

warning level: **CAUTION**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 389



**General Situation during February 2011
Forecast until mid-April 2011**

(3 Mar 2011)

Desert Locust infestations persisted during February in Sudan, Saudi Arabia and Mauritania as a result of continued breeding. Control operations were carried out against hopper bands and swarms on the Red Sea coast in Sudan and Egypt, against hopper bands on the coast in Saudi Arabia, and against hopper and adult groups in Mauritania. Smaller scale operations were undertaken in southern Morocco and Algeria. If current infestations in Sudan and Saudi Arabia are not controlled, new adult groups and small swarms could form on the Red Sea coast and move to the interior of Saudi Arabia during March and April. Similarly, adults and small groups in northwest Mauritania and southern Morocco could move to the southern side of the Atlas Mountains in Morocco and Algeria. Breeding is expected to occur in both areas once temperatures increase and spring rains commence. Therefore, all efforts should be made to control current infestations in order to reduce migration to the spring breeding areas.

Western Region. Small-scale breeding continued for a fifth consecutive month in northwest Mauritania, causing hoppers and adults to form numerous small groups. Ground teams treated nearly 17,000 ha during February. Infestations and control operations started to decline by the last decade of the month. Small adult groups appeared and laid eggs along the border of the southern portion of the Western Sahara in Morocco, and limited control (43 ha) was undertaken. Low numbers of adults persisted in

parts of the Sahara in Algeria where ground teams treated small groups in one area (45 ha). Small-scale hatching will continue early in the forecast period in northwest Mauritania and adjacent areas of southern Morocco but infestations are expected to decline as vegetation dries out and control operations continue. Nevertheless, there remains a moderate risk that some adults will move north to the spring breeding areas along the southern side of the Atlas Mountains in Morocco and Algeria and lay eggs in March. In West Africa, dry conditions prevailed in the northern Sahel of Mali, Niger and Chad where the situation is expected to remain calm.

Central Region. Control operations continued during February in Sudan and, to a lesser extent, Egypt against groups of hoppers and adults, bands and swarms, which formed on the Red Sea coast and in subcoastal areas. In Saudi Arabia, hatching and hopper band formation continued on the Red Sea coast. Aerial and ground control operations were carried out in Sudan (9,845 ha) and Saudi Arabia (14,196 ha) while only ground control was undertaken in Egypt (265 ha). During the forecast period, adult groups and swarms will form that, if not controlled, are likely to move into the spring breeding areas in the interior of Saudi Arabia. The situation is less clear in Eritrea where locusts are likely to be present and concentrating in the few areas that remain green on the coast. No surveys could be carried out on the Red Sea coast of Yemen where small-scale breeding is almost certainly in progress.

Eastern Region. No locusts were reported in the Region during February. Ecological conditions are expected to improve in the spring breeding areas of southeast Iran and western Pakistan as a result of good rains that fell during the month. Consequently, small-scale breeding is likely to occur during the forecast period but locust numbers will remain low and non-threatening.

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.

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**Weather & Ecological
Conditions in February 2011**

Although very little rain fell in the recession area during February, ecological conditions remained favourable for breeding in northwest Mauritania and along both sides of the Red Sea.

In the **Western Region**, no significant rain fell during February. Nevertheless, light rain fell at times in northwest Mauritania, causing ecological conditions to remain favourable for locust survival and breeding in Adrar, Inchiri and Dakhlet Nouadhibou. By the end of the month, vegetation was starting to dry out in some areas. In Morocco, vegetation was green in parts of the Adrar Settouf in the Western Sahara, and in the Draa and Ziz-Ghris valleys south of the Atlas Mountains. In Algeria, vegetation was drying out in nearly all areas of the Sahara except near irrigated crops in Adrar. Mainly dry conditions persisted in the northern Sahel except in parts of northern Mali (Adrar des Iforas, Tamesna and Timetrine) and Niger (central Tamesna and southeastern Air Mountains) where vegetation may be green in a few of the larger wadis and low-lying areas.

In the **Central Region**, no significant rain fell during February in the winter breeding areas. Consequently, vegetation was starting to dry out on the Red Sea coastal plains in Sudan and southeast Egypt but remained green in the Tokar Delta and between Port Sudan and Eit. In Egypt, green vegetation persisted in Wadi Diib and on the coast between Abu Ramad and the Sudanese border. In Saudi Arabia, ecological conditions remained favourable for breeding on the Red Sea coast between Yenbo and Qunf dah. In Yemen, vegetation was expected to be drying out on the Tihama coastal plains. Light to moderate rain fell in parts of the spring breeding areas of the interior of Saudi Arabia but vegetation remained dry west of Buraydah.

