

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

# DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 367

(5 May 2009)



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

The locust situation remained a cause for concern in Yemen and northern Somalia where swarms formed during April and moved to the interior of both countries as well as into northeast Ethiopia. Ground and aerial control operations were undertaken in northern Somalia that included the use of bio-pesticides. Breeding will occur in the three countries with hatching and formation of hopper groups and bands in May. The situation requires intensive monitoring and control in order to reduce the possibility of new swarms forming by mid June that could threaten other countries in the Central Region and perhaps Southwest Asia. Elsewhere, control operations were carried out against hopper infestations on the Red Sea coast of Saudi Arabia. Scattered adults were present in the spring breeding areas in Northwest Africa and Southwest Asia where small-scale breeding may occur during May.

**Western Region.** Scattered solitary adults were present south of the Atlas Mountains in Morocco and Algeria during April. Small-scale breeding is expected to occur in some areas but locust numbers will remain low. No surveys were undertaken in the Sahel in West Africa where vegetation remained dry and temperatures were high. Nevertheless, low numbers of locusts probably persisted in parts of northwest Mauritania and in northern Mali and Niger. A few locusts may start to appear in the summer breeding areas of southern Mauritania in mid-June.

**Central Region.** The situation remained serious in Yemen and Somalia during April as a result of an outbreak that developed in each country in March. Several swarms formed on the coast in northwest Somalia and moved up the escarpment to the plateau. Although nearly 800 ha were treated in northern Somalia, a few swarms escaped and reached northeast Ethiopia. In Yemen, swarms formed on the coast and moved to the interior desert where good rains fell and egg laying was seen. At least one swarm reached the central highlands. Hatching and hopper band formation will occur during May in the three countries that, if not controlled, could lead to the formation of small swarms by mid-June, some of which could eventually move northwest towards Eritrea and Sudan (as the ITCZ move north) or northeast towards the Indo-Pakistan border. In Saudi Arabia, locusts increased in one area on the Red Sea coast from breeding that occurred in December and January. Ground teams treated more than 200 ha of hopper groups and bands. The situation remained calm elsewhere in the region.

**Eastern Region.** Scattered adults were present during April in the spring breeding areas of southeast Iran and western Pakistan. Limited control was undertaken against hoppers in the interior of Pakistan. Small-scale breeding may take place in May in both countries but locust numbers will remain low. There is a low risk that a few small swarms from the Arabian Peninsula and Horn of Africa could reach the Indo-Pakistan border at the end of the forecast period.

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

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### Weather & Ecological Conditions in April 2009

**Widespread rains fell in early April over the Arabian Peninsula and Horn of Africa, and to a lesser extent in the spring breeding areas in Northwest Africa and Southwest Asia. Ecological conditions improved and were favourable for breeding in all of these areas.**

In the **Western Region**, very little rain fell during April except for light rains at times in the spring breeding areas on the southern side of the Atlas Mountains in Morocco and Algeria. Consequently, ecological conditions were favourable for breeding in western Algeria northwest of Tindouf and in the Saoura Valley near Bechar. Conditions were also favourable in the central Sahara near irrigated farms in the Adrar area. Vegetation was green near In Salah but continued to dry out in the southern Sahara west of Tamanrasset and Djanet. In Morocco, vegetation was green and breeding conditions were favourable in the Draa Valley and Ziz-Ghris Valley along the Algerian border. Further south, annual vegetation was drying out but remained sufficiently green in a few wadis in Western Sahara and in adjacent areas of northern Mauritania for locust survival. No significant rain fell in the Sahel in West Africa where temperatures remained high and vegetation was dry.

In the **Central Region**, good rains fell over the Arabian Peninsula and the Horn of Africa during the first decade of April. In Yemen, light to moderate rains fell in most parts of the highlands and interior (Shabwah, Hadhramaut and Al Mahra), extending to southern Oman. Similar rains fell throughout the spring breeding areas in the interior of Saudi Arabia. In northern Somalia, rains fell on the coast, escarpment and plateau from the Djibouti border to Erigavo. In Ethiopia, good rains fell in the Harar Highlands, reaching the western Ogaden. Consequently, ecological conditions improved and became favourable for breeding in all of these areas. Rains declined during the remainder of the month and only light rains fell on the escarpment in northern Somalia and in the Harar highlands and Ogaden in Ethiopia. Ecological conditions remained dry along both sides of the Red Sea except for the coast between Qunfidah

and Lith, Saudi Arabia where small areas of green vegetation were present.

