

warning level: **CAUTION**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 417



**General Situation during June 2013
Forecast until mid-August 2013**

(2 July 2013)

The Desert Locust situation remained serious during June as adult groups and small swarms formed in the northern Central Region and moved to the summer breeding areas in Yemen. Control operations were carried out in Saudi Arabia and Egypt. Nevertheless, there remains a risk that adult groups and perhaps a few small swarms will also reach the summer breeding areas in Sudan in early July. Breeding will occur in Sudan and Yemen, causing locust numbers to increase during the forecast period. Hopper and adults continued to form small groups in the spring breeding areas of Northwest Africa where control operations were in progress. Groups of adults and perhaps a few small swarms are expected to move to the summer breeding areas in the Sahel of West Africa in early July and breed with the onset of the seasonal rains, causing locust numbers to increase in Mauritania, Mali, Niger and Chad. Summer surveys should commence in all areas.

Western Region. Hoppers and adults continued to form small groups during June in the spring breeding areas south of the Atlas Mountains in **Algeria** and **Morocco** as well as in south-central **Libya**. Control operations were in progress in the three countries. As vegetation continues to dry out, an increasing number of groups and perhaps a few small swarms are likely to form and move south to the summer breeding areas in the northern Sahel of **Mauritania, Mali, Niger** and **Chad** in July. So far, only local breeding has occurred in the Air Mountains of Niger and scattered adults

appeared on the Tamesna Plains in June. Once the seasonal rains commence in the Sahel, breeding will cause locust numbers to increase in southern Mauritania, northern Mali and Niger, and in northeast and central Chad.

Central Region. Groups of immature adults continued to form during June in the Sinai, northwest **Saudi Arabia**, and most likely in western **Israel**. The groups as well as several small swarms moved south through **Israel, Jordan** and Saudi Arabia to the interior of **Yemen**. A few groups appeared on the central Red Sea coast in Saudi Arabia, flying towards **Sudan**. Groups and small swarms were also seen in the Western Desert in **Egypt**. Control operations continued in Saudi Arabia and Egypt but could not be undertaken in Yemen due to insecurity and beekeepers. During the forecast period, there is a risk that a few more groups and perhaps small swarms may move from the interior of Saudi Arabia to Yemen and Sudan. Similarly, a few small groups may also move from Egypt to Sudan. Consequently, initial locust numbers will be higher than normal in the vast summer breeding areas of Sudan where at least one generation of breeding will occur, causing locust numbers to increase further. Breeding is also expected to occur in the interior of Yemen where hopper bands are likely to form.

Eastern Region. Small-scale breeding continued during June in the Jaz Murian Basin in southeast **Iran** where low numbers of hoppers were present. Unusually good rains fell in the summer breeding areas on both sides of the Indo-Pakistan border. Consequently, ecological conditions will become favourable and small-scale breeding will cause locust numbers to increase in **Pakistan** and **India**.

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 are available on the Internet.

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Weather & Ecological Conditions in June 2013

Unusually good rains fell in the summer breeding areas along the Indo-Pakistan border. Seasonal rains started in a few places on the southern part of the summer breeding areas in the Sahel of West Africa and Sudan. Vegetation dried out in the spring breeding areas in Northwest Africa.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) continued its seasonal northwards movement over the Sahel in West Africa, reaching 16-19N over Mali, Niger and Chad, which is further north than usual. Consequently, light rains fell at times in a few places on the southern edge of the summer breeding area. In Mauritania, light rain fell in the southeast to the south of Timbedra but vegetation remained dry. In Mali, ecological conditions remained dry in the northeast although light rains fell in the southern Tamesna on the border of Niger south of Gao. In Niger, light rain fell near Tahoua. Vegetation remained green in parts of the Air Mountains but was dry and unfavourable for breeding on the Tamesna Plains. Vegetation was becoming green further south in the pasture areas. In Chad, light rains fell in parts of Lac, Kanem, Ouaddai and southern Biltine but vegetation remained dry. In Northwest Africa, no significant rain fell and annual vegetation was drying out as temperatures increased in the spring breeding areas. In Morocco, green vegetation persisted in a few places south of the Atlas Mountains near Guelmim, in the Draa and Ziz-Ghris valleys and in the northeast near Figuig. In Algeria, annual vegetation had become dry. In Libya, ecological conditions became unfavourable for breeding in the Marzuq and Ghat areas.

