

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

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 341

(2 March 2007)



General Situation during February 2007 Forecast until mid-April 2007

The Desert Locust situation remained very serious during February along the Red Sea coastal plains near the Sudan/Eritrea border and on the northwest coast of Somalia. In both areas, there were reports of hopper bands and swarms forming. More rains in March could cause the situation to deteriorate further and threaten the Central Region. Control operations are in progress in Sudan and Eritrea. All efforts should be made to monitor the developing and potentially dangerous situation carefully.

Western Region. The situation remained calm in the region during February. Limited breeding occurred in northwest **Mauritania** and in central **Algeria** where low numbers of solitarious locusts were present. Isolated adults were also present in parts of the spring breeding areas along the southern side of the Atlas Mountains in **Morocco** and western Algeria. During the forecast period, small-scale breeding is likely to take place in both countries causing locust numbers to increase slightly. Elsewhere, isolated adults may be present in parts of northern **Mali** and **Niger**. No significant developments are expected.

Central Region. Although no reports were received from **Eritrea** during February, survey and control operations were probably in progress against small groups, bands and swarms forming on the northern Red Sea coast. Several swarms were reported in adjacent coastal areas in **Sudan** where they laid

eggs that started hatching by the end of the month and the resulting hoppers were forming small bands. Aerial and ground control operations treated 2,700 ha in Sudan. Local breeding occurred on the coast in **Saudi Arabia** and **Yemen**, and barrier treatments were undertaken on nearly 2,000 ha in one area in Saudi Arabia. The situation in Sudan and Eritrea is worrisome because breeding conditions continued to remain favourable during February. More rain in March would allow further breeding in which case locusts would rapidly increase and hopper bands and swarms would form and threaten the Region. Elsewhere, unconfirmed reports indicated that locusts increased on the northwest coast in **Somalia** where small hopper bands and swarms may be present. FAO missions will visit Eritrea and Somalia in the coming weeks to clarify the situation. A Green Muscle® biopesticide trial will be carried out in Sudan in March.

Eastern Region. The situation remained calm during February. Limited egg laying and hatching are likely in the spring breeding areas in western **Pakistan** where isolated adults were present in February and in southeast **Iran**. 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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No. 341

DESERT LOCUST BULLETIN



Weather & Ecological Conditions in February 2007

Good ecological conditions prevailed on the Red Sea coast near the Eritrea/Sudan border and in Saudi Arabia and Yemen as well as in northwest Somalia. Ecological conditions were improving in parts of Northwest Africa where light rain fell at times.

In the **Western Region**, light rain fell at times in parts of Northwest Africa during February. During the first week, heavy rain occurred in Laayoune, Western Sahara while lighter showers were reported in other parts of the territory. Nevertheless, vegetation remained dry except in one area in the extreme south near Ma'Tallah. Light showers also occurred at times along the southern side of the Atlas Mountains in Morocco between Sidi Ifni and Erfoud, and ecological conditions were improving in some of the nearby spring breeding areas, mainly in the Draa, Ziz and Ghris valleys. In Algeria, rains may have fallen in the first week in the west between Adrar and Tindouf. Ecological conditions remained favourable for breeding in the west near Beni Abbes, in the centre near Adrar and in the south near Tamanrasset. In Libya, green vegetation was limited to a few wadis in the Al Hamada Al Hamra region in the northwest. In West Africa, very little if any rain fell in the Sahel. In Mauritania, ecological conditions were unfavourable for locust survival and breeding except for a few limited areas in the northwest between Akjoujt and Chinguetti. Green vegetation persisted in northern Mali in some of the larger wadis in the Adrar des Iforas and Tamesna, and in Niger mainly along the western side of the Air Mountains.

In the **Central Region**, light rain fell at times during February in the winter breeding areas along both sides of the Red Sea. On the western side of the Red Sea, rain occasionally fell on the coastal plains between Tokar, Sudan and Mehimet, Eritrea causing vegetation to become greener and ecological conditions to remain favourable for breeding. Vegetation started to dry out slightly south of Mehimet to Massawa but remained green further south near Tio. Although light showers were reported near the Sudanese-Egyptian border, unusually dry conditions prevailed between

Suakin, Sudan and Shalatin, Egypt except in parts of Wadi Diib and on the coast near Halaib. On the eastern side of the Red Sea, light rains fell at times mainly along the central and southern coast in Saudi Arabia. Ecological conditions remained favourable for breeding along the coast from Jeddah to the northern coast in Yemen as well as along parts of the Gulf of Aden coast. Conditions were less favourable along the Yemeni central coast where vegetation was starting to dry out. In northwest Somalia, green vegetation persisted along the coast between Berbera and the Djibouti border. In Oman, scattered showers fell in parts of the northern interior and on the coast.