In the **Eastern Region**, ecological conditions improved during April in the spring breeding areas in western Pakistan and southeast Iran from rains that fell in late March and the first half of April. Consequently, conditions were favourable for small-scale breeding along parts of the coast between Uthal, Pakistan and Jask, Iran as well as in adjacent areas of the interior.



### Area Treated

Ethiopia	60 ha (April)
Pakistan	10 ha (12 April)
Saudi Arabia	239 ha (April)
Somalia	774 ha (April)
Yemen	4,740 ha (March, updated)



### 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 April.

###### • FORECAST

*Isolated adults that may be present in parts of the northwest will gradually move towards the south during the forecast period.*

##### **Mali**

###### • SITUATION

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

###### • FORECAST

*Isolated adults may be present in parts of the Adrar des Iforas where they are expected to persist during the forecast period.*

##### **Niger**

###### • SITUATION

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

###### • Forecast

*Isolated adults may be present in parts of the Tamesna and Air Mountains where they are expected to persist during the forecast period.*

## Chad

### • SITUATION

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

### • FORECAST

*No significant developments are likely.*

## Senegal

### • SITUATION

No locusts were seen during surveys carried out in the north near the Senegal River between Dagana (1631N/1530W) and Matam (1540N/1318W) in April.

### • 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 April, scattered mature solitarious adults persisted in the central Sahara near irrigated cropping areas in the Adrar (2753N/0017W) region. A few solitarious adults were also present west of Beni Abbes (3011N/0214W), In Salah (2712N/0229E) and Djanet (2434N/0930E). No locusts were seen near Tindouf (2741N/0811W) and Tamanrasset (2250N/0528E).

### • FORECAST

*Low numbers of solitarious adults are likely to persist in parts of the central and western Sahara. Small-scale breeding could occur in favourable areas between Tindouf and Beni Abbes as well as near irrigated areas near Adrar.*

## Morocco

### • SITUATION

There was an increase of reports of scattered mature solitarious adults during April along the Algerian border from northeast of Zag (2800N/0920W) to Bouarfa (3232N/0159W). Some adults were seen copulating in the Draa Valley southwest of Tata (2944N/0758W) and Erfoud (3128N/0410W). Low numbers of mature solitarious adults were also seen between Guelmim (2859N/1003W) and Tan-tan (2827N/1109W). Scattered immature adults persisted in the northeastern part of Western Sahara near Bir Lahlou (2619N/0933W).

### • FORECAST

*Limited hatching is likely to occur along the Algerian border in the Draa and Ziz-Ghris valleys but locust numbers will remain low.*

## Libyan Arab Jamahiriya

### • SITUATION

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

### • FORECAST

*No significant developments are likely.*

## Tunisia

### • SITUATION

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

### • FORECAST

*No significant developments are likely.*

## CENTRAL REGION

### Sudan

#### • SITUATION

Scattered immature solitarious adults at densities of 200 adults/ha were seen at one location on the Red Sea coast near Aqiq (1813N/3811E) on 20-22 April. No locusts were seen elsewhere on the coast between Suakin (1906N/3719E) and the Eritrean border.

#### • Forecast

*There may be a low risk of a few swarms appearing in summer breeding areas at the end of the forecast period from the Horn of Africa, or adults from the winter breeding areas along the Red Sea coast.*

### Eritrea

#### • SITUATION

No locusts were seen during surveys carried out on the Red Sea coastal plains on 22-23 April.

