

warning level: **CAUTION**

# DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 373

(1 Nov 2009)



## General Situation during October 2009 Forecast until mid-December 2009

An outbreak of Desert Locust developed in early October in western Mauritania. Control operations were in progress against a second generation of hatchlings and hoppers that were forming small concentrated groups and a few bands. The outbreak should be contained by early December unless unusually heavy and widespread rains fall in November. In that case, small swarms could form in early December and move north into southern Morocco, Western Sahara and northern Mauritania and breed, causing a significant increase in locust numbers that could lead to a regional upsurge. Elsewhere, the situation remained calm and vegetation was drying out in most areas. Only isolated adults were seen in parts of the northern Sahel in West Africa and on the Red Sea coast in Yemen. During the forecast period, low numbers of locusts may persist in a few parts of the northern Mali and Niger, and in northeast Chad. Small-scale breeding is likely to occur along both sides of the Red Sea.

**Western Region.** A potentially dangerous outbreak developed in western Mauritania in late September and early October. Additional national teams were deployed to conduct survey and control operations, treated nearly 4,000 ha. The outbreak is smaller than in 2003 and Mauritania is better prepared with sufficient resources to combat new hopper groups as they form during November. Very little rain fell in the Region during October, which means that breeding is likely to end shortly unless more rains fall. This,

combined with effective control operations against primarily hopper infestations, should reduce locust numbers and bring the situation under control and stop the migration of adults towards the north. So far, only isolated solitary immature adults have arrived in adjacent areas of southern Morocco and Western Sahara. Elsewhere, low numbers of adults were present in central Mali, southern Algeria, northern Niger and Chad. Small-scale breeding may have occurred in some of these places during October.

**Central Region.** Very little rain fell during October in the Region except for light showers on the Red Sea coast of Yemen where low numbers of locusts were present. Consequently, small-scale breeding is likely to occur during the forecast period, causing locust numbers to increase slightly. Elsewhere, a ground team treated solitary hoppers and adults at one place in the northern highlands of Ethiopia, and isolated adults were seen on the northern Red Sea coastal plains in Eritrea. During the forecast period, low numbers of adults are likely to appear on the Red Sea coast of Sudan, Eritrea and Saudi Arabia, and breed on a small scale in any areas that receive rainfall. No significant developments are likely.

**Eastern Region.** No significant rain fell during October and no locusts were reported in the Region. The situation will remain calm during the forecast period.

The FAO Desert Locust Bulletin is issued every month by the Desert Locust Information Service, AGP Division (Rome, Italy). It is supplemented by Alerts and Updates during periods of increased Desert Locust activity. All products are distributed by e-mail and made available on the Internet.

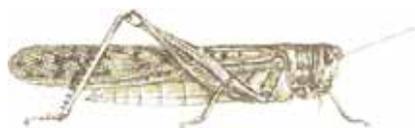
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### Weather & Ecological Conditions in October 2009

**No significant rain fell in the Desert Locust recession area during October. Consequently, vegetation was drying out or already dry in most places except for along the Red Sea coast of Yemen where conditions were favourable for breeding.**

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) moved south and consequently very little, if any, rain fell in the summer breeding areas of the northern Sahel during October. In Mauritania, vegetation first began drying out in the south and southeast and by the end of the month it had started to dry out in the west and centre of the country. In Mali, vegetation was green in the north but started to dry out by the end of the month. In Algeria, dry conditions persisted except in the extreme south along the borders of Mali and Niger between Bir Bou Mokhtar and In Guezzam where breeding conditions remained favourable. In Niger, light rains fell at the end of the month in parts of the Tamesna and Air Mountains. In Chad, vegetation started drying out by the end of October in the northeast. Elsewhere, dry conditions prevailed in the region.

In the **Central Region**, no significant rain fell during October. Consequently, vegetation continued to dry out in the summer breeding areas in the interior of Sudan and in western Eritrea. In the winter breeding areas, light to moderate rains fell on the northern Red Sea coast in Sudan and in adjacent areas of Wadi Diib on 25 October. In Eritrea, light rain fell on the central coast of the Red Sea and in the adjacent highlands between Erafile and Afabet at mid-month. More rain is probably required in both countries before ecological conditions become favourable for breeding. In Yemen, breeding conditions were favourable in most coastal areas along the Red Sea and Gulf of Aden as a result of light rains during October and good rains during August and September.