In the **Eastern Region**, light rain fell in parts of the spring breeding areas in Baluchistan in western Pakistan and southeast Iran, causing breeding conditions to improve during February. During the first decade of the month, light to moderate rain fell in the summer breeding areas along both sides of the Indo-Pakistan border and conditions were favourable for breeding. However, locusts are normally not present in this area during the winter.



Area Treated

Eritrea	no details available
Saudi Arabia	1,900 ha (20-28 February)
Sudan	2,710 ha (15-26 February)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During February, isolated immature and mature adults were present between Akjoujt (1945N/1421W) and Chinguetti (2027N/1221W). Small-scale breeding occurred east of Akjoujt near Grara de Tenemrount (1945N/1325W) where isolated late instar hoppers and fledglings were seen at four places and adults were copulating on the 21st. In Tiris-Zemmour, isolated immature adults were reported from two places between Zouerate (2244N/1221W) and Bir Moghreïn (2510N/1135W).

• FORECAST

Low numbers of adults will persist in those areas that remain green in southwest Adrar and in parts of Tiris-Zemmour. Limited hatching will occur east of

Akjoujt by mid-March and the resulting hoppers are expected to fledge from mid-April onwards. During periods of warm southerly winds, some adults could move further north to Tiris-Zemmour and breed if rainfall occurs.

Mali

- **SITUATION**

No locusts were reported in February.

- **FORECAST**

Isolated adults may be present and could persist in any areas that remain green in Timetrine, Tilemsi Valley, Adrar des Iforas and Tamesna.

Niger

- **SITUATION**

No reports were received in February.

- **FORECAST**

Isolated adults may be present and could persist in the few places in the Air Mountains that remain green. There is a low risk that some adults could move north towards central Algeria during periods of warm southerly and southwesterly winds.

Chad

- **SITUATION**

No reports were received in February.

- **FORECAST**

No significant developments are likely.

Senegal

- **SITUATION**

No locusts were reported during February.

- **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 February, isolated mature solitarious adults were present and some were copulating west of Beni Abbes (3011N/0214W). Small-scale breeding occurred south of Adrar (2753N/0017W) where isolated hoppers were reported. No locusts were seen in the south near Tamanrasset (2250N/0528E) and Djanet (2434N/0930E).

- **FORECAST**

Scattered adults will persist near Adrar and Beni Abbes where limited hatching could occur by the end of March with the resulting hoppers fledging in about May. Low numbers of adults could appear in the west

and in the south during periods of warm southerly winds.

Morocco

- **SITUATION**

In mid-February, a few isolated mature solitarious adults were seen near Merzouga in W. Talghoumt (3059N/0358W) and at Khamlia (3102N/0359W).

- **FORECAST**

Small-scale breeding is likely to occur near Merzouga and perhaps in a few areas of recent rainfall in the Draa, Ziz and Ghريس valleys.

Libyan Arab Jamahiriya

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

Tunisia

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

CENTRAL REGION

Sudan

- **SITUATION**

During the first week of February, scattered immature and mature adults were present at densities of 50-300 adults/ha at three places on the Red Sea coast between Suakin (1906N/3719E) and Tokar (1827N/3741E) and at another three places in the Tokar Delta. On the 5th, five swarms were reported on the coast near the Eritrean border. During the remainder of the month, there were 11 reports of immature and mature adult groups and swarms at densities of 4-12 adults/m² and varying in size from 1 to 6 km². The infestations were concentrated within a small area of about 7 x 15 km near Aiterba (1753N/3819E) between Khor Balatat and the Eritrean border. Egg laying was first reported on the 10th and, by the last decade of the month, hatchlings were forming high-density hopper bands in one place. Aerial and ground control operations treated 2,710 ha on 15-26 February. Nearby, groups of solitary adults were copulating near Adobana (1811N/3816E). The



No. 341

DESERT LOCUST BULLETIN



No. 341

DESERT LOCUST BULLETIN

situation remained calm in the Tokar Delta and no locusts were seen in Khor Baraka.