In the **Central Region**, the ITCZ was well north of 15N in Sudan by the end of June, which is further north than usual. Consequently, seasonal rains commenced in parts of the summer breeding areas of Darfur, Kordofan, and White Nile states. Light rain also fell in a few places of the western lowlands in Eritrea. Nevertheless, vegetation remained dry and unfavourable for breeding in both countries. In Egypt, vegetation was drying out in all areas except

near irrigated crops. In Yemen, green vegetation and favourable breeding conditions were present in the main wadis of Shabwah and Hadhramaut in the interior summer breeding areas. Light rain fell in some places. Good rains fell in the interior of northern Oman and vegetation was green.

In the **Eastern Region**, light rains fell in the spring breeding areas of western Pakistan in early June. Abnormal pre-monsoon rains fell in the summer breeding areas along both sides of the Indo-Pakistan border. This was supplemented by above-average rains (26%) associated with the arrival of the monsoon on 16 June along the Indo-Pakistan border. Consequently, vegetation was becoming green in parts of Barmer district near the Indo-Pakistan border and in a few places of Jodhpur district in India.



Area Treated

Algeria	2,592 ha (June)
Egypt	1,230 ha (June)
Iran	510 ha (June)
Libya	1,990 ha (1-23 June)
Morocco	3,227 ha (June)
Saudi Arabia	23,990 ha (1-24 June)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

No reports were received in June.

• FORECAST

Low to moderate numbers of adults and perhaps a few groups or small swarms are likely to appear in the south and breed once the seasonal rains commence.

Mali

• SITUATION

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

• FORECAST

Low to moderate numbers of adults and perhaps a few groups or small swarms may appear from the north in the Adrar des Iforas, Tilemsi Valley and Tamesna, and breed with the onset of the seasonal rains.

Niger

• SITUATION

During June, isolated hoppers mixed with isolated immature and mature solitary adults persisted in the Air Mountains southeast of Timia (1809N/0846E). Scattered immature and mature solitary adults appeared on the Tamesna Plains between In Abangharit (1754N/0559E) and Tassara (1650N/0550E) at mid-month.

• FORECAST

Locust numbers are expected to increase in Tamesna and the pasture areas between Tahoua and Tanout as breeding occurs with the onset of the seasonal rains. Groups of adults and perhaps a few small swarms could arrive in these areas from the north in July.

Chad

• SITUATION

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

• FORECAST

There is a low risk that groups of adults and perhaps a few small swarms could appear in the centre and northeast in early July. Thereafter, small-scale breeding will occur with the onset of the seasonal rains, causing locust numbers to increase.

Senegal

• SITUATION

No reports were received in June.

• 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 June, small groups of immature adults continued to form in the northwestern Sahara near the Moroccan border between Bechar (3135N/0217W) and Ain Sefra (3245N/0035W), and near irrigated crops in the Adrar (2753N/0017W) area of the central Sahara. As the month progressed, there was a decline in the number of infestations. No locusts were seen near Tamanrasset (2250N/0528E), Djanet (2434N/0930E) and Illizi (2630N/0825E). Ground teams treated 2,592 ha in June.

• FORECAST

As vegetation dries out, adult groups and perhaps a few small swarms that were not detected or controlled

are likely to move south to the northern Sahel in West Africa.

Morocco

• SITUATION

During June, small hopper groups and bands continued to form south of the Atlas Mountains near Guelmim (2859N/1003W) but densities declined to about 5-8 hoppers/m². Fledging occurred by mid-month and immature adults formed groups at densities up to 9,000 adults/ha. Groups of immature and mature solitary and *transiens* adults formed along the Algerian border in the Ziz-Ghris Valley southwest of Erfoud (3128N/0410W) and between Erfoud and Figuig (3207N/0113W). Ground teams treated 3,227 ha in June.

