

warning level: **CAUTION**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 428



**General Situation during May 2014
Forecast until mid-July 2014**

(3.6.2014)

The Desert Locust situation remained calm during May except in the Arabian Peninsula and Horn of Africa. Ground and aerial control operations were carried out against hopper bands that formed in the interior of Saudi Arabia. Ground operations were also undertaken in northern Oman and UAE. Swarms moved along the plateau in northern Somalia and into eastern Ethiopia with a few reaching the central and northern highlands. Although aerial and ground control operations were carried out, egg-laying and subsequent hopper band formation are expected in eastern Ethiopia and perhaps northern Somalia. There is a risk that a few small swarms from northeast Somalia and Oman may reach the summer breeding areas along the Indo-Pakistan border where pre-monsoon rains fell in May and early breeding is expected. During the forecast period, locust numbers will increase slightly in the summer breeding areas of the Sahel of West Africa and Sudan with the onset of the seasonal rains.

Western Region. The situation remained calm during May. Due to a lack of rain, dry conditions prevailed in the spring breeding areas south of the Atlas Mountains in Northwest Africa. A few groups of hoppers and adults were treated near irrigated crops in the central Sahara of **Algeria**. Early rains may have fallen in parts of the summer breeding areas in the northern Sahel of West Africa. During the forecast period, low numbers of adults are expected to appear

in southeast and central **Mauritania**, northern **Mali** and in the Tamesna and Air Mountains of northern **Niger**. Small-scale breeding will occur in those areas that receive rainfall.

Central Region. Locusts declined on the Red Sea coast of northern **Saudi Arabia** as small groups and swarms moved to the interior where hatching and band formation occurred in May. Aerial and ground control operations were carried out. Breeding also occurred in the northern interior of **Oman** where an increasing number of hopper groups formed and were treated. The infestations extended to several farms on the border in **UAE** where hopper bands were controlled. About a dozen swarms appeared in eastern **Ethiopia** from adjacent areas of northern **Somalia**. A few swarms moved east across northern Somalia and may continue towards the Indo-Pakistan summer breeding areas. Most of the swarms remained in eastern Ethiopia while a few moved into the central and northern highlands. Although aerial and ground control operations were undertaken, breeding will occur during the forecast period, causing hopper bands to form in eastern Ethiopia and, to a lesser extent, in parts of the northern Somalia plateau. Small-scale breeding occurred in cropping areas of the Nile Valley in northern **Sudan** and control operations were carried out.

Eastern Region. The situation remained calm in May. Small-scale breeding in southeast **Iran** may cause a few adult groups to form and move to the Indo-Pakistan border. A similar situation may be in progress in southwest **Pakistan** where heavy rains fell in May. Limited control operations were carried out in Iran. Early breeding is expected to occur along both sides of the Indo-Pakistan border due to a second consecutive month of pre-monsoon rains. There is a risk that a few small groups or swarms may appear from Oman and perhaps northern Somalia.

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 May 2014

Ecological conditions remained unusually dry in the spring breeding areas of Northwest Africa due to little rainfall. Good rains fell in the Horn of Africa. Early rains fell in parts of the summer breeding areas of the Sahel in West Africa and, for the second consecutive month, along the Indo-Pakistan border.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) continued its seasonal movement northwards over the Sahel in West Africa in May. During the first two decades, it was positioned further north than usual over Mali and Niger, reaching Gao and Tassara, respectively. Light to moderate rains, early for this time of year, may have fallen in parts of Tamesna in both countries, the Air Mountains in Niger, and from Timetrine and northwest Mali to southeast and central Mauritania. No rain fell during the third decade. In Northwest Africa, light rains fell in parts of the Anti-Atlas Mountains in Morocco during the first decade and along the southern side of the Atlas Mountains in the northeast, extending to Algeria during the second decade. Despite these rains, primarily dry conditions prevailed in the region but ecological conditions are expected to improve in Mauritania, Mali and Niger.

