

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

# DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 369

(2 July 2009)



## General Situation during June 2009 Forecast until mid-August 2009

The locust situation remained serious in the Horn of Africa in early June as small swarms formed in northern Somalia and moved to eastern Ethiopia. Although there had been a high risk of small swarms moving from Yemen and northern Somalia towards the Indo-Pakistan border, this did not occur. By the end of June, a few small swarms dispersed in the highlands of northern Ethiopia, and only scattered adults were reported in northern Somalia and Yemen. Consequently, the situation has improved in all three countries. During the forecast period, there is a moderate risk that scattered adults and perhaps a few small groups of adults from northern Ethiopia may appear in the summer breeding areas in Sudan and Eritrea and breed with the onset of the rains. Elsewhere, small-scale breeding is expected to occur in the summer breeding areas in the Sahel of West Africa and along both sides of the Indo-Pakistan border once seasonal rains commence. Locust numbers are likely to remain low and below threatening levels this summer.

**Western Region.** The locust situation remained calm during June. Small-scale breeding continued in Morocco near the Algerian border and ground control operations were undertaken. Isolated adults were present near irrigated areas in parts of the central Sahara in Algeria. No locusts were reported in West Africa but unusually heavy rain fell in northern Mauritania and parts of Western Sahara where small-scale breeding could occur. Light rain in parts

of southern Mauritania, northern Mali and Niger will allow ecological conditions to improve and small-scale breeding is likely to commence during the forecast period.

**Central Region.** Several small immature swarms formed in northwest Somalia in early June. Some of the swarms moved into eastern Ethiopia while others moved east across northern Somalia. It was not clear if any swarms reached the Gulf of Aden and crossed to Yemen. A few of the swarms in Ethiopia continued into the northern highlands where they dispersed and were difficult to treat. Conditions dried out in the interior of Yemen and only scattered adults remained. Local breeding occurred in a few places along the Nile River in northern Sudan, and a few solitary adults appeared in the summer breeding areas in Northern Kordofan. No locusts were reported elsewhere in the region. During the forecast period, small-scale breeding is likely in the summer breeding areas in Sudan and western Eritrea, and perhaps in northern Ethiopia. Small-scale breeding may occur in areas of recent rains on the Red Sea coast in Yemen.

**Eastern Region.** Local breeding continued during June in the interior of southeast Iran and ground teams treated more than 5,000 ha of hoppers. No locusts were reported in Pakistan or India. During the forecast period, small-scale breeding is likely to occur along both sides of the Indo-Pakistan border in areas that receive monsoon rains.

The FAO Desert Bulletin is issued monthly, supplemented by Updates during periods of increased Desert Locust activity, and is distributed by e-mail, FAO pouch and airmail by the Locusts and Other Migratory Pests Group, AGP Division, FAO, 00153 Rome, Italy. It is also available on the Internet.

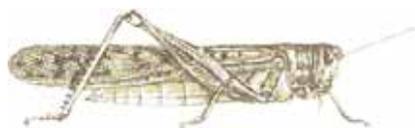
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### Weather & Ecological Conditions in June 2009

**Heavy rains in northern Mauritania and Western Sahara and local showers in parts of the northern Sahel in West Africa during June should allow ecological conditions to improve for summer breeding. At the end of June, monsoon rains had commenced in the summer breeding areas in India. Ecological conditions dried out in the interior of Yemen and in northern Somalia.**

In the **Western Region**, good rains fell in parts of the summer breeding areas in the northern Sahel in mid-June. Unusually heavy rains fell on 14-19 June in northern Mauritania between Zouerate and Bir Moghreïn and in adjacent areas of Western Sahara. The heaviest showers were reported near Zouerate where 110 mm fell in two days. Light rain fell near Atar and moderate showers were reported in the central and southeastern parts of the summer breeding areas in Mauritania. Light rains fell from the Adrar des Iforas in northern Mali to the Air Mountains and the Termit area in Niger. As a result of these rains, ecological conditions began to improve slightly in parts of the summer breeding areas in the northern Sahel of Mauritania, Mali and Niger. In Northwest Africa, annual vegetation was drying out south of the Atlas Mountains in Morocco near the border of Algeria, in the Ziz-Ghris and Draa valleys and near Bouarfa. In Algeria, dry conditions prevailed in the central and southern Sahara except near irrigated areas in the Adrar region where vegetation was green.