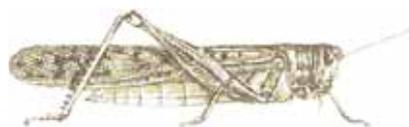
#### • FORECAST

*There may be a low risk of a few swarms appearing in summer breeding areas at the end of the forecast period from the Horn of Africa.*

### Ethiopia

#### • SITUATION

During April, locusts moved from northern Somalia towards Dire Dawa (0935N/4150E). On the 6<sup>th</sup>, an immature swarm crossed the border at Abdirkadi (1036N/4240E). Isolated immature and mature solitarious adults were seen on the 9-11<sup>th</sup> along the railway near Aysha (1045N/4234E) and the Djibouti and Somalia borders. On the 25-26<sup>th</sup>, at least one swarm moved to within about 50 km of Dire Dawa and a 26 km<sup>2</sup> swarm was partially sprayed (60 ha) the next day. Locals reported groups of adults in nearby areas.



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### • FORECAST

*There is a moderate risk that a few more groups of adults and small swarms could appear in the Harar Highlands, on the escarpment near Dire Dawa and Jijiga, and in the Ogaden in early May. The adults will probably disperse in these areas and breed on a small to moderate scale with hatching and possible hopper band formation during May.*

### Djibouti

#### • SITUATION

Scattered mature gregarious adults and a few groups were seen along the Somalia border between the coast and Holhol (1118N/4255E) on 14-19 April.

#### • FORECAST

*No significant developments are likely.*

### Somalia

#### • SITUATION

Nearly two dozen medium density late instar hopper groups and bands, mixed with fledglings and mature solitary adults and groups, were present on the northwest coast near Silil (1058N/4326E) during the first decade of April. A few hopper bands and groups of mature adults were also reported on the escarpment north of Boroma (0956N/4313E), indicating that previous breeding was more widespread than expected. A large immature swarm moved up the escarpment towards Ethiopia on the 6<sup>th</sup>, and a few other immature and mature swarms moved east along the escarpment towards Burao (0931N/4533E) in the following days. Some egg laying was reported on the coast and escarpment near Lughaye (1041N/4356E) and on the plateau east of Hargeisa (0931N/4402E). On 20-23 April, several mature swarms moved from the coast up the escarpment towards Boroma while other mature swarms moved east of Berbera (1028N/4502E) and up the escarpment to lay eggs. Aircraft sprayed 550 ha (with Green Muscle) and ground teams treated 224 ha in April.

#### • FORECAST

*Hatching is expected to occur in early May on the escarpment and plateau between Boroma and Erigavo, and to a lesser extent on the northwest coast near Lughaye. Hoppers may form small groups and bands, and fledge from early June onwards, causing*

*small groups and perhaps a few small swarms to form by mid-month.*

### Egypt

#### • SITUATION

No locusts were seen during surveys carried out in April in the Western Desert near Sh. Oweinat (2219N/2845E), along Lake Nasser near Tushka (2247N/3126E) and Abu Simbel (2219N/3138E), and on the Red Sea coast between Berenice (2359N/3524E) and the Sudanese border.

#### • FORECAST

*No significant developments are likely.*

### Saudi Arabia

#### • SITUATION

During April, groups of third to fifth instar hoppers and nearly two dozen very small hopper bands, mixed with solitary fledglings and immature adults at densities up to 400 adults/ha were present along a 40 km stretch of the Red Sea coast between Lith (2008N/4016E) and Qunfidah (1909N/4107E). Ground teams treated 239 ha. No locusts were seen elsewhere on the coast or in the interior.

#### • FORECAST

*Any hoppers that remain between Lith and Qunfidah will fledge by early June and, thereafter, locust numbers are expected to decline as vegetation dries out.*

### Yemen

#### • SITUATION

During the first half of April, small immature swarms progressively moved northwest from the southern coast towards the interior, reaching Mayfa'ah (1417N/4734E) on the 4<sup>th</sup>, Ataq (1435N/4649E) on the 5<sup>th</sup>, Bayhan (1452N/4545E) on the 8<sup>th</sup>, Marib (1527N/4519E) on the 12<sup>th</sup>, then moving east towards Wadi Hadhramaut, reaching Shebam (1555N/4837E) on the 14<sup>th</sup>. There were several more reports of mature swarms between Al Abr (1608N/4714E) and Sayun (1559N/4844E) in the following days. Some of the swarms may have veered further north towards Minwakh (1650N/4812E) and Hazar (1744N/4901E) as groups of gregarious adults at densities up to 50 adults/m<sup>2</sup> were laying eggs on 19-22 April. Adult groups at densities up to 15 adults/m<sup>2</sup> also laid eggs between Ataq and Bayhan. On the 27<sup>th</sup>, an immature swarm was seen in the central highlands near Dhamar (1433N/4424E) that split into two and dispersed towards the southwest and northwest.