In the **Central Region**, good rains fell over the Horn of Africa and in the spring breeding areas of the interior of Saudi Arabia during the first two decades of May. Light to moderate rainfall occurred in eastern Ethiopia and adjacent areas on the northern Somalia plateau between Boroma, Garowe and Erigavo. Heavier rains fell in the Ethiopian Highlands and in parts of the Ogaden. Consequently, ecological conditions remained favourable for breeding in Ethiopia and improved in northern Somalia where the southwest monsoon winds had become established by mid May. In the spring breeding areas in the interior of Saudi Arabia, good rains fell during the first decade of May near Hail that should allow breeding to continue until June. In northern Oman, vegetation was drying out in most places despite light rainfall in early May. In the summer breeding areas, good rains fell in eastern Sudan near Derudeb for the second

consecutive month and ecological conditions are likely to be favourable for breeding.

In the **Eastern Region**, good rains fell in parts of the spring breeding areas in southeast Iran and southwest Pakistan in mid-May. The heaviest showers occurred in Pakistan near Turbat and Lasbela. The rains may allow ecological conditions to remain favourable for locust breeding and survival slightly longer than in most years. Pre-monsoon rains continued to fall along both sides of the Indo-Pakistan border during the first two decades of May. Consequently, breeding is likely to commence earlier than most years in parts of Tharparkar and Cholistan, Pakistan and in Rajasthan, India.



Area Treated

Control operations treated nearly 30,000 ha in May, which was slightly more than in April.

Algeria	40 ha (May)
Ethiopia	2,372 ha (May)
Iran	2,400 ha (May)
Oman	4,960 ha (May)
Saudi Arabia	16,448 ha (May)
Sudan	4,595 ha (April updated)
	786 ha (May)
UAE	2,500 ha (May)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

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

• FORECAST

Scattered adults are likely to appear in the southeast and centre, and breed on a small scale with the onset of the summer rains.

Mali

• SITUATION

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

• FORECAST

Scattered adults are likely to appear in parts of Timetrine, the Adrar des Iforas, and Tamesna and breed on a small scale as ecological conditions improve in areas of recent rainfall.

Niger

• SITUATION

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

• FORECAST

Scattered adults are likely to appear in parts of Tamesna and the Air Mountains, and breed on a small scale as ecological conditions improve in areas of recent rainfall.

Chad

• SITUATION

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

• FORECAST

No significant developments are likely.

Senegal

• SITUATION

No reports were received 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, groups of immature and mature adults were present near cropping areas south of Adrar (2753N/0017W). The mature adults were copulating and late instar hopper groups were seen at one place. Ground teams treated 40 ha. No locusts were seen in the east near Illizi (2630N/0825E).

• FORECAST

Low numbers of adults are likely to persist near crops in the Adrar area where limited breeding could continue. Scattered adults may appear in the extreme south if rainfall occurs.

Morocco

• SITUATION

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

• FORECAST

Unless further rains fall in the spring breeding areas, no significant developments are likely.

Libya

• SITUATION

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

• FORECAST

Unless further rains fall in the spring breeding areas, 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.

CENTRAL REGION

Sudan

• SITUATION

During the second half of April, control operations declined in the northeast where 975 ha of small groups and swarms of immature and mature adults were treated along Wadi Oko/Diib between Tomala (2002N/3551E) and Sufiya (2119N/3613E). Scattered adults were breeding on a small scale in a few places along the Nile River near Abu Hamed (1932N/3320E) and Dongola (1910N/3027E).

During May, scattered immature and mature solitary adults persisted in Wadi Oko/Diib. No locusts were seen on the southern coastal plains. In the Nile Valley, solitary hoppers and scattered maturing solitary and gregarious adults, at densities up to 1,250 adults/ha, were present in cropping areas in the Nile Valley near Dongola, Merowe (1830N/3149E), Berber (1801N/3400E) and Ed Damer (1734N/3358E). Some adults were copulating. Aerial control operations treated 786 ha of small adult groups near Ed Damer.