In the **Eastern Region**, no significant rain fell during October in the summer breeding areas along both sides of the Indo-Pakistan border for the third consecutive month. Consequently, vegetation

continued to dry out during the month in both countries.



### Area Treated

Ethiopia	37 ha (15 October)
Mauritania	64 ha (11-30 September; updated)
	3,865 ha (1-31 October, estimated)



### Desert Locust Situation and Forecast

*( see also the summary on page 1 )*

#### WESTERN REGION

##### **Mauritania**

##### • SITUATION

In late September and early October, a potentially serious outbreak developed between Nouakchott and Moudjeria (1752N/1219W), Boutilimit (1732N/1441W) and Akjoujt (1945N/1421W) in an area of about 400 km by 250 km. One generation of breeding had already occurred and solitarious adults were arriving from breeding areas that were drying out in the south and southeast. Hopper and adult densities increased, and solitarious and *transiens* hoppers formed small groups. During the second half of October, second-generation hatching occurred and the hatchlings and early instar hoppers formed small but dense groups. Immature solitarious and *transiens* adults formed groups near Moudjeria while mature adults formed groups in the Agual Faye area. Copulating and egg laying continued, extending towards Oujeft (2003N/1301W). Further north, mature solitarious adults and some solitarious hoppers were present near Zouerate (2244N/1221W). Ground control teams treated more than 3,800 ha during the month.

##### • FORECAST

*Hatching will continue during November and hoppers are expected to form small dense groups in currently infested areas. By the end of the month, hoppers that hatched in October will fledge and could form small groups of immature adults and perhaps a few small immature swarms. Hatching may also occur near Zouerate and Oujeft. Unless further rains fall, teams should be able to bring the situation under control and only low numbers of adults are likely to persist through December with a possibility of moving north to Inchiri and Tiris Zemmour. But if unusually good rains fall and temperatures remain warm, then another generation of breeding could occur, giving rise to hopper bands and adults swarms.*

## Mali

### • SITUATION

During October, isolated immature and mature solitary adults were seen at three places west of Hombori (1516N/0140W) at mid month. No locusts were seen during surveys between Nara (1510N/0717W) and Tombouctou (1649N/0259W).

### • FORECAST

*Low numbers of adults are likely to persist in parts of the Adrar des Iforas.*

## Niger

### • SITUATION

During October, scattered immature and mature solitary adults were present at densities up to 400 adults/ha in the Tamesna west of Agadez (1700N/0756E) between Tassara (1650N/0550E) and Arlit (1843N/0721E). Some of the adults were seen copulating and laying eggs during the first decade at four places west of Arlit.

### • Forecast

*Low numbers of hoppers and adults will persist in parts of the Tamesna where they could concentrate in a few places as vegetation dries out.*

## Chad

### • SITUATION

During October, isolated mature solitary adults were seen at a few places in the east (Biltine and BET) between Kalait (1550N/2054E) and Fada (1714N/2132E), and near Arada (1501N/2040E), in the centre (Batha and eastern Kanem) between Salal (1448N/1712E) and Haraz-Djombo (1357N/1926E), and in the west (Lac Tchad) southwest of Mao (1406N/1511E). A few adults were seen copulating near Fada in early October.

### • FORECAST

*Locust numbers will continue to decline and no significant developments are likely.*

## Senegal

### • SITUATION

No reports were received during October.

### • FORECAST

*No significant developments are likely.*

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

### • FORECAST

*No significant developments are likely.*

## Algeria

### • SITUATION

During October, isolated immature and mature solitary adults were seen in the extreme south

close to the Malian border near Bir Bou Mokhtar (2120N/0056E). No locusts were seen elsewhere along the borders of Mali and Niger.

### • FORECAST

*Low numbers of adults may persist near the borders of Mali and Niger. Low to moderate numbers of adults and perhaps a few small groups coming from Mauritania may appear near Tindouf.*

## Morocco

### • SITUATION

During the second half of October, isolated immature solitary adults were seen in the extreme south of the Western Sahara between Bir Gandouz (2136N/1628W) and Tichla (2137N/1453W), and in the centre near Oum Dreyga (2416N/1325W) as well as in northeastern Morocco near the Algerian border southeast of Bouarfa (3232N/0159W).

### • FORECAST

*Low to moderate numbers of adults and perhaps a few small groups may appear from Mauritania in the extreme south between Tichla and Laayoune, and breed if rainfall occurs.*

## Libyan Arab Jamahiriya

### • SITUATION

No reports were received during October.