#### • FORECAST

*Moderate scale hatching is expected to start in early May in the interior of Shabwah and Hadhramaut and, perhaps to a lesser extent in Al Mahra. In some areas, hoppers are likely to form small groups and*

bands. Fledging should start in early June, causing small swarms to form by mid-month. Locusts in the highlands may persist, mature and breed, or migrate either to the Red Sea coast or to the interior.

#### Oman

##### • SITUATION

No locusts were seen during surveys carried out in Dakhiliya, Musandam, Batinah and Muscat regions in April.

##### • FORECAST

*There is a moderate risk that adults and perhaps a few small groups arrived from eastern Yemen in the extreme south of Dhofar where small-scale breeding could occur in areas of recent rains. At the end of the forecast period, there is a low risk that a few swarms may appear in the south and move northwards along the central coast.*

**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 April, isolated mature adults were seen in the last week at one place on the southeast coast near Chabahar (2517N/6036E) and at two places in the interior west of Bampur (2711N/6028E). No locusts were seen elsewhere on the coast or interior during a joint survey with Pakistan.

##### • FORECAST

*Small-scale breeding may take place in early May in areas that remain favourable along the coast and interior of the southeast. Thereafter, conditions will start to dry out and locust numbers are likely to decline.*

#### Pakistan

##### • SITUATION

During the second half of March, isolated immature and mature solitary adults persisted in the spring breeding areas in Baluchistan near Panjgur (2658N/6406E) and Uthal (2548N/6637E).

During April, isolated immature adults were seen at two places near Kharan (2832N/6526E) and at one location southwest of Panjgur. Ground teams treated 10 ha of second and third instar hoppers in the northern interior of Baluchistan southwest of Nushki near Mull (2920N/6545E) on 12 April.

##### • Forecast

*Small-scale breeding may take place in early May in areas that remain favourable along the coast and*

*interior of Baluchistan. Thereafter, conditions will start to dry out and locust numbers are likely to decline. There is a low risk that a few small swarms from the Arabian Peninsula and the Horn of Africa could reach the Indo-Pakistan border at the end of the forecast period.*

#### India

##### • SITUATION

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

##### • FORECAST

*There is a low risk that a few small swarms from the Arabian Peninsula and Horn of Africa could reach the Indo-Pakistan border at the end of the forecast period.*

#### 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



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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 (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).

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

- **CRC Equipment evaluation.** Sprayers and protective clothing testing workshop, Ismailia, Egypt (9-19 May)
- **CRC/SWAC Locust Information.** Inter-regional workshop for Desert Locust Information Officers in the CRC and SWAC, Cairo (27-28 May)
- **CRC Aerial training.** 2<sup>nd</sup> regional aerial training course, Lake Zeway, Ethiopia (7-12 June)
- **CLCPRO.** 5<sup>th</sup> Executive Committee (22-23 June) and 5<sup>th</sup> CLCPRO Session (24-27 June), Agadir (Morocco)
- **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 (early October, tentative)

- **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

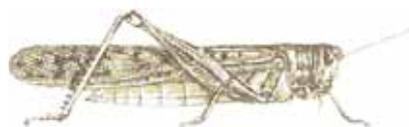
- locust-affected countries in West and North-West Africa: Algeria, Chad, Libya, Mali, Mauritania, Morocco, Niger, Senegal, Tunisia; during plagues only: Burkino Faso, Cape Verde, Gambia, Guinea and Guinea-Bissau.