In the **Central Region**, light rains fell during the first week of June in the summer breeding areas of Sudan between El Fasher and Geneina, from Ed Dueim to Kassala and in the Red Sea Hills. Thereafter, rainfall remained south of 13N. Vegetation was becoming green in parts of eastern Sudan between Gedaref and Kassala, but remained dry in Northern Kordofan and in the Northern State except for cropping areas along the Nile River. In the Horn of Africa, light rains fell at times over the Harar Highlands in eastern Ethiopia and extended to the Somali plateau near Hargeisa. Vegetation remained green in these areas but was dry or drying out elsewhere in northern Somalia. Good rains fell in the highlands of Amhara and Tigray in

northern Ethiopia where vegetation was green. Light to moderate rains fell at times on the Red Sea coast and in the nearby mountains between Qunfidah, Saudi Arabia and the southern Tihama plains in Yemen, which should be sufficient to allow ecological conditions to improve for breeding. Vegetation was dry or drying out in the interior of Yemen because of a lack of rainfall since May.

In the **Eastern Region**, light to moderate pre-monsoon rains fell in parts of northeast Rajasthan during the first half of June. By the end of the month, monsoon showers had covered most of Gujarat and reached southern Rajasthan. Light rains fell in parts of the spring breeding areas of western Pakistan and southeast Iran but vegetation continued to dry out except for western portions of the Jaz Murian Basin near Kahnuj, Iran.



### Area Treated

More than 9,000 ha were treated during June as follows:

Ethiopia	552 ha (May, updated)
	2,207 ha (June)
Iran	0 ha (May, corrected)
	5,500 ha (June)
Morocco	1,557 ha (June)



### Desert Locust Situation and Forecast

( see also the summary on page 1 )

#### WESTERN REGION

##### **Mauritania**

###### • SITUATION

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

###### • FORECAST

*Isolated adults may appear in areas of recent rain near Zouerate and in the south and southeast, and breed on a small scale. Breeding is likely to extend to central and western parts of the south if these areas receive rain during the forecast period.*

##### **Mali**

###### • SITUATION

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

###### • FORECAST

*Isolated adults may be present in parts of the Adrar des Iforas and breed on a small scale if more rains fall.*

## Niger

### • SITUATION

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

### • FORECAST

*Isolated adults are likely to be present in southern Tamesna and breed on a small scale if more rains fall.*

## Chad

### • SITUATION

No reports were received during June.

### • FORECAST

*Scattered adults may appear in the northeast and start to breed on a small scale if rains fall.*

## Senegal

### • SITUATION

No locusts were reported during June.

### • FORECAST

*No significant developments are likely.*

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

### • FORECAST

*No significant developments are likely.*

## Algeria

### • SITUATION

During June, isolated mature solitary adults were present in a few irrigated perimeters in the central Sahara between Adrar (2753N/0017W) and In Salah (2712N/0229E), and in a wadi to the west of Tamanrasset (2250N/0528E) in the south.

### • FORECAST

*Small infestations could persist near irrigated areas in Adrar. Scattered adults may appear further south and breed on a small scale if rains fall.*

## Morocco

### • SITUATION

During the first half of June, solitary and *transiens* fifth instar hoppers and fledglings, at densities of up to 5 locusts/m<sup>2</sup>, were present in the Draa Valley and along the Algerian border from south of Tata (2944N/0758W) to Erfoud (3128N/0410W). By mid-month, most of the hoppers had fledged and immature solitary and *transiens* adults were seen at densities of about 250 adults/ha except near Ksar Chair (2907N/0759W) where up to 2,000 adults/ha were present. On the 17<sup>th</sup>, solitary adults were seen laying eggs south of Guelmim (2859N/1003W). In the northeast, locust densities increased near Figuig (3207N/0113W) where immature and mature solitary adults were present. By the end of the

month, a few small adult groups had formed. Ground teams treated 1,557 ha during June.

