

warning level: **CAUTION**

# DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No.390



**General Situation during March 2011  
Forecast until mid-May 2011**

(4 Apr 2011)

**Desert Locust infestations persisted during March in Sudan, Saudi Arabia, Egypt and Mauritania as a result of continued breeding. Substantial aerial and ground control operations were undertaken against hopper bands and swarms on the Red Sea coast in Saudi Arabia. Control operations declined in Sudan, and northwest Mauritania, but increased in Egypt. Smaller scale operations took place in southern Morocco and Algeria. If the remaining infestations in Saudi Arabia are not controlled, new adult groups and small swarms could form on the coast and move into the interior during April. From early May onwards, there is an increased risk that locusts could cross the Red Sea to Sudan. In Northwest Africa, adults and small groups in northwest Mauritania and southern Morocco could move to the southern side of the Atlas Mountains in Morocco and Algeria and lay eggs. Therefore, all efforts should be made to control current infestations in order to reduce migration to the spring breeding areas.**

**Western Region.** Locust infestations declined during March in northwest **Mauritania** even though small-scale breeding continued for a sixth consecutive month, and hoppers and adults formed small groups that were treated (4,768 ha). Small adult groups and two small swarms appeared in adjacent areas of southern Western Sahara in **Morocco** and laid eggs. Control teams treated 314 ha. Limited control operations (290 ha) were also carried out in the central Sahara of **Algeria** against adult groups. A

few adults were reported on the Tamesna Plains in northern **Niger**. During the forecast period, locust numbers are expected to continue to decline in Mauritania although limited hatching will occur in the northwest and in adjacent areas of Western Sahara. Locusts are likely to concentrate and form small groups in areas that remain green. There is a moderate risk that adults and small groups could move northwards to the southern side of the Atlas Mountains in Morocco and breed on a small scale.

**Central Region.** Aerial and ground control operations increased during March in **Saudi Arabia** where more than 30,000 ha of hopper bands and groups of hoppers and adults were treated on the central Red Sea coastal plains. Two small immature swarms formed and were treated in one area. Locust infestations declined on the Red Sea coast in **Sudan** due to on-going control operations (3,740 ha) against hopper bands and adult groups. Hatching continued on the southeast coast in **Egypt** and ground teams treated some 2,200 ha of hopper bands and groups of hoppers and adults. A few adults were seen in northern **Oman** and in crops on the Red Sea coast in **Yemen**. During the forecast period, small groups and swarms could form on the Red Sea coast in Saudi Arabia and move into the spring breeding areas of the interior of the country. There is an increased risk that a few groups or swarmlets could cross the Red Sea to Sudan from early May onwards.

**Eastern Region.** Low numbers of locusts appeared in the spring breeding areas in western **Pakistan** in early March. During the forecast period, small-scale breeding in areas of recent rainfall will cause locust numbers to increase slightly but remain low and below threatening levels. A similar situation is expected in adjacent areas of southeast **Iran**.

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.

**Telephone:** +39 06 570 52420 (7 days/week, 24 hr)

**Facsimile:** +39 06 570 55271

**E-mail:** [eclo@fao.org](mailto:eclo@fao.org)

**Internet:** [www.fao.org](http://www.fao.org)

**DLIS:** [www.fao.org/ag/locusts](http://www.fao.org/ag/locusts)



No. 390

## DESERT LOCUST BULLETIN



### Weather & Ecological Conditions in March 2011

**Very little rain fell in the recession area during March for the fifth consecutive month. Consequently, ecological conditions were becoming unfavourable for breeding in most areas.**

In the **Western Region**, no significant rain fell during March. Nevertheless, ecological conditions remained favourable for locust breeding and survival in northwest Mauritania (Inchiri, southwest Adrar and Dakhlet Nouadhibou) but annual vegetation started to dry out due to high temperatures. Elsewhere in the northern Sahel, dry conditions persisted although there may be small areas of green vegetation in parts of northern Mali (Adrar des Iforas) and Niger (Tamesna and southeastern Air Mountains). In Morocco, annual vegetation dried out in the southern part of Western Sahara except in a few places near Tichla and the Mauritanian border where it remained green. South of the Atlas Mountains, green vegetation persisted near Guelmim and small areas remained green in the Draa and Ziz-Ghris valleys. In Algeria, ecological conditions were not favourable for breeding in the Sahara except in areas where vegetation remained green near irrigated perimeters in the Adrar region.

