

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

# DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 340

(2 February 2007)



## General Situation during January 2007 Forecast until mid-March 2007

**Important Desert Locust infestations were present along the Red Sea coastal plains and in northwest Somalia during January while other regions remained calm. Control operations against hopper and adult groups continued in outbreak areas on the Eritrean coast. Additional infestations were found in adjacent coastal areas in Sudan and small-scale breeding occurred in Saudi Arabia. A second generation of breeding is underway in Eritrea and Sudan that could give rise to small hopper bands and swarms in March. More rains could cause the situation to deteriorate further in April and threaten the Central Region by May. All efforts should be made to monitor the developing and potentially dangerous situation carefully.**

**Western Region.** Desert Locust infestations continued to decline in previously infested areas in northwest **Mauritania**, **Western Sahara** and **Niger** where only small residual populations remained during January. Although low numbers of adults could move north towards the Draa Valley in **Morocco**, to northern Mauritania and to southern **Algeria** during periods of warm southerly winds, the situation is expected to remain calm during the forecast period.

**Central Region.** Ground teams treated 4,000 ha of solitarious and *transiens* hoppers and adults that were forming small groups on the northern Red Sea coast of **Eritrea** during January. Some infestations extended across the border onto the coastal plains of **Sudan** where additional survey and control teams were

being mobilized. A second generation of breeding started at mid-month that will cause locust numbers to increase further in both countries. As vegetation dries out, locusts will concentrate, gregarize and form small groups, hopper bands and perhaps a few small swarms that could easily move across the Red Sea to **Yemen** and **Saudi Arabia**. So far, small-scale breeding has occurred on the Saudi Arabian coast while only a few adults were present on the Yemeni coast. If more rain falls during February and March in Eritrea, conditions could remain favourable for a third generation in April and May during which locust numbers would rapidly increase and hopper bands and swarms would form and threaten the Region. Neighbouring countries have been alerted to increase surveys in the winter breeding areas along the Red Sea coast. In northern **Somalia**, scattered adults formed groups at two places on the northwest coast where small-scale breeding is expected to occur in February and March, giving rise to additional groups. All efforts should be made to monitor the situation closely in the Region and undertake necessary control operations.

**Eastern Region.** The situation remained calm during January. Limited egg laying and hatching are likely in the spring breeding areas in western **Pakistan** and southeast **Iran** by the end of the forecast period. No significant developments are expected.

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

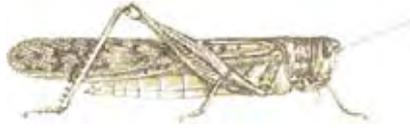
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### Weather & Ecological Conditions in January 2007

**Good rainfall and ecological conditions prevailed along both sides of the Red Sea during January. No significant rainfall occurred in the Western or Eastern regions where vegetation was mainly dry.**

In the **Western Region**, no significant rainfall was reported during January. Consequently, vegetation continued to dry out in the northern Sahel and dry conditions prevailed further north throughout most of the Sahara. In Mauritania, vegetation became increasingly dry in the northwest (Inchiri and Adrar) while light rain fell in the north (Tiris-Zemmour). In northern Mali, vegetation continued to dry out in the Adrar des Iforas. In Niger, vegetation remained green in parts of Tamesna, mainly northwest of In Abangharit. In Algeria, vegetation was dry or drying out in the west near Tindouf, in the central Sahara near Adrar, in the east near Djanet, and along the Malian border but it remained green in some wadis in the south near Tamanrasset. Light rain fell in parts of the central interior of Western Sahara on 11 January, and light to moderate showers fell on the 27-28<sup>th</sup> along the coast from Laayoune to the southern side of the Atlas Mountains in Morocco near Errachidia. Nevertheless, ecological conditions remained dry except for one area in the southern part of Western Sahara near Ma'Tallah where vegetation was drying out.

In the **Central Region**, breeding conditions remained unusually favourable during January along both sides of the Red Sea, between Suakin, Sudan and Obock, Djibouti and from Yenbo, Saudi Arabia to Al Mukha, Yemen. Light rain fell in most of these coastal areas while heavier showers were reported along the Tihama coast in Yemen. Light rain also fell along the coastal plains east of Aden in southern Yemen. In northwest Somalia, green vegetation was present along the coast between Bulhar and the Djibouti border, and breeding conditions were favourable due to rainfall in December and again in late January. Dry conditions prevailed on the southeastern coast in Egypt while green vegetation persisted along the Lake Nasser shore and in the

Western Desert in agricultural areas at Sh. Oweinat. Light to moderate rain fell at times in the coastal and interior areas of northern Oman where vegetation was mostly dry.

