

warning level: **CAUTION**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 392



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

(3 June 2011)

Significant Desert Locust infestations continued to be present in May on the Red Sea coast in Saudi Arabia where substantial ground and aerial control operations were conducted. Control operations declined in Mauritania and Egypt but were undertaken in the spring breeding areas in Iran and Pakistan. Smaller operations were carried out in Western Sahara and Algeria. During the forecast period, adults that are not controlled in Saudi Arabia are likely to form small groups or swarms that could move to the summer breeding areas in the interior of Sudan and Yemen and lay eggs. This poses a very significant threat to Yemen where survey and control operations are not currently possible. Therefore all efforts are required to contain the current infestations along the Red Sea coast. Higher than normal numbers of locusts will move from the spring breeding areas in northwest Africa to the northern Sahel in West Africa, and from southeast Iran and western Pakistan to the Indo-Pakistan border. Small-scale breeding will commence in these areas with the onset of the summer rains.

Western Region. Ground control operations declined in northwest **Mauritania** (4,600 ha) during May where small groups of hoppers and adults persisted in three areas. The situation remained calm in adjacent areas of the southern part of Western Sahara but adult groups appeared further north and laid eggs. Ground teams treated some 500 ha. Scattered adults persisted in some places along the southern side of the Atlas Mountains in **Morocco**.

Small hopper bands and groups of hoppers and adults formed near irrigated areas in the central Sahara of **Algeria** where ground teams treated nearly 300 ha. During the forecast period, an increasing number of adults will appear in the summer breeding areas in the northern Sahel, primarily in Mauritania and, to a lesser extent, in northern **Mali** and **Niger**. Initial adult numbers will be slightly higher than normal this year due to extended breeding in northwest Mauritania. Small-scale breeding will occur with the onset of the seasonal rains.

Central Region. Ground and aerial control operations increased during May along the Red Sea coast in **Saudi Arabia**, treating nearly 25,000 ha of hopper bands and hopper and adult groups that formed from recent breeding. Adults that are not controlled are likely to form small groups or swarms that could move to the summer breeding areas in the interior of **Sudan** and **Yemen** and lay eggs. Consequently, locust numbers are expected to increase in both countries during the forecast period. As it is not possible to carry out survey and control operations at present in Yemen, the current situation poses a significant threat if rains fall in the summer breeding areas of the interior. Therefore, all efforts are required to contain the current infestations in Saudi Arabia. The locust situation improved along the Red Sea coast in **Egypt** due to drying vegetation and control operations (65 ha).

Eastern Region. Breeding occurred during May in southeast **Iran** and western **Pakistan**, causing locusts to increase and form small groups in both countries. Ground teams treated 6,700 ha in Iran and nearly 6,000 ha in Pakistan. Any adults that are not detected or controlled could form small groups that will move to the summer breeding areas along the Indo-Pakistan border in June and lay eggs on a small scale once the monsoon rains commence.

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.

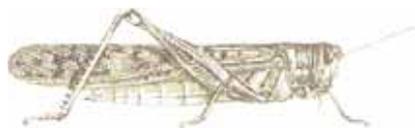
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Weather & Ecological Conditions in May 2011

Vegetation continued to dry out in the winter breeding areas along both sides of the Red Sea and in northwest Africa due to poor rains during May. Ecological conditions remained favourable in parts of the spring breeding areas in western Pakistan and southeast Iran. Generally dry conditions prevailed in the summer breeding areas in the northern Sahel from Mauritania to Sudan.

In the **Western Region**, light rain fell in parts of the spring breeding areas in northwest Africa during May, primarily in central and western Algeria near Adrar, Tindouf and Bechar. Ecological conditions continued to dry out in northwest Mauritania and Western Sahara. Light to moderate rain fell in parts of northern and central Mauritania during the first and second decades of the month respectively. This is not likely to have much effect on current infestations in the northwest of the country. During the third decade, light rain fell in parts of the Tamesna and Air Mountains in Niger and in southern Algeria. Conditions remained dry elsewhere in the summer breeding areas of the northern Sahel in West Africa from Mauritania to Chad where seasonal rains are not expected to commence until June or July.