• **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 swarms. Adults could move north or south along the coast. If more rain falls during 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.

Eritrea

• **SITUATION**

Although no reports were received during February, survey and control operations are thought to be in progress against small groups, bands and swarms on the Red Sea coast between Massawa (1537N/3928E) and the Sudanese border where an outbreak has been underway for the past three months.

• **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 swarms. 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 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 in January and February.

• **FORECAST**

No significant developments are likely.

Djibouti

• **SITUATION**

No reports were received during February.

• **FORECAST**

Gregarizing locust infestations may be present on the coast between Djibouti town and the Somali border. There is also a risk of low numbers of adults appearing on the northern coastal plains between Obock and the Eritrean border. All efforts should be made to monitor the situation closely.

Somalia

• **SITUATION**

Although surveys were not carried out during February, there were several unconfirmed reports suggesting that locust numbers increased on the northwest coast near Bulhar (1023N/4425E) and between Lughaye (1041N/4356E) and the Djibouti border where locals reported small hopper bands, adult groups and swarms.

• **FORECAST**

Small-scale breeding is likely to continue on the northwest coast, causing locust numbers to increase further and perhaps a few small groups, bands or swarms will form between Berbera and the Djibouti border. All efforts should be made to monitor the situation closely.

Egypt

• **SITUATION**

No locusts were seen during surveys carried out in February on the Red Sea coast between Berenice (2359N/3524E) and Abu Ramad (2224N/3624E), in the Red Sea Hills between the coast and Lake Nasser, near Abu Simbel (2219N/3138E) and Tushka (2247N/3126E), 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 February, small-scale breeding continued along the Red Sea coastal plains at a few places southeast of Qunfidah (1909N/4107E) where scattered solitarious immature and mature adults were present at densities of 50-80 adults/ha mixed with second to fifth instar *transiens* hoppers at densities of 1-3 hoppers/m². Ground control teams treated 1,900 ha using barrier treatments. Small-scale breeding was also in progress on the coast near Lith (2008N/4016E) where isolated first to fourth instar hoppers and adults were present, and near Jizan (1656N/4233E) where

scattered fledglings and adults were seen. No locusts were reported elsewhere along the coast or in the spring breeding areas in the interior.

• **FORECAST**

Small-scale breeding is likely to continue along parts of the Red Sea coastal plains, causing locust numbers to increase slightly. There is a low risk that a few adult groups and small swarms 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**

During February, isolated hoppers and adults were present in a few places on the central Red Sea coast between Zabid (1410N/4318E) and Hodeidah (1450N/4258E). Isolated immature and mature solitary adults were present further north between Al Zuhrah (1541N/4300E) and Midi (1619N/4248E). On the southern coast, small-scale breeding occurred east of Aden near Zinjibar (1306N/4523E) where low numbers of third to fifth instar solitary and *transiens* hoppers were mixed with scattered immature and mature solitary adults. Some of the adults were copulating.

• **FORECAST**

Small-scale breeding will cause locust numbers to continue to increase slightly along the Red Sea coast. Hatching will occur near Zinjibar at the beginning of the forecast period and the resulting hoppers are likely to fledge in early April. There is a low risk that a few adult groups and small swarms 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 Batinah coast and in the northern interior regions of Dakhalia and Sharqiya during February.

• **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 locusts were seen during surveys carried out along the southwestern coastal plains in Khuzestan

Province on 18-20 February.

• **FORECAST**

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

Pakistan

• **SITUATION**

During February, isolated mature adults were present in the spring breeding areas in Baluchistan at a few places along the coast near Pasni (2513N/6330E).

• **FORECAST**

Small-scale breeding is expected to occur in areas of earlier rainfall along the coast and perhaps in the interior of Baluchistan, causing locust numbers to increase slightly.

India

• **SITUATION**

No locusts were seen during surveys carried out in Rajasthan and the Rann of Kutch during February.

• **FORECAST**

No significant developments are likely.

Afghanistan

• **SITUATION**

No reports received.

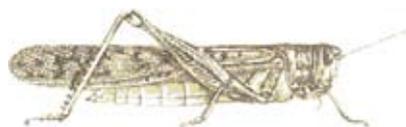
• **FORECAST**

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



No. 341

DESERT LOCUST BULLETIN



No. 341

DESERT LOCUST BULLETIN

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

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.

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. Comments and questions can be addressed to Pietro Ceccato (pceccato@iri.columbia.edu).

