

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

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 346

(2 August 2007)



General Situation during July 2007 Forecast until mid-September 2007

The Desert Locust situation during July remained extremely serious in Yemen for a third consecutive month. Egg laying, hatching and hopper band formation occurred within a large portion of the interior. By the end of the month, immature swarms started to form and were moving into crops. At the same time, breeding continued and new infestations were being found in areas that had not been surveyed previously. Ground control operations commenced in early July and treated nearly 19,000 ha. More swarms will form during August but most of these swarms are likely to remain in the interior. There is a slight risk that some swarms could move to the Red Sea coastal plains of Yemen and Saudi Arabia or to the Indo-Pakistan border via Oman. If more rainfall occurs in the interior of Yemen, another generation of egg laying could start by the end of August with hatching and band formation in September.

Western Region. The situation remained calm during July. Seasonal rains commenced in the summer breeding areas in the Sahel between Mauritania and Chad, and breeding conditions were improving because of the good rainfall. Isolated mature adults were reported in southern **Mauritania** and were probably present in **Mali**, **Niger** or **Chad** but surveys were not undertaken in these countries. Small-scale breeding will occur in the northern Sahel during the forecast period, causing locust numbers

to increase slightly. No locusts were reported in Northwest Africa except for an isolated adult in northwest **Libya**.

Central Region. Apart from Yemen, the situation remained calm in the Region during July. Control teams treated 1,500 ha of hopper and adult groups in southern **Oman** that represented the eastward extent of the infestations in Yemen. Seasonal rains started in the interior of **Sudan** where good rainfall occurred throughout the summer breeding area from Darfur to western Eritrea. Scattered solitary adults were present in the Baiyuda Desert north of Khartoum. So far, only limited surveys could be carried out in Sudan. During the next few months, small-scale breeding will cause locust numbers to increase slightly and it will be important to conduct surveys and monitor the situation closely. Good rains that fell along both sides of the Red Sea in July, unusual for this time of year, will cause breeding conditions to improve, especially on the Tihama coast in **Yemen**. In northeast **Eritrea**, solitary adults laid eggs on the coast near the Sudanese border. Consequently, locust numbers could increase on both sides of the Red Sea. No locusts were reported elsewhere in the Region.

Eastern Region. Some locusts appeared on the Gujarat coast in **India** in early July that may have come from infestations in western Pakistan or perhaps northern Somalia. Small-scale breeding commenced with the onset of the monsoon rains in Rajasthan, India and probably in adjacent areas of **Pakistan**. Consequently, locust numbers will gradually increase in both countries. There is a very low possibility that a few swarms from Yemen could reach the Indo-Pakistan border in August.

The FAO Desert Bulletin is issued monthly, supplemented by Updates during periods of increased Desert Locust activity, and is distributed by e-mail, FAO pouch and airmail by the Locusts and Other Migratory Pests Group, AGP Division, FAO, 00153 Rome, Italy. It is also available on the Internet.

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Weather & Ecological Conditions in July 2007

Ecological conditions improved in the summer breeding areas in the Sahel of West Africa and Sudan where seasonal rains commenced during July. Good rains fell for a second month along parts of the Red Sea coast. Breeding conditions remained unusually favourable in the interior of Yemen. Monsoon rains started along both sides of the Indo-Pakistan border and ecological conditions were improving.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) oscillated between 15N and 20N over the Sahel with occasional northward surges to 23N near the Algerian/Malian border. Consequently, seasonal rains began to fall in early July in parts of the summer breeding areas. In Mauritania, light rains fell near Aleg, Kiffa and in the southeast between Aioun, Nema and Oualata. Rains reach as far north as 18N near N'Beika during the second decade, and heavy showers fell at the end of the month in Hodh El Gharbi. Light to moderate showers fell at times over most of northern Mali (north of Tombouctou, Timetrine, Tilemsi Valley, Adrar des Iforas and Tamesna). Above-average rainfall occurred in northern Niger (Tamesna, Air Mountains) and between Tanout and Bilma. In Chad, light rains fell as far north as 18N near Faya and Fada as well as in the Tibesti Mountains. As a result, ecological conditions were becoming favourable for breeding in the above areas. Mainly dry conditions prevailed in northwest Africa, except for light rains in western Algeria between Adrar and the Moroccan border as well as further south in the Hoggar Mountains and along the Malian border near Bir Bou Mokhtar where vegetation was becoming green.