In the **Eastern Region**, light to moderate rain fell during the first half of February in parts of the spring breeding areas in western Pakistan near the coast and in the interior of Baluchistan, mainly near Turbat, Panjgur and Nushki. Good rains also fell in

the Jaz Murian Basin in southeast Iran. Consequently, ecological conditions will improve in both areas for small-scale breeding.

**Area Treated**

Algeria	45 ha (February)
Egypt	580 ha (January, revised) 265 ha (February)
Eritrea	200 ha (January)
Mauritania	19,450 ha (January, revised) 16,893 ha (February)
Morocco	43 ha (February)
Saudi Arabia	14,196 ha (February)
Sudan	9,845 ha (February)

**Desert Locust
Situation and Forecast**

(see also the summary on page 1)

WESTERN REGION**Mauritania****• SITUATION**

During February, hoppers and adults formed small groups at densities up to 20 hoppers/m² and 10,000 adults/ha in the northwest regions of Inchiri, southwest Adrar and, to a lesser extent, Dakhlet Nouadhibou. Solitarious and *transiens* adults continued to lay eggs and hatchlings formed small patches at densities of up to 45 hoppers/m². Infestations and control operations started to decline by the last decade of the month. Ground teams treated 16,893 ha during February. Further north, scattered immature and mature solitarious adults were present in Tiris-Zemmour near Zouerate (2244N/1221W) and Bir Moghreïn (2510N/1135W). Some adults were seen copulating near Zouerate on the 15th.

• FORECAST

Hatching will continue during the first half of March in parts of Inchiri, Adrar, Dakhlet Nouadhibou and, to a lesser extent, near Zouerate, and hoppers and adults are likely to form small groups. Locust numbers should decline as vegetation dries out and control operations continue.

Mali**• SITUATION**

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

• FORECAST

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

Niger

• SITUATION

No reports were received during February.

• FORECAST

Low numbers of adults may be present and will persist in parts of the Air Mountains.

Chad

• SITUATION

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

• FORECAST

No significant developments are likely.

Senegal

• SITUATION

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

• 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 February, mature solitary adults concentrated, formed small groups and were copulating near irrigated crops in the Adrar (2753N/0017W) area. Ground teams treated 45 ha. Scattered mature solitary adults were also present between Adrar, In Salah (2712N/0229E) and Tamanrasset (2250N/0528E), and west of Djanet (2434N/0930E). A few adults were seen copulating west of Tamanrasset.

• FORECAST

Small-scale breeding will cause locust numbers to increase slightly near Adrar and Tamanrasset. 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 February, small groups of mature *transiens* adults, at densities up to 3,000 adults/ha, appeared in a few places in the extreme south of the Western Sahara along the Mauritanian border near Afuidich (2119N/1528W). Some adults were laying eggs. Ground teams treated 43 ha. Scattered immature and mature solitary and *transiens* adults were also present between the border, Tichla (2137N/1453W)

and Ma'Tallah (2223N/1502W). Further north, isolated mature solitary adults were present southwest of the Anti-Atlas Mountains near Guelmim (2859N/1003W). In the northeast, isolated mature solitary adults were present in a few places near the Algerian border between Figuig (3207N/0113W) and Erfoud (3128N/0410W). No locusts were seen in the Draa Valley.

• FORECAST

Small-scale breeding in the southern part of the Western Sahara will cause locust numbers to increase. 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 once rains occur. Adults and small groups arriving from Mauritania may augment locust numbers in these areas.

Libyan Arab Jamahiriya

• SITUATION

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

• FORECAST

A few solitary 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 February.

• FORECAST

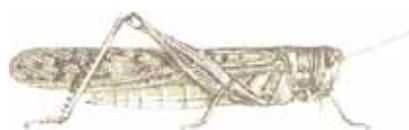
No significant developments are likely.

CENTRAL REGION

Sudan

• SITUATION

During February, hopper groups and bands of all instars ranging in size from 10 m² to 5 ha were present on the central coast from Port Sudan (1938N/3713E) to south of Suakin (1906N/3719E). Groups of immature and mature adults at densities up to 5,000 adults/ha, some laying eggs, and a laying swarm on 9 February, were also seen in the same area. Immature and mature solitary adults and a few groups persisted in the Tokar Delta. During the second half of the month, six small immature and mature swarms, varying in size from 50 to 400 ha, were reported in Wadi Oko just north of Tomala (2002N/3551E). One



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swarm was seen laying eggs on the 25th. Further north, scattered immature and mature solitary and gregarious adults were present along Wadi Diib to Suf ya (2119N/3613E). No locusts were seen on the northern coast between Eit (2009N/3706E) and the Egyptian border, on the southern plains south of Tokar Delta, and on the western side of the Red Sea Hills between Tomala and Sinkat (1855N/3648E). During February, control teams treated 9,845 ha of which 5,950 ha were by air.