In the **Eastern Region**, no significant rainfall was reported during January. Nevertheless, vegetation remained green in parts of Rajasthan, India. Ecological conditions are likely to be improving in parts of the spring breeding areas in Baluchistan of Iran and Pakistan where good rains fell in December.



### Area Treated

Eritrea 4,000 ha (28 December – 18 January)



### Desert Locust Situation and Forecast

( see also the summary on page 1 )

#### WESTERN REGION

##### **Mauritania**

###### • SITUATION

During January, low numbers of scattered solitary immature and mature adults were present in the northwest region of Inchiri between Akjoujt (1945N/1421W) and the Western Sahara border, and in southwest Adrar between Tidjikja (1833N/1126W) and Atar (2032N/1308W). Scattered immature adults were seen near Zouerate (2244N/1221W) and at one place south of Akjoujt. Isolated breeding continued east of Akjoujt and north of Atar where late instar hoppers and fledglings were present at two places.

###### • FORECAST

*Unless rainfall occurs, breeding should end in the northwest and only scattered adults are likely to persist during the forecast period. During periods of warm southerly winds, some adults could move further north to Tiris-Zemmour and eventually breed if rainfall occurs.*

##### **Mali**

###### • SITUATION

On 3 January, mature gregarious-coloured locust adults were reported between Tombouctou and Araouane at N'Karba (1805N/0316W). Subsequent ground surveys did not find any locusts in the area.

###### • FORECAST

*Low numbers of locusts are likely to be present in parts of Timetrine, Tilemsi Valley, Adrar des Iforas and Tamesna and could persist during the forecast period in any areas that remain green.*

## Niger

### • SITUATION

During January, isolated late instar solitary hoppers, fledglings and immature adults were present near Arlit (1843N/0721E) while only solitary immature adults were seen at a few places in Tamesna northwest of In Abangharit (1754N/0559E). These locusts are residual populations from earlier infestations that were treated in December.

### • FORECAST

*Low numbers of solitary locusts are likely to persist in those parts of Tamesna that remain green. There is a low risk that some adults could move east to the Air Mountains or north towards central Algeria during periods of warm southerly and southwesterly winds.*

## Chad

### • SITUATION

No reports were received during January.

### • FORECAST

*No significant developments are likely.*

## Senegal

### • SITUATION

No reports were received during January.

### • FORECAST

*No significant developments are likely.*

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

### • FORECAST

*No significant developments are likely.*

## Algeria

### • SITUATION

During December and January, no locusts were seen during surveys carried out in the west near Tindouf (2741N/0811W), in the central Sahara near Adrar (2753N/0017W), in the east near Djanet (2434N/0930E) or in the south between Tamanrasset (2250N/0528E) and the Malian border at Bir Bou Mokhtar (2120N/0056E).

### • FORECAST

*Low numbers of adults could appear in the west and in the south during periods of warm southerly winds.*

## Morocco

### • SITUATION

During January, isolated immature *transiens* adults were seen at two locations during surveys carried out in Western Sahara: near the coast south of Dakhla (2342N/1555W) on 18 January and in the interior southwest of Aousserd near Ma'Tallah (2223N/1502W)

on the 20<sup>th</sup>. These locusts are left-over from breeding that occurred last November.

### • FORECAST

*Isolated adults are likely to persist in the southern part of Western Sahara. No significant developments are likely.*

## Libyan Arab Jamahiriya

### • SITUATION

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

### • FORECAST

*No significant developments are likely.*

## Tunisia

### • SITUATION

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

### • FORECAST

*No significant developments are likely.*

## CENTRAL REGION

### Sudan

### • SITUATION

During January, locust numbers increased on the Red Sea coastal plains south of Tokar Delta near Karora (1745N/3820E) and the Eritrean border. By the end of the month, solitary, *transiens* and gregarious hoppers of all instars, fledglings and immature and mature adults were gregarizing and forming small groups at one location. Adults were also seen laying eggs on 29 January, indicating that a second generation of breeding has commenced. No locusts were seen in Tokar Delta.