In the **Central Region**, good rains fell at times during May on the Red Sea coast in Yemen and in parts of the spring breeding areas in the interior of Saudi Arabia and Yemen. Ecological conditions are already favourable in these areas for locust survival and breeding. Light to moderate rains fell over the plateau in northern Somalia, extending to eastern Ethiopia but vegetation remained dry. By the end of the month, a few light showers fell in the summer breeding areas of the interior of Sudan in parts of North Kordofan, Khartoum, White Nile, River Nile, Northern and Kassala States but ecological conditions remained generally dry in most areas. Vegetation continued to dry out along both sides of the Red Sea on the coast of Egypt, Sudan and Saudi Arabia as well as in northern Oman.

In the **Eastern Region**, light rain fell in parts of the spring breeding areas in western Pakistan between Panjgur and Las Bela, and at the end of May in the western part of the Jaz Murian Basin in Iran. Ecological conditions remained favourable for breeding in the Kharan Valley. In the summer breeding areas, light to moderate pre-monsoon showers fell in Rajasthan between Jaisalmer, Barmer, Jodhpur and Bikaner during the second half of May.



Area Treated

Algeria	274 ha (May)
Egypt	65 ha (May)
Iran	6,700 ha (May)
Mauritania	12,405 ha (April, updated) 5,544 ha (May)
Morocco	542 ha (May)
Pakistan	5,665 ha (14-27 May)
Saudi Arabia	24,896 ha (May)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During May, late instar solitary and *transiens* hoppers, immature and mature adults persisted in Inchiri near Tasiast (2034N/1531W) and in southwest Adrar near Tmeimichat (2119N/1420W) and Atar (2032N/1308W). Hoppers and adults continued to form small groups as vegetation dried out. Limited egg laying occurred near Tasiast and Atar. Adult densities were higher near Tasiast, reaching 16,000 adults/ha, than in Adrar (6,000 adults/ha) but declined by the end of the month. Compared to April, control operations declined and ground teams treated 5,544 ha on 1-25 May.

• FORECAST

Although limited hatching may occur in early June and hoppers and adults will continue to concentrate and form a few small groups in the northwest, locust numbers will decline further as adults move towards the summer breeding areas in the south. Adults will appear in the south in slightly higher than normal numbers and lay eggs with the onset of the seasonal rains.

Mali

• SITUATION

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

• FORECAST

Low numbers of adults may be present in parts of the Adrar des Iforas and Tamesna where small-scale breeding is expected to commence with the onset of the seasonal rains.

Niger

• SITUATION

On 14 May, an isolated immature solitary adult was seen in the southern Air Mountains between Agadez (1700N/0756E) and Timia (1809N/0846E) near Aoudares (1738N/0824E).

• Forecast

Isolated adults are likely to appear in the Tamesna and breed on a small scale once the seasonal rains commence.

Chad

• SITUATION

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

• FORECAST

Isolated adults are likely to appear in the northern Sahel and breed on a small scale once the seasonal rains commence.

Senegal

• SITUATION

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

• 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 May, solitary and *transiens* hoppers of all instars concentrated in vegetation that remained green in the central Sahara and formed small groups and a hopper band on the edge of Sabkhet El Maleh (2905N/0106W) between Beni Abbes (3011N/0214W) and Adrar (2753N/0017W). A few mature solitary adults were also present. In the Adrar area, hoppers of all instars mixed with immature and mature adults persisted near irrigated crops, and formed small groups and hopper bands. Some adults were laying eggs. Control teams treated 274 ha in May. A few

isolated mature solitary adults were present about 200 km west of Beni Abbes. No locusts were seen west of Tamanrasset (2250N/0528E).