In Western Sahara, scattered solitary adults were seen in the northeast near Mehaires (2613N/1109W) on 19 June.

### • FORECAST

*Locust numbers will decline along the Algerian border as vegetation dries out. Limited hatching may occur by early July south of Guelmim with fledging by early August. Scattered adults may appear in areas of recent rainfall in the Western Sahara and breed on a small scale.*

## Libyan Arab Jamahiriya

### • SITUATION

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

### • FORECAST

*No significant developments are likely.*

## Tunisia

### • SITUATION

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

### • FORECAST

*No significant developments are likely.*

## CENTRAL REGION

### Sudan

### • SITUATION

During the first week of June, scattered mature adults were seen in Northern Kordofan between El Obeid (1311N/3010E) and En Nahud (1246N/2828E). Scattered immature and mature solitary adults persisted along the Nile River in the Northern State southwest of Merowe (1830N/3149E) and in the River Nile State between Abu Hamed (1932N/3320E) and Ed Damer (1734N/3358E). Locust numbers were slightly higher in River Nile where second to fourth instar solitary hoppers were present at densities of 2-3 hoppers/m<sup>2</sup> near Berber (1801N/3400E) and some adults were forming small groups.

### • FORECAST

*There is a moderate risk of scattered adults and perhaps a few small groups of adults appearing in the summer breeding areas from northern Ethiopia during the first half of July. Small-scale breeding will commence in the summer breeding areas once rains fall, causing locust numbers to increase in parts of*



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*Khartoum, Northern, River Nile, Kassala, Red Sea, White Nile and Northern Kordofan States. Scattered adults are likely to persist and breed along the Nile River between Ed Damer and Dongola.*

### Eritrea

#### • SITUATION

No reports were received during June.

#### • FORECAST

*There is a moderate risk of scattered adults and perhaps a few small groups of adults appearing in the western lowlands from adjacent areas of northern Ethiopia during the first half of July. If rains fall, small-scale breeding will occur.*

### Ethiopia

#### • SITUATION

During the first week of June, at least five small immature swarms ranging in size from 2.5 ha to 4 km<sup>2</sup> crossed from northern Somalia to the Dire Dawa (0935N/4150E) area. The swarms reportedly moved back and forth over the border until 10 June and then remained in this area during the following week when aerial control operations were carried out. A few immature swarms were reported in the central Rift Valley from 4 to 17 June. Several of these swarms continued northwest into the southern highlands of Amhara where they split up into smaller swarmlets and dispersed throughout the highlands, reaching southern Tigray on the 12<sup>th</sup> and coming to within about 50 km of Lake Tana by the last week of the month. During June, 1,797 ha were treated by air and 410 ha by ground.

#### • FORECAST

*A few small swarms may appear in the northern highlands from the central Rift Valley in early July. If so, they are likely to disperse, and scattered adults and perhaps a few small groups may move to the summer breeding areas in central Sudan and western Eritrea. Similar populations are likely to persist in the Harar highlands and on the plains near Jijiga.*

### Djibouti

#### • SITUATION

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

#### • FORECAST

*No significant developments are likely.*

### Somalia

#### • SITUATION

During the first decade of June, several immature swarms were seen on the northwest coast near Bulhar (1023N/4425E), on the escarpment from south of Silil (1058N/4326E) to Erigavo (1040N/4720E) and on the plateau between Boroma (0956N/4313E) and Hargeisa (0931N/4402E). The swarms were highly mobile. The swarms west of Hargeisa moved southwest into Ethiopia while those to the east moved northeast towards Erigavo and the Gulf of Aden. One swarm was seen on the plateau near Burao (0931N/4533E) on the 12<sup>th</sup> but thereafter, no locusts were reported except for a swarm on the 22<sup>nd</sup> along the escarpment north of Burao, another swarm near Erigavo, and some scattered immature solitarious adults on the coast near Berbera and Bulhar. No locusts were seen on the plateau during surveys carried out on 20-24 June.

#### • FORECAST

*Unless further rain falls, current infestations will continue to decline and no significant developments are likely.*

### Egypt

#### • SITUATION

During June, no locusts were seen during surveys carried out in the Western Desert between Farafra (2710N/2818E) and Dakhla (2530N/2900E), and near Sh. Oweinat (2219N/2845E) and Abu Simbel (2219N/3138E).