### • FORECAST

*No significant developments are likely.*

## Tunisia

### • SITUATION

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

### • FORECAST

*No significant developments are likely.*

## CENTRAL REGION

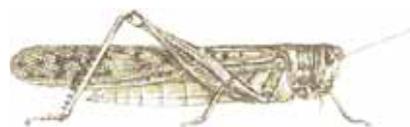
### Sudan

#### • SITUATION

No locusts were seen during surveys carried out in North Kordofan between El Obeid (1311N/3010E) and Ed Dueim (1400N/3220E) in mid-October.

#### • FORECAST

*Locust numbers will decline in the summer breeding areas as adults move to the winter breeding areas along the Red Sea coast. Low numbers of adults may first appear in Wadi Diib where it may have rained*



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*recently. Adults will also appear on the coastal plains and breed in those places that receive rainfall.*

### Eritrea

#### • SITUATION

No locusts were seen during surveys on the Red Sea coast in the third week of October between Tio (1441N/4057E) and Afabet (1612N/3841E) except for isolated solitarious adults north of Massawa at Sherbeck (1605N/3901E).

#### • FORECAST

*Low numbers of locust adults are expected to appear on the Red Sea coastal plains between Massawa and the Sudanese border, and breed on a small scale in areas that receive rainfall or runoff.*

### Ethiopia

#### • SITUATION

During October, no locusts were seen in the northern highlands except at one place (1135N/3844E) northwest of Addis Ababa where ground teams treated fifth instar solitarious hoppers and adults on 35 ha on the 15<sup>th</sup>.

#### • FORECAST

*No significant developments are likely.*

### Djibouti

#### • SITUATION

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

#### • FORECAST

*Low numbers of adults may be present in areas of earlier rainfall on the northern coast between Obock and the Eritrean border. Surveys should be undertaken to check the situation.*

### Somalia

#### • SITUATION

No reports were received during October.

#### • FORECAST

*No significant developments are likely.*

### Egypt

#### • SITUATION

During October, no locusts were seen during surveys carried out in the Western Desert near Sh. Oweinat (2219N/2845E), along Lake Nasser between Abu Simbel (2219N/3138E) and Garf Husein

(2317N/3252E), and on the Red Sea coast between Shalatyn (2308N/3535E) and the Sudanese border.

#### • FORECAST

*No significant developments are likely.*

### Saudi Arabia

#### • SITUATION

No locusts were seen during surveys carried out in October on the central and southern coast of the Red Sea and in the northern interior.

#### • FORECAST

*Low numbers of adults are likely to appear on the southern and central Red Sea coast and breed on a small scale if rainfall occurs.*

### Yemen

#### • SITUATION

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

During October, isolated immature and mature solitarious adults were scattered along the Red Sea coastal plains in the north between Suq Abs (1600N/4312E) and Midi (1619N/4248E) and in the centre between Hodeidah (1450N/4258E) and Zabid (1410N/4318E). An individual immature adult was seen on the southern coast northwest of Aden near Am Rijja (1302N/4434E).

#### • FORECAST

*Isolated adults will persist on the Red Sea coastal plains and breed on a small scale in areas of recent rainfall, causing locust numbers to increase slightly but remain below threatening levels. Regular surveys should be undertaken to monitor the situation.*

### Oman

#### • SITUATION

During October, no locusts were seen during surveys carried out in the northern interior of Dhahera between Ibri (2314N/5630E) and Buraimi (2415N/5547E).

#### • FORECAST

*No significant developments are likely.*

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

#### • FORECAST

*No significant developments are likely.*

### EASTERN REGION

#### Iran

#### • SITUATION

No locusts were seen during surveys carried out on the southeast coast near Bander-e Lengheh (2634N/5452E), Jask (2540N/5746E) and Chabahar (2517N/6036E) in October.

- **FORECAST**

*No significant developments are likely.*

### **Pakistan**

- **SITUATION**

During the second half of September, low numbers of mature solitary adults persisted in the summer breeding areas near Rahimyar Khan (2822N/7020E), Sukkur (2742N/6854E) and Mirpurkhas (2533N/6905E).

No locusts were seen in the summer breeding areas during the first fortnight of October.

- **Forecast**

*No significant developments are likely.*

### **India**

- **SITUATION**

No locusts were seen during intensive surveys carried out in October in the summer breeding areas in Rajasthan and Gujarat.

- **FORECAST**

*No significant developments are likely.*

### **Afghanistan**

- **SITUATION**

No reports received.