• FORECAST

Small-scale breeding will continue in the Nile Valley of Northern and River Nile States. An increasing number of adults will appear in summer breeding areas between Darfur and the Red Sea Hills, perhaps supplemented by a few small swarmlets from Saudi Arabia and Ethiopia. Initially, most of the adults are likely to be present in areas of recent rainfall near Kassala, but will extend to other areas as rains fall. Small-scale breeding will cause locust numbers to increase slightly.

Eritrea

• SITUATION

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



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• FORECAST

Scattered adults are likely to appear in the western lowlands where small-scale breeding will occur with the onset of the summer rains.

Ethiopia

• SITUATION

During May, about a dozen small to medium sized immature and mature swarms, ranging in size from 7 to 50 km², appeared from northern Somalia in Somali and Dire Dawa regions of the east. Some of the swarms moved to Oromiya, Addis Ababa and Amhara regions, reaching Addis Ababa on the 14th and adjacent districts in the highlands during the following week. One swarm nearly reached Lake Tana in the north and then disappeared. Control operations treated 2,372 ha mainly in the first half of May, of which 2,150 ha were treated by air.

• FORECAST

Breeding may be in progress and is likely to continue during June in Dire Dawa and Somali regions, perhaps including parts of the Ogaden, leading to the formation of hopper bands. There is a moderate risk that some swarms may reach the northern highlands where breeding is less likely.

Djibouti

• SITUATION

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

• FORECAST

No significant developments are likely.

Somalia

• SITUATION

In early May, there was an unconfirmed report of hoppers on the northwest coast near Geerisa (1022N/4434E). There were a few reports of immature and mature swarms on the plateau after mid-month. On the 19-20th, a mature swarm appeared over Hargeisa (0931N/4402E). On the 25-26th, immature swarms were reported near Boroma (0956N/4313E). On the 27th, maturing swarms were seen further east in Sool region, reaching the Las Anod (0828N/4721E) area that may have reached the northeast on the 29th.

• FORECAST

Small adult groups and swarms could continue to move towards the northeast early in the forecast

period. Limited breeding may occur in a few places on the plateau where rains fell recently that may lead to the formation of small hopper groups and bands.

Egypt

• SITUATION

No locusts were seen in May during surveys carried out on the Red Sea coast and in subcoastal areas near Abu Ramad (2224N/3624E), and along both sides of Lake Nasser in the Allaqi, Garf Husein (2317N/3252E), Abu Simbel (2219N/3138E) and Tushka (2247N/3126E) areas.

• FORECAST

No significant developments are likely.

Saudi Arabia

• SITUATION

During May, a few hoppers and adult groups persisted on the northern Red Sea coast and near Tabuk (2823N/3635E). Adult groups and small swarms continued to move from the Tabuk and Medinah regions to the interior where they persisted throughout the month. Egg-laying commenced in the third week of April followed by hatching from early May onwards. Hoppers of all instars formed small groups and bands from east of Khaybar (2542N/3917E) to Hail (2731N/4141E) and Gassim (2621N/4358E). Smaller scale breeding occurred south of Al Jawf (2948N/3952E) where mature adults, hoppers and a few hopper groups were present. Two aircraft and 15 ground teams treated 16,448 ha in May, of which 5,800 were by air.

• FORECAST

Early in the forecast period, small adult groups are likely to form in the interior near Hail, especially near cropping areas. Thereafter, locust infestations will decline as temperatures increase, vegetation dries out, and adults move to summer breeding areas in Sudan.

Yemen

• SITUATION

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

• FORECAST

Scattered adults may be present in parts of the interior where rains previously fell. Unless further rainfall occurs, no significant developments are likely.