In the **Central Region**, good rains fell in mid-March along both sides of the Red Sea from Lith to Rabigh in Saudi Arabia, near Suakin in Sudan and between Mersa Gulbub and Tio in Eritrea. Light showers also fell at times in the spring breeding areas of the interior of Saudi Arabia near Riyadh. Vegetation was drying out on the Red Sea coast in Egypt between Shalatyn and the Sudanese border, although small areas of green vegetation persisted in some places near Halaib. Although light rain fell on the Red Sea coast in Yemen near Hodeidah, vegetation remained mostly dry except on the southern plains where small areas of green vegetation were present. Light rain fell from North Darfur, Sudan to Jebel Uweinat in southwestern Egypt in the third decade of March.

In the **Eastern Region**, light to moderate rains fell in parts of the spring breeding areas in western



### Area Treated

Algeria	290 ha (March)
Egypt	2,228 ha (March)
Eritrea	720 ha (February)
Mauritania	4,768 ha (March)
Morocco	314 ha (March)
Saudi Arabia	20,701 ha (February, revised)
	28,960 ha (March)
Sudan	3,740 ha (March)



### Desert Locust Situation and Forecast

( see also the summary on page 1 )

#### WESTERN REGION

##### **Mauritania**

##### • SITUATION

During March, locust infestations declined in the northwest regions of Inchiri, southwest Adrar and Dakhlet Nouadhibou. Infestations remained in the Taziazet area (ca 2050N/1530W), near Akjoujt (1945N/1421W), and southwest of Oujeft (2003N/1301W). Immature and mature solitarious and *transiens* adults and groups were present at densities up to 4,000 adults/ha. Small-scale breeding continued and solitarious and *transiens* hopper groups of all instars were seen at densities up to 80 hoppers/m<sup>2</sup>. Hopper and adult densities were highest in Taziazet. Limited breeding also occurred near Ouadane (2056N/1137W). Ground teams treated 4,768 ha in March.

##### • FORECAST

*Although limited hatching is likely to occur in early April near Taziazet and southwest of Oujeft, and additional fledging will occur throughout the forecast period, locust numbers are expected to decline further in Inchiri, Adrar and Dakhlet Nouadhibou. Locusts are likely to concentrate in vegetation that remains green and form small groups. Scattered adults may be present in the north near Bir Moghreïn.*

##### **Mali**

##### • SITUATION

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

- **FORECAST**

*Low numbers of adults may be present and will persist in parts of the Adrar des Iforas.*

### **Niger**

- **SITUATION**

A late report indicated that isolated immature solitarious adults were maturing at four places in the southern part of the Air Mountains during February. One hopper was seen east of Agadez (1700N/0756E).

During March, isolated solitarious adults were seen in the Tamesna 15 km west of In Abangharit (1754N/0559E) on the 18<sup>th</sup>.

- **FORECAST**

*Isolated adults will persist in parts of Tamesna and the southeastern Air Mountains.*

### **Chad**

- **SITUATION**

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

- **FORECAST**

*No significant developments are likely.*

### **Senegal**

- **SITUATION**

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

- **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 March, groups of immature and mature solitarious and *transiens* adults were present in the central Sahara near irrigated crops south of Adrar (2753N/0017W). Copulating was in progress in most places. Ground teams treated 290 ha. No locusts were seen near Tamanrasset (2250N/0528E), Djanet (2434N/0930E), Illizi (2630N/0825E), Beni Abbes (3011N/0214W) and Tindouf (2741N/0811W).

- **FORECAST**

*Small-scale breeding will cause locust numbers to increase slightly near Adrar. If spring rains fall, breeding will extend to other areas south of the Atlas Mountains; otherwise, locusts will concentrate in vegetation that remains green and form small groups.*

### **Morocco**

- **SITUATION**

During March, isolated immature solitarious adults were seen in the northeast between Erfoud (3128N/0410W) and Figuig (3207N/0113W) and a few mature solitarious adults were present near Guelmim (2859N/1003W). No locusts were seen in the Draa Valley.

In the Western Sahara, three small groups of mature *transiens* adults at densities up to 3 adults/m<sup>2</sup> appeared on the Mauritanian border and laid eggs during the first decade of March. Third instar hoppers were also present from earlier breeding. Two small mature swarms at densities up to 10 adults/m<sup>2</sup> were copulating near Tichla (2137N/1453W). During the last decade of the month, mainly late instar *transiens* hoppers at densities up to 4 hoppers/m<sup>2</sup> were seen at one place and isolated mature solitarious and *transiens* adults were present southwest of Tichla. Control teams treated 314 ha in March.