- **FORECAST**

Breeding will continue on the central coast (hatching in early March) and in Wadi Oko (hatching at mid-month). Low numbers of small hopper bands are expected to form in both areas that will f edge by mid-April (central coast) and late April (W. Oko). As vegetation dries out, locusts will concentrate and form groups, hopper bands and a few small swarms. There is a moderate risk that some groups and swarms will appear in Tokar Delta. Further breeding is unlikely to occur unless more rains fall.

Eritrea

- **SITUATION**

A late report indicated that solitary hoppers mixed with immature and mature solitary adults were present during the last week of January on the Red Sea coast near Mersa Gulbub (1633N/3908E). Ground control was undertaken on 200 ha.

Results are awaited from a survey carried out on the Red Sea coast in February.

- **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 further breeding is expected unless more rain falls.

Ethiopia

- **SITUATION**

No reports were received during February.

- **FORECAST**

No significant developments are likely.

Djibouti

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

Somalia

- **SITUATION**

A late report stated that no surveys were carried out and no locusts were reported during January.

- **FORECAST**

No significant developments are likely.

Egypt

- **SITUATION**

During the last week of January and first three weeks of February, hatching occurred on the Red Sea coast south of Shalatein (2308N/3535E) between W. Ibib and W. Diib. Hoppers formed several dozen very small to medium sized high-density bands. A few very small medium to high density mature swarms were seen laying eggs. Ground teams treated 265 ha. Scattered immature and mature *transiens* adults were present in the El Shazly area in the Red Sea Hills west of Berenice (2359N/3524E). No locusts were seen near Abu Simbel (2219N/3138E).

- **FORECAST**

Hatching will continue during the first week of March on the Red Sea coast between Shalatein and Abu Ramad, causing locust numbers to increase. Hoppers will form small groups and bands. Fledging will continue throughout the forecast period, which could lead to the formation of small adult groups and perhaps a few small swarms.

Saudi Arabia

- **SITUATION**

During February, hatching and hopper band formation continued on the central Red Sea coast between Lith (2008N/4016E) and Qunf dah (1909N/4107E) and on the northern coast between Thuwal (2215N/3906E) and Yenbo (2405N/3802E). Most of the infestations consisted of late instar hopper bands and were confined to the coastal plains although some hoppers and bands were present in the adjacent Asir Mountains between Taif (2115N/4021E) and Al Baha (2001N/4129E), and near Khaybar (2542N/3917E). Scattered immature and mature solitary, *transiens* and gregarious adults were also present on the coast, forming small groups in some places. During the month, 54 survey and control teams and two aircraft treated 14,196 ha.

- **FORECAST**

Small groups of adults and swarms will form in March that, if not controlled, are likely to move into the spring breeding areas of the interior if no further rains fall on the coast.

Yemen

• SITUATION

No surveys were carried out during February.

• FORECAST

Small-scale breeding is almost certainly in progress on the Red Sea coast and is likely to continue if rains fall, causing locust numbers to increase gradually and form small groups.

Oman

• SITUATION

No locusts were seen during surveys carried out in the northern regions of Dhahera and Sharqiya during February. No locusts were reported elsewhere in the country.

• FORECAST

Low numbers of adults are likely to appear on the Batinah coast and perhaps in Sharqiya and Dhahera, and breed on a small scale if rainfall occurs.

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 February, no locusts were seen during surveys carried out on the southeast coast near Jask (2540N/5746E) and Chabahar (2517N/6036E) and in the western Jaz Murian Basin southeast of Kahnuj (2757N/5742E).

• FORECAST

Low numbers of adults are likely to appear in the Jaz Murian Basin and on the southeastern coastal plains. Small-scale breeding is likely to occur in areas of recent rainfall, especially in the Jaz Murian Basin between Kahnuj and Iranshahr.

Pakistan

• SITUATION

A late report indicated that no locusts were present during January.

During February, no surveys were carried out and no locusts were reported in the spring breeding areas in Baluchistan. There were unconfirmed reports of residual populations in previously infested areas in Ghotki district near the Indian border during the first fortnight of the month.

• Forecast

Low numbers of adults are likely to present in a few coastal and interior areas of Baluchistan where small-scale breeding will occur in areas of recent rainfall near Panjgur and Turbat.

India

• SITUATION

No locusts were seen during surveys in Rajasthan in February.

• 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 be sent by e-mail to the FAO/ECLo Desert Locust Information Service (ecllo@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,



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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) 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. The site is available in English and French. Address comments and questions to Pietro Ceccato (pceccato@iri.columbia.edu).