- **FORECAST**

*No significant developments are likely.*



## **Announcements**

**Desert Locust warning levels.** A colour-coded scheme indicates the seriousness of the current Desert Locust situation: green for *calm*, yellow for *caution*, orange for *threat* and red for *danger*. The scheme is applied to the Locust Watch web page and to the monthly bulletin's header. The levels indicate the perceived risk or threat of current Desert Locust infestations to crops and appropriate actions are suggested for each level.

**Locust reporting.** During calm (green) periods, countries should report at least once/month and send RAMSES data with a brief interpretation. During caution (yellow), threat (orange) and danger (red) periods, often associated with locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent at least twice/week within 48 hours of the latest survey. Affected countries are also encouraged to prepare decadal bulletins summarizing the situation. All information should be sent by e-mail to the FAO/ECLO Desert Locust Information Service (ecl@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.

**Google group.** FAO DLIS has established a Google group for national locust information officers to exchange opinions and share experiences regarding data management and analysis, GIS, eLocust2 and satellite imagery. Interested information officers should contact DLIS (ecl@fao.org) for details.

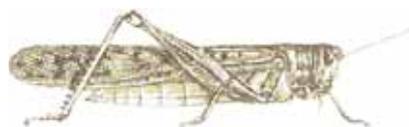
**MODIS imagery.** Columbia University's International Research Institute for Climate and Society (IRI) provides 16-day 250-metre resolution MODIS imagery as well as daily and decadal rainfall imagery for monitoring breeding conditions in the Desert Locust recession area. These products can be downloaded in different formats suitable for GIS at: [http://iridl.ideo.columbia.edu/maproom/.Food\\_Security/.Locusts/index.html](http://iridl.ideo.columbia.edu/maproom/.Food_Security/.Locusts/index.html). The site is available in English and French. Address comments and questions to Pietro Ceccato (pceccato@iri.columbia.edu).

**New information on Locust Watch.** Recent additions to the web site ([www.fao.org/ag/locusts](http://www.fao.org/ag/locusts)) are:

- **Desert Locust Survey & Control Form updated.** Publications section – Forms
- **Internet catalogue of the Pesticide Referee Group database.** Activities section – Environment and health
- **Desert Locust situation updates.** Archives Section – Briefs
- **Locust Information officer training at FAO.** Activities Section – DLIS

**2009 events.** The following activities are scheduled or planned:

- **EMPRES/WR Liaison Officers.** 8<sup>th</sup> EMPRES Liaison Officers meeting (mid-December, tentative)
- **EMPRES/WR Steering Committee.** 4<sup>th</sup> EMPRES Steering Committee meeting (mid-December, tentative)



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### Glossary of terms

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

#### **NON-GREGARIOUS ADULTS AND HOPPERS**

##### **ISOLATED (FEW)**

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

##### **SCATTERED (SOME, LOW NUMBERS)**

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

##### **GROUP**

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

#### **ADULT SWARM AND HOPPER BAND SIZES**

##### **VERY SMALL**

- swarm: less than 1 km<sup>2</sup>      • band: 1 - 25 m<sup>2</sup>

##### **SMALL**

- swarm: 1 - 10 km<sup>2</sup>      • band: 25 - 2,500 m<sup>2</sup>

##### **MEDIUM**

- swarm: 10 - 100 km<sup>2</sup>      • band: 2,500 m<sup>2</sup> - 10 ha

##### **LARGE**

- swarm: 100 - 500 km<sup>2</sup>      • band: 10 - 50 ha

##### **VERY LARGE**

- swarm: 500+ km<sup>2</sup>      • band: 50+ ha

#### **RAINFALL**

##### **LIGHT**

- 1 - 20 mm of rainfall.

##### **MODERATE**

- 21 - 50 mm of rainfall.

##### **HEAVY**

- more than 50 mm of rainfall.

#### **OTHER REPORTING TERMS**

##### **BREEDING**

- the process of reproduction from copulation to fledging.

##### **SUMMER RAINS AND BREEDING**

- July - September/October

##### **WINTER RAINS AND BREEDING**

- October - January/February

##### **SPRING RAINS AND BREEDING**

- February - June/July

##### **DECLINE**

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

##### **OUTBREAK**

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

##### **UPSURGE**

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

##### **PLAGUE**

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

##### **RECESSION**

- period without widespread and heavy infestations by swarms.