#### 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.



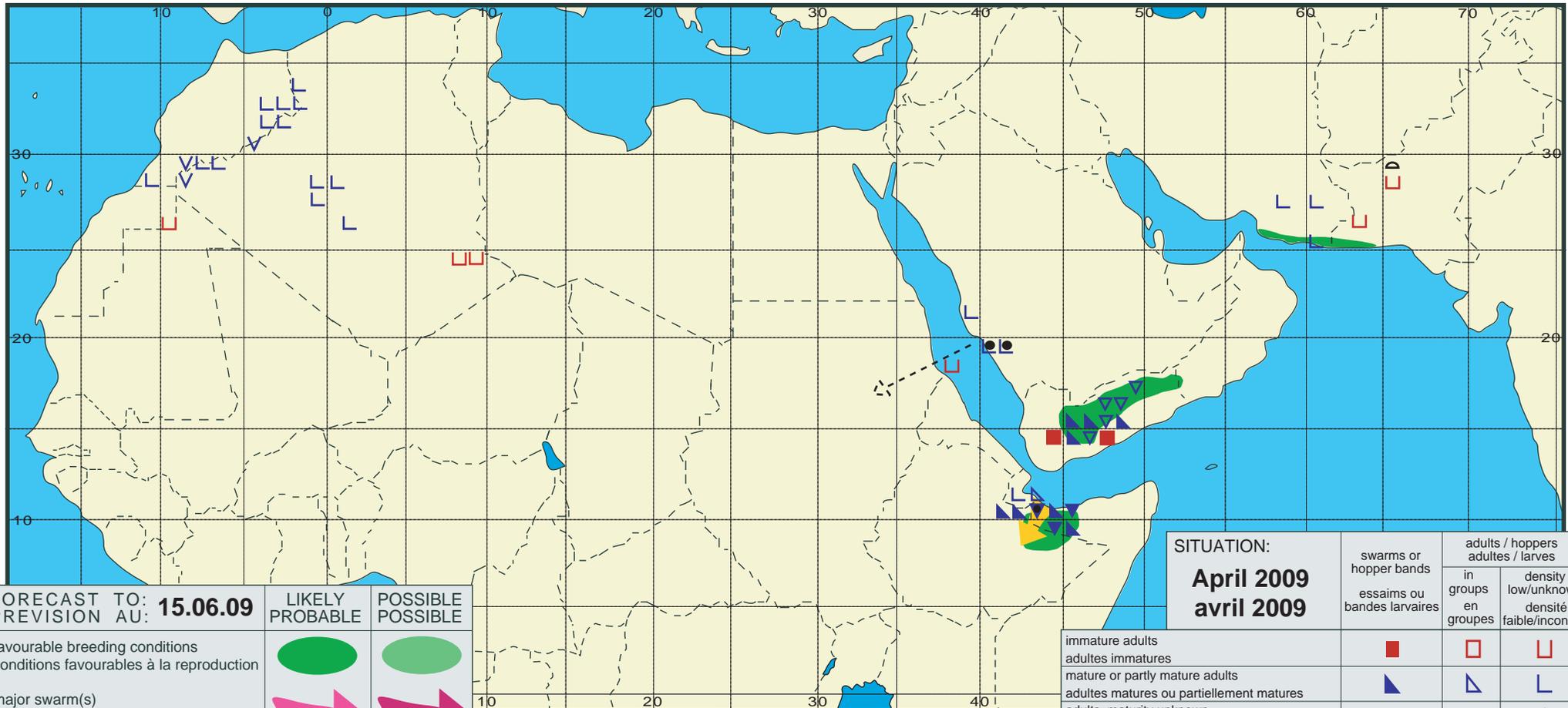
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# Desert Locust Summary

## Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU: <b>15.06.09</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>April 2009</b> <b>avril 2009</b>	swarms or hopper bands essaims ou bandes larvaires	adults / hoppers adultes / larves	
		in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures			
mature or partly mature adults adultes matures ou partiellement matures			
adults, maturity unknown adultes, maturité inconnue			
egg laying or eggs pontes ou œufs			
hoppers larves			
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)			