• FORECAST

As vegetation dries out, immature adult groups and perhaps a few small swarms that were not detected or controlled are expected to move south to the northern Sahel in West Africa.

Libya

• SITUATION

During June, hoppers of all instars, fledglings, and immature and mature adults continued to form small groups in the south-central area between Marzuq (2555N/1355E) and Sabha (2704N/1425E). Ground control teams treated 1,990 from 1 to 23 June. No locusts were seen elsewhere.

• FORECAST

A limited number of immature adult groups and perhaps a few small swarms will form from any infestations that were not detected or could not be treated and move to the northern Sahel in West Africa in early July.

Tunisia

• SITUATION

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

• FORECAST

No significant developments are likely.

CENTRAL REGION

Sudan

• SITUATION

During June, locust numbers continued to decline in the Nile Valley and only scattered mature



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solitary adults persisted in irrigated schemes north of Abu Hamed (1932N/3320E) and near Ed Damer (1734N/3358E) and the Atbara River. Scattered mature solitary adults appeared in the summer breeding areas northwest of Khartoum in irrigated crops along Wadi Muqqadam.

- **FORECAST**

There remains a low to moderate risk that a few groups and perhaps small swarms may appear in early July in the summer breeding areas between Chad and Eritrea. Breeding will cause locust numbers to increase in Darfur, Northern Kordofan, White Nile, Khartoum and Kassala states.

Eritrea

- **SITUATION**

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

- **FORECAST**

Low numbers of adults are likely to appear in the western lowlands and breed on a small scale in areas of recent rainfall, causing locust numbers to increase.

Ethiopia

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

Djibouti

- **SITUATION**

No reports were received in June.

- **FORECAST**

No significant developments are likely.

Somalia

- **SITUATION**

No locusts were seen during surveys carried out in June on the plateau and escarpment between Boroma (0956N/4313E), Hargeisa (0931N/4402E) and Berbera (1028N/4502E), and along the northwest coast between Berbera and Djibouti.

- **FORECAST**

No significant developments are likely.

Egypt

- **SITUATION**

During June, an increasing number of immature gregarious adult groups formed in the northern Sinai near El Arish (3108N/3348E) and in southern Sinai between Abu Zenima (2903N/3306E) and Sharm Esh Sheikh (2752N/3413E). Groups of immature and mature solitary and *transiens* adults formed along the western side of Lake Nasser between Garf Husein (2317N/3252E) and Abu Simbel (2219N/3138E), and in the Western Desert near Farafra (2710N/2818E), Dakhla (2530N/2900E), Kharga (2525N/3034E) and Baris (2448N/3035E). Ground teams treated 1,230 ha in June.

- **FORECAST**

Locust numbers will decline in all areas as adults move south to the summer breeding areas in Sudan. Isolated adults may persist in crops near Lake Nasser.

Israel

- **SITUATION**

In early June, small groups of immature adults moved south in the Negev Desert to Mitzpe Ramon (3036N/3448E), Eilat (2933N/3457E), and the Arava Valley near Jordan.

- **FORECAST**

Locust numbers will decline in all areas as adults move south to the summer breeding areas in Sudan.

Jordan

- **SITUATION**

A few immature adult groups and small swarms reportedly moved from Israel to Saudi Arabia in the extreme southwest of the country in early June. No further details are available.

- **FORECAST**

No significant developments are likely.

Saudi Arabia

- **SITUATION**

In early June, breeding ended in the extreme north of the Red Sea coast and in adjacent subcoastal areas near Tabuk (2823N/3635E) where immature adult groups formed and moved south, together with immature groups and a few small swarms from Israel and Jordan, through the Asir Mountains and appearing near Mecca (2125N/3949E), Bisha (2000N/4236E) and Abha (1813N/4230E), flying towards Najran (1729N/4408E) in the south. A few groups appeared on the central Red Sea coast between Lith (2008N/4016E) and Qunfidah (1909N/4107E) where they were seen flying out to sea towards Sudan on the 5th. In the interior, hatching occurred near Gassim (2621N/4358E) where early instar hopper groups and bands were present. Control teams treated 23,990 ha on 1-24 June of which 18,660 ha were by air.