• FORECAST

Breeding will end in the central Sahara. Current hopper infestations will continue to fledge until about mid-June, and small adult groups are likely to continue to form. As vegetation dries out, adults and perhaps a few small groups will move towards the southern Sahara.

Morocco

• SITUATION

During May, isolated mature solitary adults persisted near Guelmim (2859N/1003W) and in the northeast between Erfoud (3128N/0410W) and Figuig (3207N/0113W).

In the Western Sahara, isolated immature and mature adults persisted in the south between Tichla (2137N/1453W) and the Mauritanian border near Iknouen (2120N/1523W) in early May. During the last decade, groups of immature and mature *transiens* adults, at densities up to 600 adults/ha and locally 2 adults/m², appeared in the northeast where they were laying eggs southwest of Al Mahbes (2724N/0904W). Ground teams treated 542 ha. No locusts were reported in the eastern portion of Western Sahara.

• FORECAST

Although limited hatching may occur near Mahbes in June, locust numbers will decline in all areas as remaining adults move towards the summer breeding areas in southern Mauritania.

Libyan Arab Jamahiriya

• SITUATION

Locust surveys could not be carried out during May and no locusts were reported.

• 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 May.

• FORECAST

No significant developments are likely.



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CENTRAL REGION

Sudan

• **SITUATION**

No reports were received during May.

• **FORECAST**

Scattered adults, perhaps supplemented by a few small groups or swarmlets from the Red Sea coast of Saudi Arabia, are likely to appear along the Nile and Atbara rivers between Khartoum and Dongola as well as in White Nile, North Kordofan and North Darfur. Small-scale breeding will commence with the onset of the seasonal rains, causing locust numbers to increase slightly. All efforts are required to initiate and maintain regular surveys in all summer breeding areas.

Eritrea

• **SITUATION**

No reports were received during May.

• **FORECAST**

Scattered adults are likely to appear in the western lowlands where small-scale breeding will commence with the onset of the summer rains. Regular surveys should be carried out during the summer.

Ethiopia

• **SITUATION**

No reports were received during May.

• **FORECAST**

No significant developments are likely.

Djibouti

• **SITUATION**

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

• **FORECAST**

No significant developments are likely.

Somalia

• **SITUATION**

No reports were received during May.

• **FORECAST**

Isolated adults may appear in areas of recent rainfall on the escarpment between Hargeisa and Berbera. No significant developments are likely.

Egypt

• **SITUATION**

During May, locust infestations continued to decline along the Red Sea coastal plains between Shalatein (2308N/3535E) and Abu Ramad (2224N/3624E). Scattered *transiens* hoppers and scattered immature and mature solitary, *transiens* and gregarious adults and groups persisted in a few places. Ground teams treated 65 ha. Elsewhere, isolated mature solitary and *transiens* adults were seen near Marsa Alam (2504N/3454E) and Garf Husein (2317N/3252E).

• **FORECAST**

Locust numbers will decline on the Red Sea coast as scattered adults move towards the Western Desert where they are likely to appear near Lake Nasser, Sh. Oweinat and perhaps Jebel Uweinat. This could be supplemented by a few groups or swarmlets from the eastern side of the Red Sea in June.

Saudi Arabia

• **SITUATION**

During May, aerial and ground control operations increased against hopper bands and groups of hoppers, immature and mature adults on the Red Sea coast near Lith (2008N/4016E) and, to a lesser extent, just north of Jeddah (2130N/3910E). Hopper groups and bands were also treated near Umm Lajj (2501N/3716E) and at a few places in the Asir Mountains south of Medinah (2430N/3935E). Most of the hoppers were third to fifth instar. A total of 24,896 ha were treated of which 9,700 ha were by air. No locusts were seen in the interior or in the southern Asir Mountains near Khamis Mushait (1819N/4245E).

• **FORECAST**

Although fledging will continue early in the forecast period, locust numbers will decline on the Red Sea coast due to control operations and drying vegetation. Any residual adults that are not detected or controlled on the coast are likely to form small groups and perhaps a few small swarms that could move to the summer breeding areas in the interior of Sudan and Yemen. There is a lower risk of movement towards the northeast to areas of recent rainfall in the interior.

