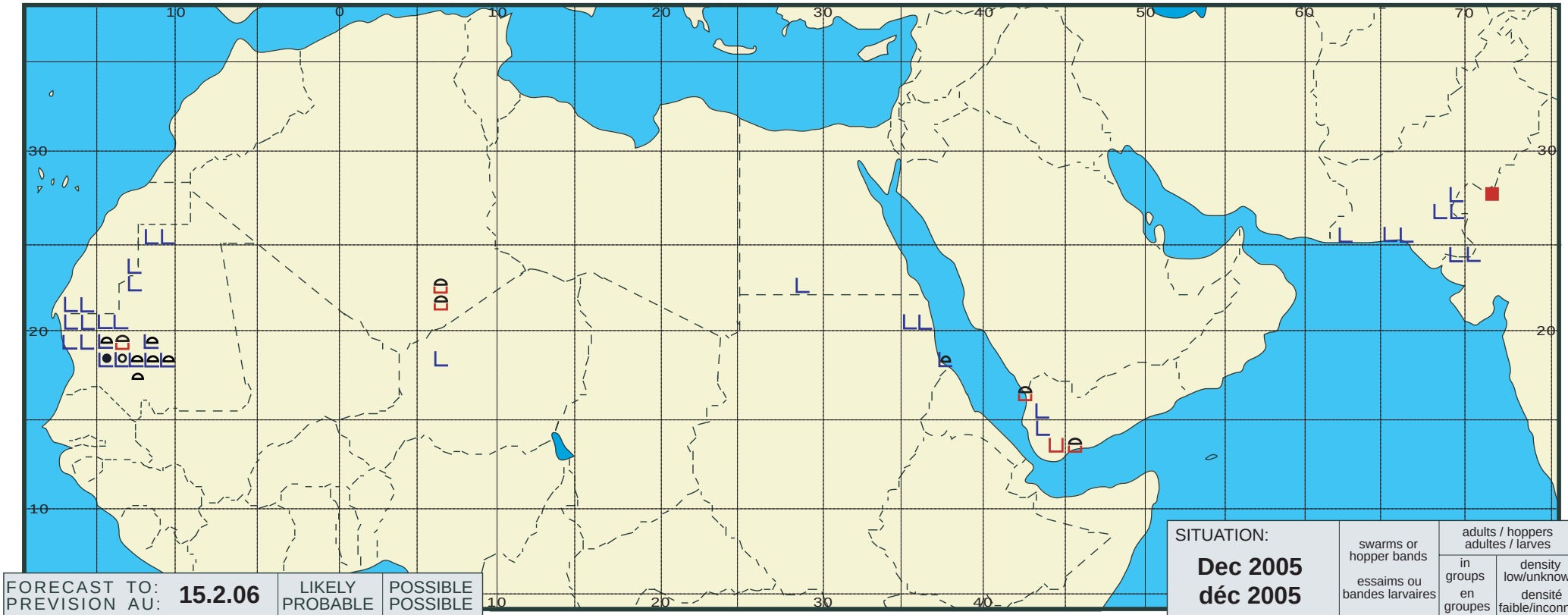
- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

**EASTERN**

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

# Desert Locust Summary
# Criquet pèlerin - Situation résumée

**327**




| FORECAST TO: PREVISION AU: **15.2.06** | LIKELY PROBABLE | POSSIBLE POSSIBLE |
|---|---|---|
| favourable breeding conditions<br>conditions favourables à la reproduction | | |
| major swarm(s)<br>essaim(s) important(s) | | |
| minor swarm(s)<br>essaim(s) limité(s) | | |
| non swarming adults<br>adultes non essaimant | | |

| SITUATION: **Dec 2005 déc 2005** | swarms or hopper bands<br>essaims ou bandes larvaires | adults / hoppers adultes / larves | |
|---|---|---|---|
| | | in groups<br>en groupes | density low/unknown<br>densité faible/inconnue |
| immature adults<br>adultes immatures | ■ | □ | ⊔ |
| mature or partly mature adults<br>adultes matures ou partiellement matures | ◣ | ◺ | L |
| adults, maturity unknown<br>adultes, maturité inconnue | ▲ | △ | ⋀ |
| egg laying or eggs<br>pontes ou œufs | ▼ | ▽ | ⋁ |
| hoppers<br>larves | ● | ○ | ◡ |
| hoppers & adults (combined symbol example)<br>larves et adultes (exemple symboles combinés) | ◘ | ◙ | ◒ |