New information on Locust Watch. Recent additions to the web site (www.fao.org/ag/locusts) are:

- **Desert Locust situation updates.** Archives Section – Briefs
- **Desert Locust risk map update.** Archives Section – Risk maps
- **SWAC 27th session final report.** Publications Section – Reports
- **DLCC working papers.** Publications Section – Reports

2011 events. The following activities are scheduled or planned:

- **DLCC.** 40th session, Cairo, Egypt (postponed)
- **SWAC.** Desert Locust joint survey in the spring breeding areas of Pakistan and Iran (1 Apr - 4 May)
- **CLCPRO/EMPRES.** ULV Spraying and Environmental Monitoring workshop, Agadir, Morocco (4-12 April)
- **CRC/SWAC.** Desert Locust Information Offcer workshop, Cairo, Egypt (12-13 April)



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.

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.



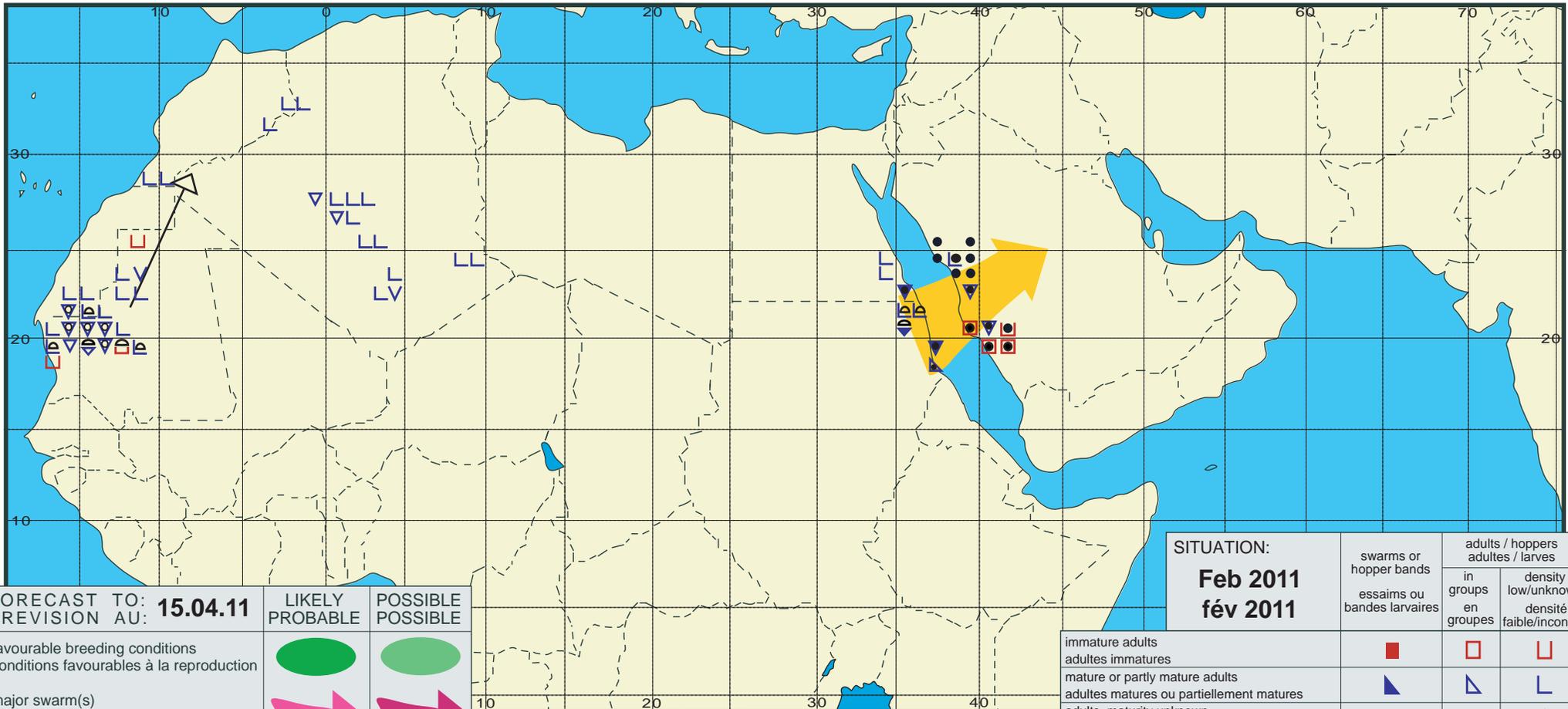
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Desert Locust Summary

Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU: 15.04.11	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 2011 fév 2011	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)			