Oman

• SITUATION

During May, breeding continued in the northern interior region of Dhahera between Ibri (2314N/5630E) and Buraimi (2415N/5547E) where an increasing number of small groups of late instar hoppers and immature adults developed as the month progressed.

Fledging started at mid-month and adults were maturing. Most of the infestations were concentrated southwest of Ibra and moving into farms as vegetation dried out. Ground teams treated 4,960 ha in May. Scattered mature solitary adults were seen further east near Ibra (2243N/5831E), and low-density solitary adults were reported from the Musandam Peninsula near Diba (2538N/5615E) at the end of the month.

- **FORECAST**

An increasing number of adult groups, and perhaps a few small swarmlets, are likely to form in Dhahera as vegetation dries out. Undetected breeding may have occurred in parts of Dakhiliya and Sharqiya.

UAE

- **SITUATION**

On 13 May, fourth and fifth instar hopper bands at densities of 10-20 hoppers/m² first moved from adjacent areas in Oman into several farms along a 50 km stretch of the border southwest of Al Ain (2413N/5543E) between Al Araad (2348N/5525E) and Al Quo'a (2326N/5525E). As hoppers fledged, immature adults increased from 18 to 25 May; thereafter, infestations declined as ground teams treated 2,500 ha. In Al Sharjah, low-density solitary adults were reported near Al Dhaid (2519N/5557E) on the 25th.

- **FORECAST**

A few small adult groups may appear near Al Ain and in parts of Ras Al Khaimah and Fujairah early in the forecast period.

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

- **FORECAST**

No significant developments are likely.

EASTERN REGION

Iran

- **SITUATION**

During May, control operations against hopper infestations on the southeast coast near Jask (2540N/5746E) ended on the 11th. In the Jaz Murian Basin, hatching occurred near Kahnuj (2757N/5742E) where solitary and *transiens* hoppers of all instars formed a few small groups of up to 200 hoppers/bush. Fledging was in progress and scattered immature solitary and *transiens* adults were reported. Scattered mature adults were seen near Bampur (2711N/6028E). Ground teams treated 2,400 ha in May.

- **FORECAST**

As vegetation dries out, a few small groups are likely to form and move east towards the Indo-Pakistan summer breeding areas.

Pakistan

- **SITUATION**

No reports were received during May.

- **FORECAST**

Although small-scale breeding may have occurred in parts of Baluchistan that received recent rains, locust numbers will decline as vegetation dries out and adults move to the summer breeding areas along the Indo-Pakistan border. Consequently, locusts will increase in Cholistan and Tharparkar, perhaps supplemented by adults arriving from Iran, Oman and the Horn of Africa. Early breeding is expected to occur in areas of pre-monsoon rains.

India

- **SITUATION**

During May, isolated mature solitary adults were seen at one location northwest of Jaisalmer (2652N/7055E) on the 16th. No locusts were seen elsewhere in Rajasthan and Gujarat.

- **FORECAST**

Low numbers of adults may be present in parts of western Rajasthan where small-scale breeding is expected to occur in areas that received pre-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.



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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/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://iridl.ldeo.columbia.edu/maproom/Food_Security/Locusts/Regional/greenness.html)
- **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>)
- **FAOLOCUST Twitter.** The very latest updates are posted on Twitter (<http://www.twitter.com/faolocust>)
- **FAOLocust Facebook.** A social means of information exchange using Facebook (<http://www.facebook.com/faolocust>)
- **Slideshare.** Locust presentations and photos available for viewing and download (<http://www.slideshare.net/faolocust>)

- **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
- **Current threats updates.** Information

eLocust3. The final version of eLocust3 has been released and units are currently being dispatched to countries. Training should occur during June so that eLocust3 is operational starting 1 July. A set of 15 introductory training videos are available on YouTube: https://www.youtube.com/playlist?list=PLjxRk5CAwvG_OiFxfjZ5C2fLByF3jvhvHOx

2014 events. The following activities are scheduled or planned:

- **CLCPRO.** 9th Executive Committee meeting and 7th Session of the Commission, Nouakchott, Mauritania (22-26 June)
- **CRC.** 29th Session of the Commission, Abu Dhabi, UAE (23-27 November)
- **SWAC.** 29th Session (50th anniversary) of the Commission, Tehran, Iran (15-18 December)



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.