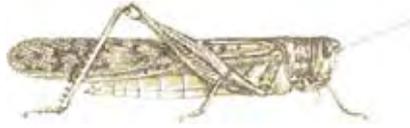
### • FORECAST

*Locust numbers will increase on the Red Sea coastal plains between Tokar Delta and the Eritrean border as second generation eggs hatch. As vegetation dries out, locusts will concentrate, gregarize and form small groups, bands and perhaps a few swarmlets. Adults could move north or south along the coast. If more rain falls during February and March, conditions could remain favourable for a third generation in April and May during which locust numbers would rapidly increase and hopper bands and swarms would form and threaten the Region. All efforts should be made to monitor the situation closely and undertake the necessary control operations.*



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### Eritrea

#### • SITUATION

During January, a small outbreak continued on the Red Sea coastal plains north of Massawa (1537N/3928E) within an area of about 200 km by 30 km. Solitary and *transiens* hoppers and adults were present between Shelshela (1553N/3906E) and Meleet (1730N/3845E), near the Sudanese border. Small groups of hoppers and adults formed in a few places but there were no reports of hopper bands or swarms. By mid-month, a second generation of breeding had started as adults were laying eggs near Wekiro (1548N/3918E), Mersa Cuba (1616N/3911E) and Meleet. Most of the control operations were carried out against infestations in millet crops near Shelshela (1553N/3906E) and, to a lesser extent, in other areas north of Massawa. Ground teams treated 4,000 ha from 28 December to 18 January.

Although no locusts were seen on the southern coast between Massawa and Assab (1301N/4247E), there is a strong possibility that eggs were laid in some areas but have not yet hatched.

#### • FORECAST

*Locust numbers will increase on the Red Sea coastal plains between Massawa and the Sudanese border as second generation eggs hatch. As vegetation dries out, locusts will concentrate, gregarize and form small groups, bands and perhaps a few swarmlets. Adults could move north or south along the coast. Locust numbers will also increase on the southern coast as hatching is expected early in the forecast period. If more rain falls during February and March, conditions could remain favourable for a third generation in April and May during which locust numbers would rapidly increase and hopper bands and swarms would form and threaten the Region. All efforts should be made to monitor the situation closely and undertake the necessary control operations.*

### Ethiopia

#### • SITUATION

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

#### • FORECAST

*No significant developments are likely.*

### Djibouti

#### • SITUATION

No locusts were reported during January.

#### • FORECAST

*There is a slight risk of low numbers of adults appearing on the northern coastal plains between Obock and the Eritrean border.*

### Somalia

#### • SITUATION

During January, scattered solitary immature and mature adults were present at densities less than 500 adults/ha within a 200 km stretch of the northwest coastal plains between Bulhar (1023N/4425E) and the Djibouti border. Groups of solitary and gregarious adults were reportedly seen at two places near Abdigeedi (1031N/4402E) on about 100 ha. Some of the adults were copulating.

#### • FORECAST

*Small-scale breeding will occur on the northwest coast, causing locust numbers to increase and perhaps a few small groups or bands will form between Berbera and the Djibouti border.*

### Egypt

#### • SITUATION

No locusts were seen during surveys carried out in January on the Red Sea coast between Shalatyn (2308N/3535E) and Halaib (2212N/3635E), in the Red Sea Hills between the coast and Lake Nasser, along the shore of Lake Nasser, in the Western Desert at Sh. Oweinat (2219N/2845E) and Siwa (2912N/2531E) and on the Mediterranean coast east of Salum (3131N/2509E).

#### • FORECAST

*If rains fall, small-scale breeding is likely to occur on the Red Sea coastal plains between Shalatyn and the Sudanese border. There is a low risk of adults arriving in this area from further south.*

### Saudi Arabia

#### • SITUATION

During January, small-scale breeding continued along the Red Sea coastal plains north of Jeddah near Masturah (2309N/3851E) where isolated late instar solitary hoppers were present. Small-scale breeding was also in progress further south along the coast near Qunfidah (1909N/4107E) and Jizan (1656N/4233E). Low numbers of solitary and *transiens* third to sixth instar hoppers and immature and mature solitary adults were present in several places in both areas. Some adults were laying eggs near Qunfidah.