Yemen

• **SITUATION**

Locust surveys could not be carried out during May and no locusts were reported.

• **FORECAST**

Scattered adults, perhaps supplemented by a few small groups or swarmlets, may appear in the interior between Marib and Thamud. Scattered adults may be present in areas of recent rainfall on the Red Sea coast.

Oman

• SITUATION

During May, no locusts were seen during surveys carried out in the north (Buraimi and Dakhliya regions) and the southern region of Dhofar.

• FORECAST

No significant developments are likely.

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 May, ground teams treated 6,700 ha of solitarious hoppers and immature and mature adults in the Jaz Murian Basin southeast of Kahnuj (2757N/5742E).

• FORECAST

Locust numbers will decline in the Jaz Murian Basin and no significant developments are likely.

Pakistan

• SITUATION

During May, locust numbers continued to increase in the Kharan Valley (2832N/6526E) in northern Baluchistan where groups of solitarious and *transiens* hoppers and immature adults formed along a 150 km stretch of the valley from previous breeding. By mid-month, most of the infestations were fourth and fifth instar hoppers and fledglings with densities up to 10 hoppers/m² and 900 adults/ha. A few hopper bands were also reported. Ground teams treated 5,665 ha on 14-27 May. No locusts were seen elsewhere in the spring breeding areas.

• Forecast

Locust numbers will decline in the Kharan Valley due to control operations and drying vegetation. Nevertheless, any residual adults that are not detected or controlled could form small groups that will move to the summer breeding areas along the Indo-Pakistan border.

India

• SITUATION

During May, an isolated mature adult was seen on the 30th near Nagaur (2711N/7344E). No locusts were seen elsewhere during surveys in Rajasthan and Gujarat.

• FORECAST

Scattered adults, perhaps supplemented by a few small groups coming from the spring breeding areas in western Pakistan, are likely to appear in parts of

Rajasthan and Gujarat, and breed on a small scale with the onset of the monsoon rains.

Afghanistan

• SITUATION

No reports received.

• FORECAST

No significant developments are likely.



Announcements

Desert Locust warning levels. A colour-coded scheme indicates the seriousness of the current Desert Locust situation: green for *calm*, yellow for *caution*, orange for *threat* and red for *danger*. The scheme is applied to the Locust Watch web page and to the monthly bulletin's header. The levels indicate the perceived risk or threat of current Desert Locust infestations to crops and appropriate actions are suggested for each level.

Locust reporting. During calm (green) periods, countries should report at least once/month and send RAMSES data with a brief interpretation. During caution (yellow), threat (orange) and danger (red) periods, often associated with locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent at least twice/week within 48 hours of the latest survey. Affected countries are also encouraged to prepare decadal bulletins summarizing the situation. All information should be sent by e-mail to the FAO/ECLO Desert Locust Information Service (ecl@fao.org). Information received by the end of the month will be included in 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



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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).

Greenness maps. 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.devcoast.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 disseminates updates on the Desert Locust situation via Twitter, a social media service. The updates can be followed on some mobile phones in some countries (send an SMS to 40404: 'Follow faolocust' (no quotes) and through the Internet (<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>.

EMPRES/CRC web site. The EMPRES / Central Region Commission (CRC) web site can be found at <http://crc-empres.fao.net/>.

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

- **Desert Locust situation updates.** Archives Section – Briefs
- **Iran/Pakistan 2011 Joint survey results.** Publications Section – Reports
- **Greenness maps.** Activities Section – DLIS
- **Twitter.** Home page link
- **eLERT.** Information Section

2011 events. The following activities are scheduled or planned:

- **DLCC.** 40th session, Cairo, Egypt (September, to be confirmed)



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

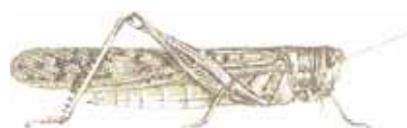
- locust-affected countries in West and North-West Africa: Algeria, Chad, Libya, Mali, Mauritania, Morocco, Niger, Senegal, Tunisia; during plagues only: Burkino Faso, Cape Verde, Gambia, Guinea and Guinea-Bissau.