- **FORECAST**

*Limited hatching may occur between Tichla and the Mauritanian border during the first week of April and adults will increase slightly as fledging occurs during the month. As vegetation dries out, locusts are likely to concentrate and may form small groups. Low numbers of adults may appear in the Draa Valley and breed on a small scale if rains occur. Adults and small groups arriving from Mauritania may augment locust numbers in these areas.*

### **Libyan Arab Jamahiriya**

- **SITUATION**

No reports were received during March.

- **FORECAST**

*A few solitarious adults may be present and could persist near Ghat. No significant developments are likely.*

### **Tunisia**

- **SITUATION**

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

- **FORECAST**

*No significant developments are likely.*



No. 390



No. 390

## DESERT LOCUST BULLETIN

---

### **CENTRAL REGION**

#### **Sudan**

##### • SITUATION

During March, locust infestations declined on the Red Sea coast. Scattered immature solitary and gregarious adults at densities up to 350 adults/ha were seen at two places in Wadi Diib near the Egyptian border. Low to medium density hopper bands of all instars and groups of immature solitary and gregarious adults at densities up to 4,000 adults/ha were present on the coastal plains from Port Sudan (1938N/3713E) to south of Suakin (1906N/3719E). During March, control teams treated 3,740 ha of which 2,600 ha were by air. No locusts were seen in the Tokar Delta and on the southern coastal plains. In the River Nile State, scattered immature solitary adults were seen in two cropping areas along the Atbara River near Ed Damer (1734N/3358E) on the 7<sup>th</sup>.

##### • FORECAST

*Locust numbers will decline on the Red Sea coast and in Wadi Diib due to control operations and drying vegetation. Scattered adults and perhaps a few small groups are likely to appear in a few areas along the Nile and Atbara rivers between Khartoum and Dongola. There is an increasing risk that a few groups or swarmlets could arrive from the eastern side of the Red Sea after early May.*

#### **Eritrea**

##### • SITUATION

A late report indicated that first to fourth instar solitary hoppers and immature and mature solitary adults were present on the Red Sea coast near Mersa Gulbub (1633N/3908E) in February. Some of the hoppers formed medium density groups. Ground teams treated 720 ha. No locusts were seen on the northern plains between Mehimet (1723N/3833E) and Karora (1745N/3820E).

On 19-25 March, no locusts were seen during a survey on the Red Sea coast between Sheib (1551N/3903E) and Mersa Gulbub.

##### • FORECAST

*Small concentrations of hoppers and adults may be present on the central Red Sea coast but numbers will decline as vegetation dries out. No significant developments are likely.*

#### **Ethiopia**

##### • SITUATION

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

##### • FORECAST

*No significant developments are likely.*

#### **Djibouti**

##### • SITUATION

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

##### • FORECAST

*No significant developments are likely.*

#### **Somalia**

##### • SITUATION

A late report stated that no surveys were carried out and no locusts were reported during February. No locusts were reported in March.

##### • FORECAST

*No significant developments are likely.*

#### **Egypt**

##### • SITUATION

During the first week of March, hatching continued on the Red Sea coast between Shalatein (2308N/3535E) and Abu Ramad (2224N/3624E) where hopper groups and bands of all instars were already present and fledging. Immature solitary, *transiens* and gregarious adults and groups were reported in this area during the second half of the month. Ground teams treated 2,228 ha in March. No locusts were seen in the Allaqi area east of Lake Nasser.

##### • FORECAST

*Hoppers and adults will continue to form small groups on the Red Sea coast between Shalatein and Abu Ramad. Fledging is expected to end in late April. Thereafter, locust numbers should decline as a result of control operations and drying conditions.*

#### **Saudi Arabia**

##### • SITUATION

During March, aerial and ground control operations increased on the Red Sea coast between Qunfidah (1909N/4107E) and Yenbo (2405N/3802E) against mainly late instar hopper groups and bands, immature and mature solitary, *transiens* and gregarious adults and groups. Throughout the month, adult groups were copulating and laying eggs, and hatching and fledging occurred. On the 17<sup>th</sup>, a 1.5 km<sup>2</sup> immature swarm was seen moving from west to east on the coast near Yenbo. Ground and aerial teams treated 28,960 ha in March, mainly in the Lith

(2008N/4016E) area. No locusts were reported in the spring breeding areas of the interior.