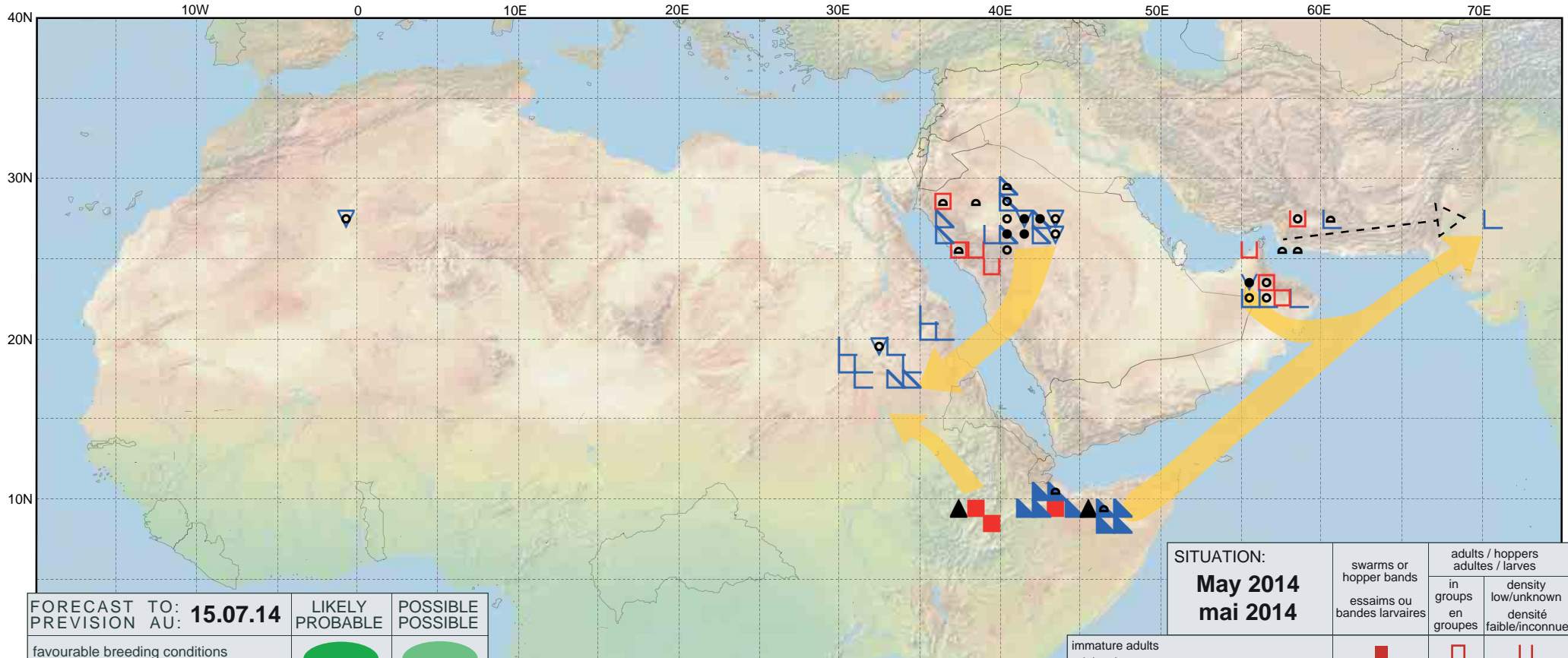
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Desert Locust Summary

Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU: 15.07.14	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 2014 mai 2014	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)			