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.

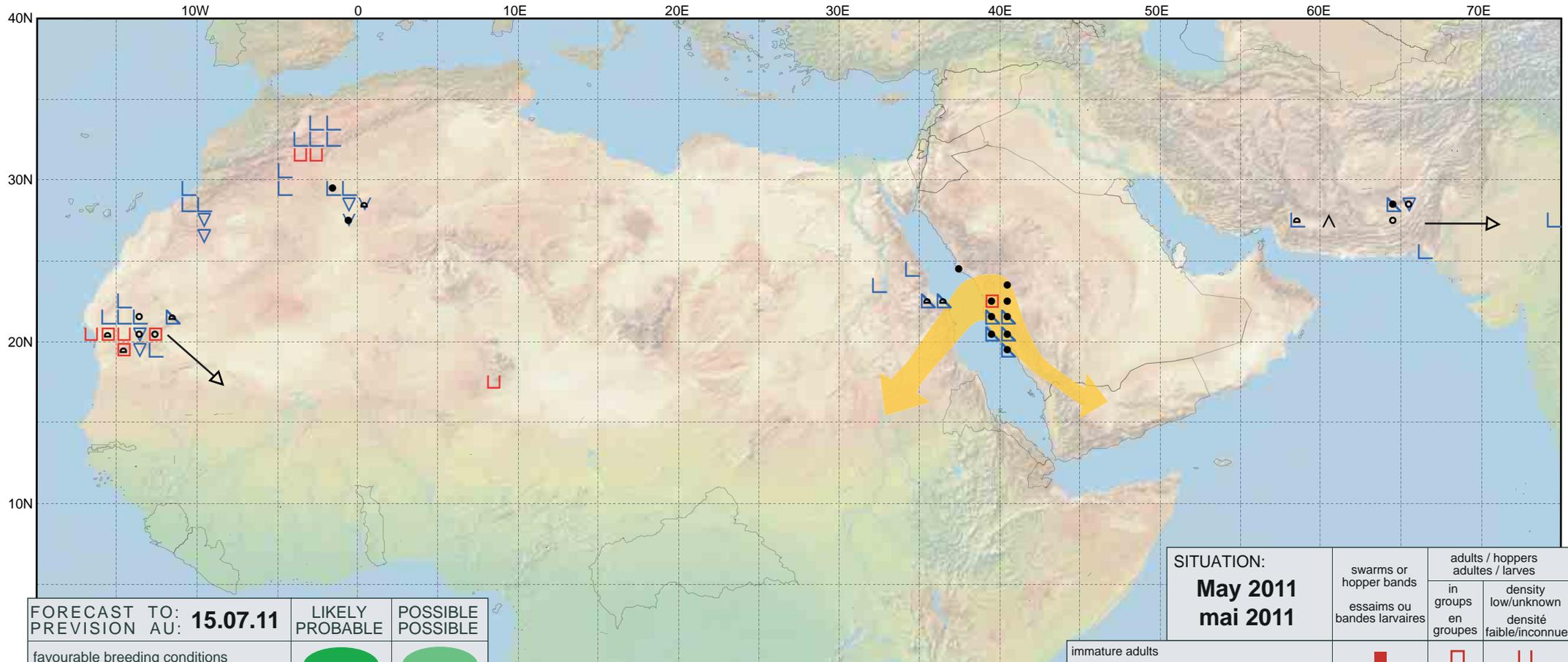


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Desert Locust Summary

Criquet pèlerin - Situation résumée



FORECAST TO: PREVISION AU: 15.07.11	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: May 2011 mai 2011	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)			