• **FORECAST**

*Hatching will continue on the Red Sea coast between Qunfidah and Yenbo until about mid-April, and hoppers will form groups and bands. Fledging will continue until early May, causing small groups of adults and swarms to form that, if not controlled, are likely to move into the spring breeding areas of the interior. There is an increased risk that a few groups or swarmlets could cross the Red Sea to northeast Africa from early May onwards.*

**Yemen**

• **SITUATION**

During March, isolated mature solitary adults were present in crops at two places on the central Red Sea coast near Bajil (1458N/4314E). No locusts were seen elsewhere on the Red Sea coast between Bayt Al Faqih (1430N/4317E) and the Saudi Arabian border and on the Gulf of Aden coast west of Aden (1250N/4503E).

• **FORECAST**

*Low numbers of adults will persist on the Red Sea coast and breed on a small scale if rainfall occurs during the forecast period.*

**Oman**

• **SITUATION**

During March, scattered immature solitary adults were seen on the Batinah coast near Jamma (2333N/5733E). No locusts were reported elsewhere in the country.

• **FORECAST**

*Low numbers of adults will persist on the Batinah coast and perhaps in Sharqiya and Dhahera. Small-scale breeding will occur if rains fall.*

**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 Jask (2540N/5746E) in March.

• **FORECAST**

*Low numbers of adults are likely to appear in the Jaz Murian Basin and on the southeastern coastal plains and breed on a small scale in areas of recent rainfall.*

**Pakistan**

• **SITUATION**

During March, low numbers of immature and mature solitary adults were present in Baluchistan near Panjgur (2658N/6406E) and mature solitary adults were seen on the coast west of Uthal (2548N/6637E).

• **FORECAST**

*Small-scale breeding is likely to occur near Panjgur and in other coastal and interior areas where rains may have fallen recently. Consequently, locust numbers will increase slightly but remain below threatening levels.*

**India**

• **SITUATION**

No locusts were seen during surveys in Rajasthan in March.

• **FORECAST**

*No significant developments are likely.*

**Afghanistan**

• **SITUATION**

No reports received.

• **FORECAST**

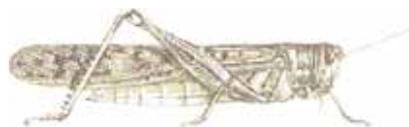
*No significant developments are likely.*



**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



No. 390



No. 390

## DESERT LOCUST BULLETIN

---

be sent by e-mail to the FAO/ECLO Desert Locust Information Service ([eclo@fao.org](mailto: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.

**Google site.** FAO DLIS has created a Google site (<https://sites.google.com/site/faodlis>) for national locust information officers to share problems, solutions and tips in using new technologies (eLocust2, eLocust2Mapper, RAMSES, remote sensing) and to make available the latest files for downloading. The site replaces the FAODLIS Google group, which will no longer be maintained. Interested users should contact Keith Cressman ([keith.cressman@fao.org](mailto:keith.cressman@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](mailto:pceccato@iri.columbia.edu)).

**Greenness map.** Geo-referenced dynamic greenness maps that show the evolution of green vegetation in the Desert Locust recession area for three months can be downloaded every ten days from DevCoCast (<http://www.devcoCast.eu/user/images/dl/Form.do>). The new product was developed by the Université catholique de Louvain and the Flemish Institute for Technical Research in Belgium and funded by the Belgium Science Policy Office. The maps can be used in a GIS to help guide survey teams and in locust analysis and forecasting.

**Twitter.** FAO DLIS has started to disseminate updates on the Desert Locust situation via Twitter, a social media service. Twitter can be accessed via the Internet or, in some countries, by mobile phone. Interested users should sign up for a free account at

<http://twitter.com>. Current Twitter users can access locust updates at <http://twitter.com/faolocust>.

**eLERT.** The Locust Group has created a dynamic and interactive online reference database that can be used to respond to assistance needs in a fast evolving locust emergency. It provides information on pesticides, equipment, suppliers, environmental monitoring, contracts, and contacts. The eLERT should help agencies to act more effectively in coping with locust threats. Visit eLert at <http://sites.google.com/site/elertsite>.