#### • FORECAST

*No significant developments are likely.*

### Saudi Arabia

#### • SITUATION

During June, no locusts were seen during surveys carried out on the Red Sea coast between Umm Lajj (2501N/3716E) and Lith (2008N/4016E), in the Asir Mountains near Khamis Mushait (1819N/4245E) and in the spring breeding areas of the interior near Wadi Dawasir (2027N/4534E), Buraydah (2621N/4358E), Riyadh (2439N/4646E) and in the Nafud.

#### • FORECAST

*Low numbers of adults could appear on the Red Sea coast in areas of recent rainfall near Qunfidah.*

### Yemen

#### • SITUATION

During the last week of June, scattered immature solitarious adults at densities up to 875 adults/ha were seen in the interior northeast of Al Abr (1608N/4714E) in the Zamakh area (ca. 1631N/4738E) and in Minwakh (1650N/4812E) as well as in a few places in Wadi Hadhramaut near Sayun (1559N/4844E). No

locusts were seen along the southern coast between Zinjibar (1306N/4523E) and Mukalla (1431N/4908E).

- **FORECAST**

*Unless rainfall occurs, locust numbers will continue to decline in the interior. There is a moderate risk that low numbers of adults could appear in areas of recent rainfall on the Tihama coast of the Red Sea and eventually lay eggs. Regular surveys are recommended in all areas.*

### **Oman**

- **SITUATION**

During June, no locusts were seen during surveys carried out in the southern interior along the Yemeni border near Maziuna (1750N/5239E) and in the northern interior between Buraimi (2415N/5547E) and Sur (2234N/5930E).

- **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**

During the first week of June, groups of second to fourth instar solitarious hoppers at densities of 15 hoppers/m<sup>2</sup> were present in the Jaz Murian Basin southeast of Kahnuj (2757N/5742E). Second to fifth instar hoppers persisted in the area during the remainder of the month but densities declined. Ground teams treated 5,500 ha. No locusts were seen during surveys carried out on the coast near Jask (2540N/5746E) and Bander-e Lengheh (2634N/5452E).

- **FORECAST**

*No significant developments are likely.*

### **Pakistan**

- **SITUATION**

During the second half of May, isolated mature solitarious adults were present on the coast of Baluchistan near Pasni (2515N/6328E).

During the first half of June, no locusts were seen during surveys carried out in the spring breeding areas of the interior of Baluchistan or in the summer breeding areas in the Cholistan Desert.

- **Forecast**

*Low numbers of adults are likely to be present in the summer breeding areas between Tharparkar and Cholistan and will breed on a small scale once the monsoon rains commence.*

### **India**

- **SITUATION**

No locusts were seen during surveys in Rajasthan and Gujarat during June.

- **FORECAST**

*Low numbers of adults are likely to be present in parts of Gujarat and Rajasthan. Small-scale breeding is expected to occur with hatching commencing by the end of July.*

### **Afghanistan**

- **SITUATION**

No reports received.

- **FORECAST**

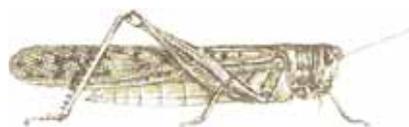
*No significant developments are likely.*



## **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 (eclo@fao.org). Information received by the end of the month will be included in the FAO Desert Locust Bulletin for the current month; otherwise, it will not appear until the following month. Reports should be sent even if no locusts were found or if no surveys were conducted.