##### **REMISSION**

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

#### **WARNING LEVELS**

##### **GREEN**

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

##### **YELLOW**

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

##### **ORANGE**

- Threat. Threat to crops. Survey and control operations must be undertaken.

##### **RED**

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

#### **REGIONS**

##### **WESTERN**

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

##### **CENTRAL**

- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues

only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

**EASTERN**

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



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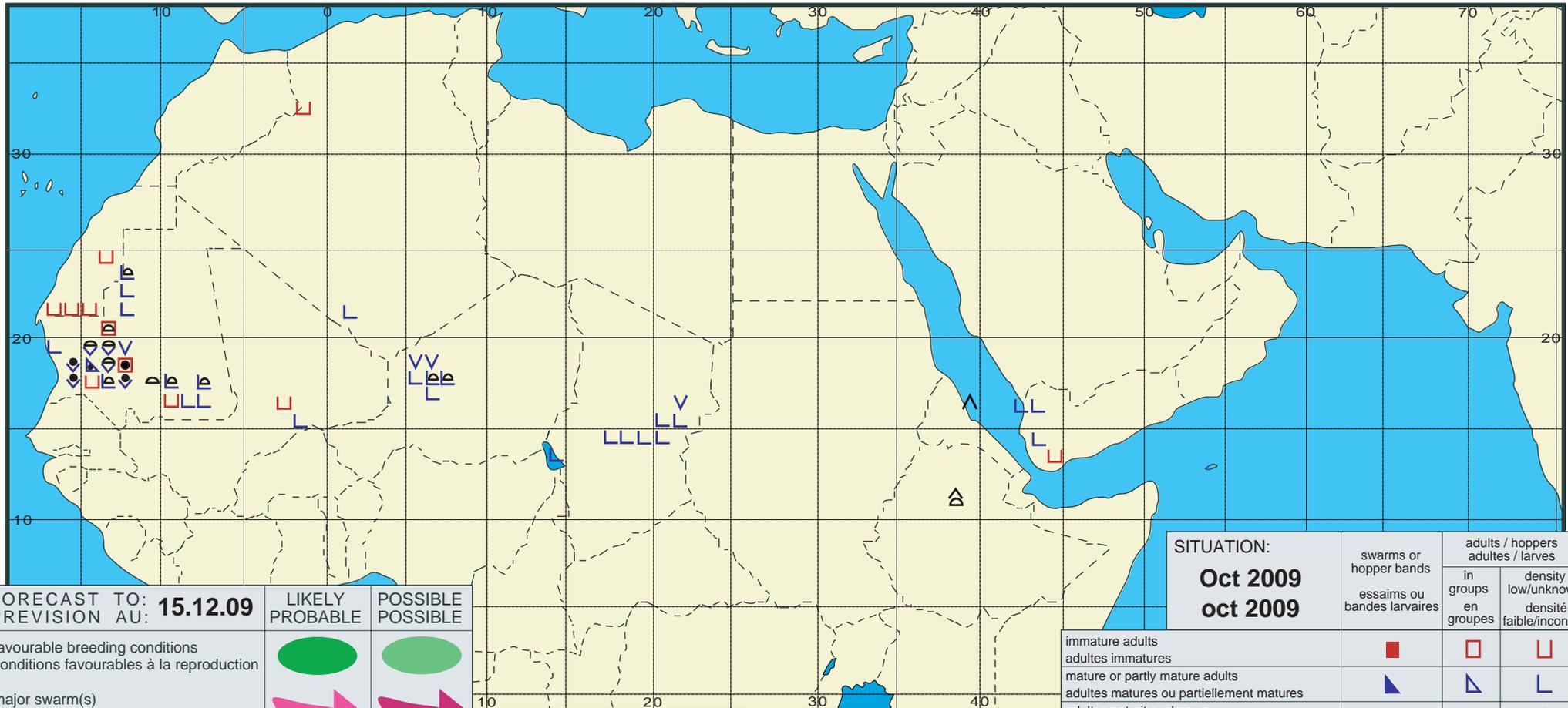
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# Desert Locust Summary

## Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU: <b>15.12.09</b>	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favorables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: <b>Oct 2009</b> oct 2009	swarms or hopper bands	adults / hoppers	
	essaims ou bandes larvaires	in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures			
mature or partly mature adults adultes matures ou partiellement matures			
adults, maturity unknown adultes, maturité inconnue			
egg laying or eggs pontes ou œufs			
hoppers larves			
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)			