#### • FORECAST

*Locust numbers will increase as small-scale breeding continues during the forecast period along*

the Red Sea coast. There is a low risk that a few adult groups and perhaps swarmlets could appear in coastal areas from the western side of the Red Sea. All efforts should be made to monitor the situation closely.

#### Yemen

##### • SITUATION

No surveys were carried out on the Red Sea coastal plains until 28 January when isolated immature and mature solitarious adults were seen between Bayt Al Faqih (1430N/4317E) and Midi (1619N/4248E).

In the south of the country, there was an unconfirmed report in mid-January of solitarious fledglings and adults in the Abyan province.

##### • FORECAST

*Locust numbers will increase as small-scale breeding occurs along the Red Sea coast during the forecast period. There is a low risk that a few adult groups and perhaps swarmlets could appear in coastal areas from the western side of the Red Sea. All efforts should be made to monitor the situation closely.*

#### Oman

##### • SITUATION

No locusts were seen during surveys carried out on the Musandam Peninsula, the Batinah coast and in the Dhahera interior of the north during January.

##### • FORECAST

*No significant developments are likely.*

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

##### • FORECAST

*No significant developments are likely.*

### **EASTERN REGION**

#### Iran

##### • SITUATION

No reports were received during January.

##### • FORECAST

*Low numbers of adults could appear and small-scale breeding may occur in areas of earlier rainfall along the southeastern coast between Bandar Abbas and Gwatar.*

#### Pakistan

##### • SITUATION

No locusts were reported in January.

##### • FORECAST

*Low numbers of adults could appear and breed on a small-scale in areas of earlier rainfall along the coast and perhaps in the interior of Baluchistan.*

#### India

##### • SITUATION

During January, an isolated adult was seen copulating north of Bhuj (2312N/6954E) in the Rann of Kutch region in Gujarat. No locusts were seen during surveys carried out in Rajasthan.

##### • FORECAST

*No significant developments are likely.*

#### Afghanistan

##### • SITUATION

No reports received.

##### • FORECAST

*No significant developments are likely.*



## Announcements

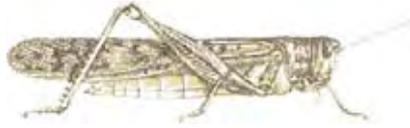
**Locust reporting.** During recession periods, countries should report at least once/month and send RAMSES data with a brief interpretation. During locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent twice/week and affected countries are encouraged to prepare decadal bulletins summarizing the situation. 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.

**eLocust2.** FAO has developed a new version of eLocust in collaboration with affected countries and the French Space Agency (CNES/Novacom) that allows field officers to enter survey and control data directly in the field and transmit it in real time via satellite to their national locust centre. Data can also be downloaded to a PC and visualized on GoogleEarth. The software is in both English and French. FAO DLIS has distributed units to nearly all of the frontline countries. Photos and more information are available at: [www.fao.org/ag/locusts/en/activ/DLIS/index.html](http://www.fao.org/ag/locusts/en/activ/DLIS/index.html)



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**Desert Locust warning levels.** A colour-coded scheme has been established to indicate the seriousness of the current Desert Locust situation: green for *calm*, yellow for *caution* 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. Your feedback on the usefulness of this scheme and any suggested improvements is welcome.

**EMPRES/CRC website.** Detailed information on EMPRES/CR and the FAO Central Region Commission as well as member country profiles can be found on the new EMPRES/CRC website at: [www.crc-empres.org](http://www.crc-empres.org).

**MODIS imagery.** Columbia University's International Research Institute for Climate and Society (IRI) has started to provide 16-day 250-metre resolution MODIS imagery for monitoring ecological conditions in the Desert Locust recession area, in addition to the daily rainfall estimates already available. 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).

**New information on Locust Watch.** DLIS launched a new initiative in October called *Desert Locust e-info news* as a means of keeping everyone informed on a weekly basis of new information on the Locust Group's web page, Locust Watch ([www.fao.org/ag/locusts](http://www.fao.org/ag/locusts)). The latest additions are:

- **EMPRES/WR.** Final report of the 5<sup>th</sup> Liaison Officers meeting held in Nouakchott, Mauritania (December 2006)

Links to the above information can be found in the new *Latest Additions* section on Locust Watch.