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**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 (eclco@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.ldeo.columbia.edu/maproom/.Food\\_Security/.Locusts/index.html](http://iridl.ldeo.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:

- **39<sup>th</sup> session DLCC final report.** Publications section – Reports
- **2009 Iran/Pakistan Joint survey results.** Publications section – Reports
- **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 (10, 12, 19 June).** Archives Section – Briefs

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

- **CRC Training.** 5<sup>th</sup> Desert Locust sub-regional training course, Damascus, Syria (3-17 July)
- **EMPRES/WR Locust Information.** Regional workshop for Desert Locust Information Officers, Algiers (13-15 July)
- **CRC Planning.** Contingency planning workshop, Cairo (26-31 July)
- **EMPRES/WR Research.** Regional workshop on Desert Locust research, Dakar (5-9 October)
- **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)



## 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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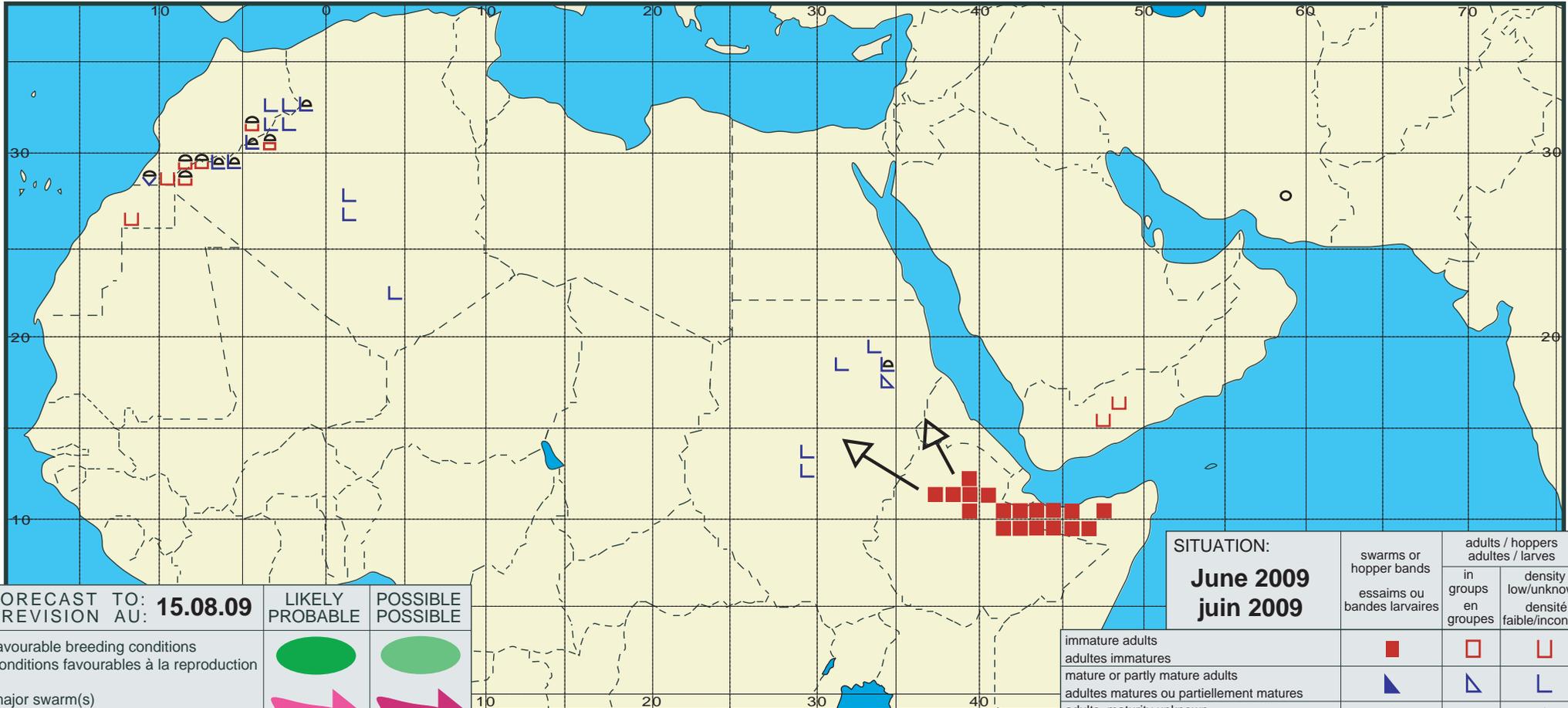
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# Desert Locust Summary

## Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU: <b>15.08.09</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		

<b>SITUATION:</b> <b>June 2009</b> <b>juin 2009</b>	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)			