• **FORECAST**

Locust numbers will decline in all areas as adults move to the summer breeding areas in Yemen and Sudan.

Yemen

• **SITUATION**

In early June, scattered immature and mature solitary adults were present in the interior between Marib (1527N/4519E), Nisab (1430N/4629E) and Shabwah (1522N/4700E), and on the plateau between Sayun (1559N/4844E) and Thamud (1717N/4955E). On the 13th, an immature swarm was reported in the Saadah Governorate coming from Saudi Arabia. This was followed by reports of immature and mature swarms near the border in Wadi Ketaf (1704N/4412E) and Al Buqa (1720N/4436E), and further south in the interior near Al Hazm (1609N/4447E) and Bayhan (1452N/4545E). On the 20th, there were reports of immature swarms in Lahj Governorate west of Al Baydha (1405N/4542E). Control operations were not possible due to insecurity and beekeepers.

• **FORECAST**

Small groups and swarms will disperse in the summer breeding areas of the interior and breed in areas of recent rainfall, causing locust numbers to increase and small hopper groups and bands to form.

Oman

• **SITUATION**

No locusts were seen during surveys carried out in June near the border of Yemen and Maziuna (1750N/5239E) and in the northern interior between Nizwa (2255N/5731E) and Adam (2223N/5731E).

• **FORECAST**

No significant developments are likely.

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

• **FORECAST**

No significant developments are likely.

EASTERN REGION

Iran

• **SITUATION**

During June, low numbers of medium-density solitary hoppers were present in the Jaz Murian Basin near Ghale Ganj (2731N/5752E) from egg-laying in mid-May. Control teams treated 510 ha in June. No locusts were seen during surveys on the southeast coast near Jask (2540N/5746E) and Chabahar (2517N/6036E).

• **FORECAST**

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

Pakistan

• **SITUATION**

During June, isolated solitary adults were maturing in the spring breeding areas of Baluchistan near Pasni (2515N/6328E). Low numbers of mature solitary adults appeared at the end of the month in the summer breeding areas on the Indo-Pakistan border southeast of Rahimyar Khan (2822N/7020E).

• **FORECAST**

Small-scale breeding will cause locust numbers to increase in Cholistan and Tharparkar.

India

• **SITUATION**

During June, isolated mature solitary adults were seen at two places between Bikaner (2801N/7322E) and the border of Pakistan.

• **FORECAST**

Small-scale breeding will cause locust numbers to increase in Rajasthan and Gujarat.

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



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are also encouraged to prepare decadal bulletins summarizing the situation. All information should be sent by e-mail to the FAO/ECLD Desert Locust Information Service (eclod@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.

Locust tools and resources. FAO has developed a number of tools that National locust information officers and other interested individuals can use for Desert Locust early warning and management:

- **MODIS.** Vegetation imagery every 16 days (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/Regional/MODIS/index.html)
- **MODIS.** Daily rainfall imagery in real time (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/index.html)
- **RFE.** Rainfall estimates every day, decade and month (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/index.html)
- **Greenness maps.** Dynamic maps of green vegetation evolution every decade (<http://www.devcoast.eu/user/images/dl/Form.do>)
- **FAODLIS Google site.** A platform for sharing problems, solutions, tips and files for eLocust2, eLocust2Mapper, RAMSES and remote sensing (<https://sites.google.com/site/faodlis>)
- **FAOLOLUST Twitter.** The very latest updates are posted on Twitter (<http://www.twitter.com/faololust>)
- **FAOLOLUST Facebook.** A social means of information exchange using Facebook (<http://www.facebook.com/faololust>)
- **Slideshare.** Locust presentations and photos available for viewing and download (<http://www.slideshare.net/faololust>)
- **eLERT.** A dynamic and interactive online database of resources for locust emergencies (<http://sites.google.com/site/elertsite>)

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

- **Desert Locust situation updates.** Archives Section – Briefs

- **NE Egypt invasion.** Information section
- **Sudan threat.** Information section

eLocust3. A demonstration version is available for viewing and downloading at Slideshare in:

English: <http://www.slideshare.net/FAOLOLUST/elocust3-a-preview>

French: <http://www.slideshare.net/FAOLOLUST/elocust3f-a-preview-french-version>

Arabic: <http://www.slideshare.net/FAOLOLUST/elocust3-a-preview-arabic-version>

2013 events. The following activities are scheduled or planned:

- **CRC.** 8th sub-regional training course on Desert Locust control operations, 8-12 September, Oman.