**2007 events.** The following meetings are scheduled:

- **Biopesticides.** Workshop on the future of biopesticides for Desert Locust management, Saly (Senegal), 12-15 February

- **CLCPRO.** 4<sup>th</sup> sessions of the Executive Committee and CLCPRO, Bamako (Mali), 18-22 June
- **EMPRES/WR.** 6<sup>th</sup> Liaison Officers Meeting (26-30 November) and 3<sup>rd</sup> Steering Committee (3-4 December), Agadir (Morocco)

**David Greathead.** It is with deep regret that we announce the death of David Greathead in October 2006. He was an influential figure in biological control, beginning his career in the Anti-Locust Research Service in 1953 under Dr. Boris Uvarov and joining CABI in 1963. We would like to express our sincere condolences to his family and government.



### Glossary of terms

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

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

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

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

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

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

##### **GROUP**

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

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

##### **VERY SMALL**

- swarm: less than 1 km<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.

### **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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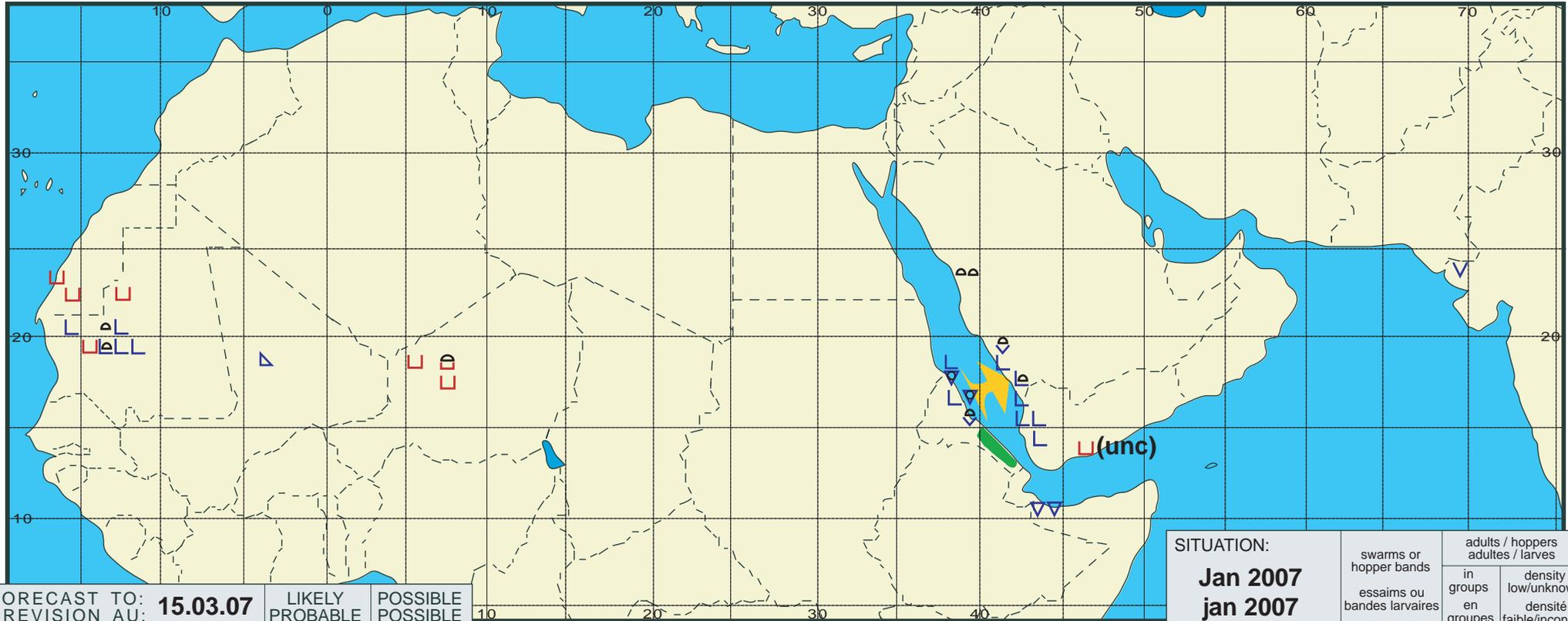
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# Desert Locust Summary

## Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU: <b>15.03.07</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>Jan 2007</b> jan 2007	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)			