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). The latest additions are:

- **Press Release.** Desert Locust outbreak in Eritrea (23 February)

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

2007 events. The following meetings are scheduled:

- **CRC.** 26th session, Kuwait (or Sana'a, Yemen), 13-17 May
- **CLCPRO.** 4th sessions of the Executive Committee and CLCPRO, Bamako (Mali), 18-22 June
- **EMPRES/WR.** 6th Liaison Officers Meeting (26-30 November) and 3rd Steering Committee (3-4 December), Agadir (Morocco)



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 km² • band: 1 - 25 m²

SMALL

- swarm: 1 - 10 km² • band: 25 - 2,500 m²

MEDIUM

- swarm: 10 - 100 km² • band: 2,500 m² - 10 ha

LARGE

- swarm: 100 - 500 km² • band: 10 - 50 ha

VERY LARGE

- swarm: 500+ km² • 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.



No. 341

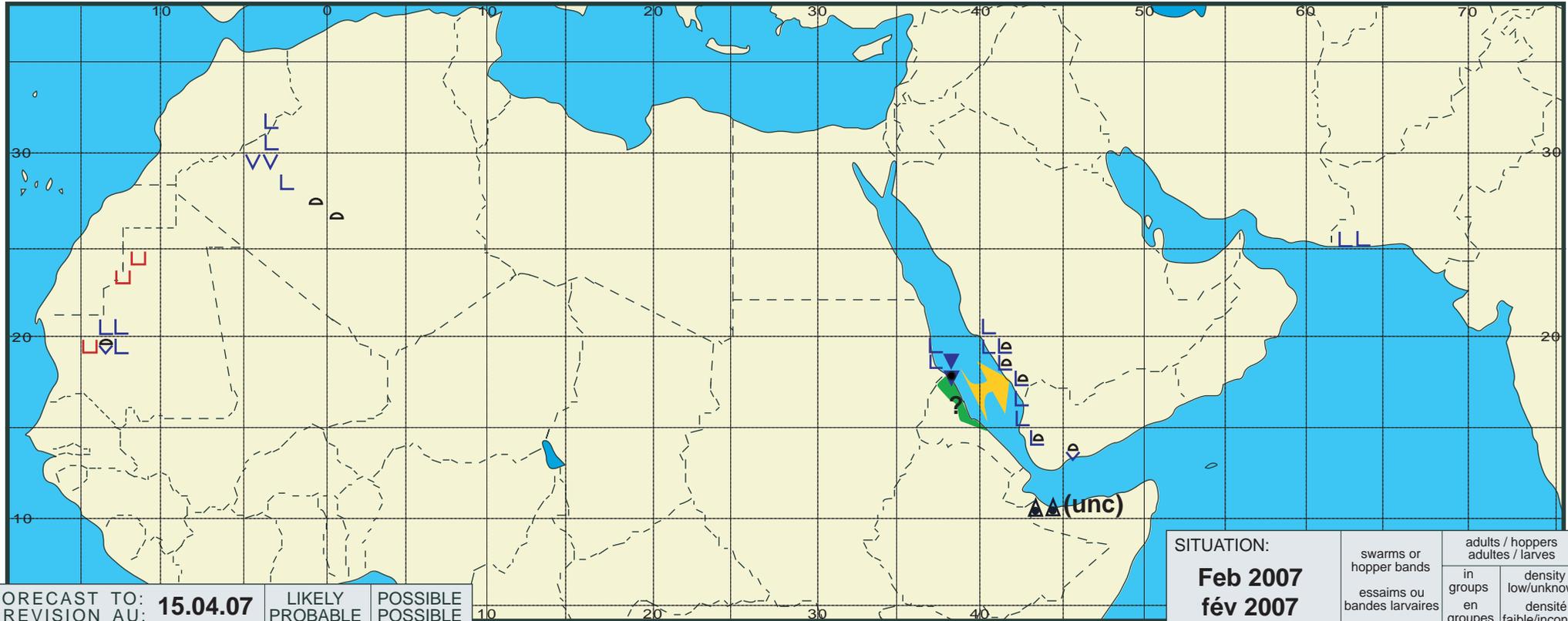
DESERT LOCUST BULLETIN



Desert Locust Summary

Criquet pèlerin - Situation résumée

341



FORECAST TO: PREVISION AU: 15.04.07	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: Feb 2007 fév 2007	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)			