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.

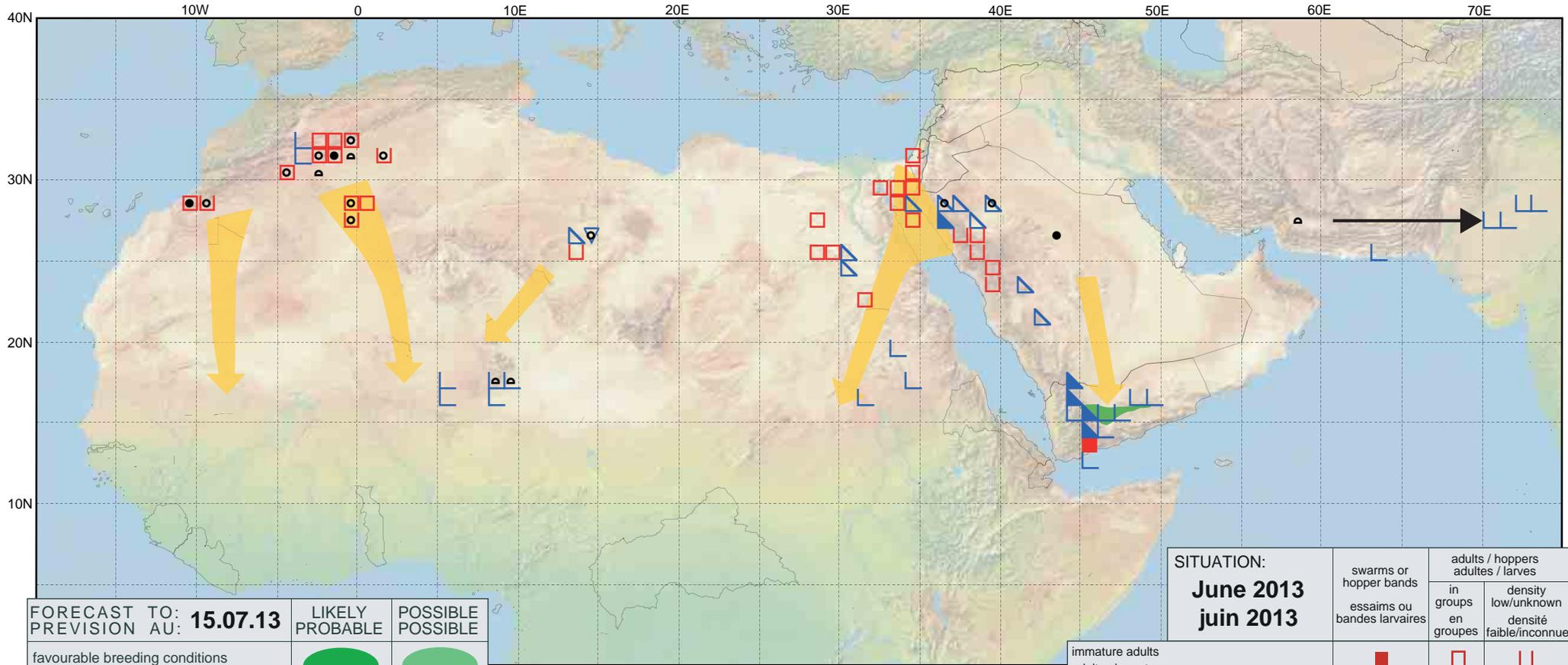


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Desert Locust Summary

Criquet pèlerin - Situation résumée



FORECAST TO: PREVISION AU:	15.07.13	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: June 2013 juin 2013	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)			