**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 situation updates.** Archives Section – Briefs
- **Greenness maps.** Activities Section – DLIS
- **Twitter.** Home page
- **eLERT.** Information Section
- **DLCC working papers.** Publications Section – Reports

**2011 events.** The following activities are scheduled or planned:

- **DLCC.** 40<sup>th</sup> session, Cairo, Egypt (postponed)
- **SWAC.** Desert Locust joint survey in the spring breeding areas of Pakistan and Iran (17 Apr - 10 May)
- **CLCPRO/EMPRES.** ULV Spraying and Environmental Monitoring workshop, Agadir, Morocco (4-12 April)
- **CRC/SWAC.** Desert Locust Information Officer workshop, Cairo, Egypt (postponed)



## 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.



No. 390

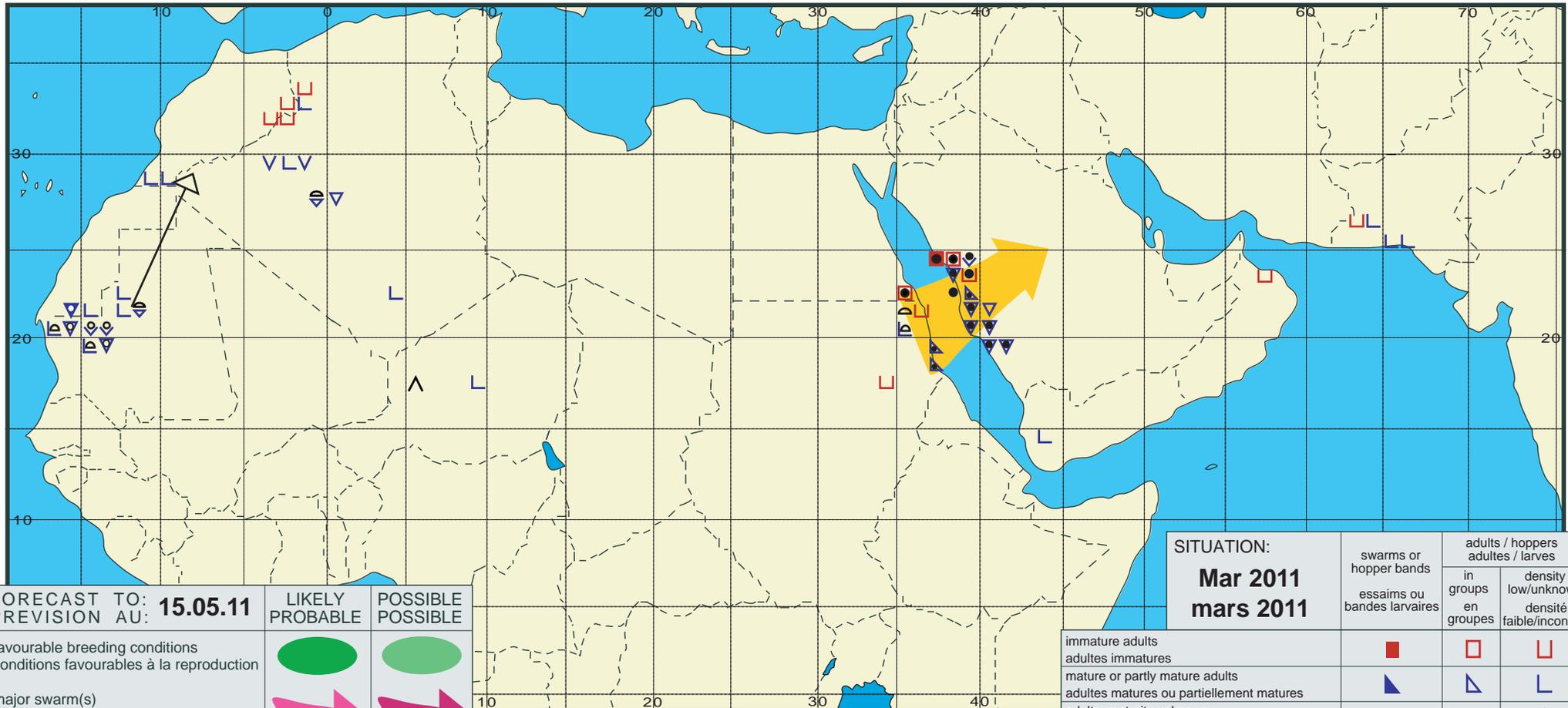
DESERT LOCUST BULLETIN



# Desert Locust Summary

## Criquet pèlerin - Situation résumée

390



FORECAST TO: PREVISION AU: <b>15.05.11</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>Mar 2011</b> <b>mars 2011</b>	swarms or hopper bands	adults / hoppers adultes / larves	
	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)			