In the **Central Region**, seasonal rains commenced in early July in the summer breeding areas in Sudan. Light to moderate rains fell over a widespread area extending from West Darfur to the Red Sea Hills, including parts of northern Sudan (Wadi Milk, Baiyuda Desert and Dongola). The heaviest rains fell north of El Obeid and east of El Fasher during the first decade. Less rain fell during the last week of July. As a result, ecological conditions were becoming favourable for

breeding within a large portion of the interior of Sudan. In Eritrea, good rains fell in the highlands and, more importantly, in the western lowlands where breeding conditions were improving. Along the Red Sea, good rains fell in coastal and subcoastal areas between Abu Ramad, Egypt and Massawa, Eritrea and for the second consecutive month from Qunfidah, Saudi Arabia to Bab El Mandeb in Yemen. Rainfall was heaviest on the Yemeni Tihama coast. Very little rain fell in the Yemen interior between Marib and the Oman border except for light showers on a few days during the second and third weeks of July. Consequently, soil conditions had become dry by the end of the month, except near Minwakh and Thamud, but vegetation remained green except near Zamakh. In the Horn of Africa, light rains fell on the plateau between Dire Dawa, Ethiopia and Hargeisa in northwestern Somalia, and breeding conditions remained favourable in many areas. Light rains also fell in parts of the interior in northern Oman and vegetation was drying out in the south.

In the **Eastern Region**, moderate to heavy rains associated with the monsoon fell in the summer breeding areas along both sides of the Indo-Pakistan border during the first decade of July. In Pakistan, most of the rainfall was concentrated in Tharparkar and Khairpur deserts (south of Rohri) and between Bahawalpur and the Indian border. In India, rains fell throughout Rajasthan and Gujarat. Less rain fell along the Rajasthan Canal northeast of Jaisalmer. During the second half of July, very little rain fell in either country. Nevertheless, ecological conditions were becoming favourable for breeding along both sides of the border. Elsewhere, light rains fell in the mountains in southeast Iran between Chabahar and Bampur that may runoff onto the coastal plains. Similar rains fell in coastal and interior areas in western Pakistan between Pasni and Khuzdar. These rains may have allowed ecological conditions to be suitable for small scale breeding in both countries.



Area Treated

Oman	1,500 ha (July)
Yemen	18,591 ha (4-31 July)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During July, isolated mature solitarious adults were present at a few places in the south – east of Kaedi (1612N/1332W) in Gorgol and south of Kiffa (1638N/1124W) in Assaba – and in the southeast between Timbedra (1614N/0809W), Nema (1636N/0715W) and Oualata (1717N/0701W) in Hodh Ech Chargui.

• FORECAST

Small-scale breeding will occur in the south and southeast, causing locust numbers to increase slightly.

Mali

• SITUATION

No surveys were carried out, but an isolated solitarious adult was reported on 14 June along the Niger River southeast of Gao (1616N/0003W).

• FORECAST

Scattered adults are likely to be present north of Tombouctou and in parts of the northeast (Timetrine, Tilemsi Valley, Adrar des Iforas and Tamesna). Small-scale breeding will occur in areas of recent rainfall, causing locust numbers to increase slightly.

Niger

• SITUATION

No reports were received in July.

• FORECAST

Scattered adults are likely to be present in parts of Tamesna and perhaps in southeastern Air. Small-scale breeding will occur in areas of recent rainfall, causing locust numbers to increase slightly.

Chad

• SITUATION

No surveys were carried out and no locusts were reported during June. No reports were received in July.

• FORECAST

Scattered adults are likely to be present in parts of the centre and northeast where small-scale breeding is expected to occur in areas of recent rainfall, causing locust numbers to increase slightly.

Senegal

• SITUATION

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

• FORECAST

No significant developments are likely.

Benin, Burkina Faso, Cameroon, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea Bissau, Guinea, Liberia, Nigeria, Sierra Leone and Togo

• FORECAST

No significant developments are likely.

Algeria

• SITUATION

During July, no locusts were seen during surveys carried out in the central and southern Sahara near Adrar (2753N/0017W), Tamanrasset (2250N/0528E), Djanet (2434N/0930E) and along the Malian border near Bir Bou Mokhtar (2120N/0056E).

• FORECAST

Isolated adults could appear in the south near Tamanrasset and Bir Bou Mokhtar and breed on a small scale if rainfall occurs.

Morocco

• SITUATION

No locusts were reported during July.

• FORECAST

No significant developments are likely.

Libyan Arab Jamahiriya

• SITUATION

During July, an isolated solitarious mature adult was seen near Ghadames (3010N/0930E).

• FORECAST

No significant developments are likely.

Tunisia

• SITUATION

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

• FORECAST

No significant developments are likely.

CENTRAL REGION

Sudan

• SITUATION

On 19-25 July, limited surveys were carried out in the River Nile State where scattered mature solitarious adults were seen in the Baiyuda Desert between Atbara (1742N/3400E) and Merowe (1830N/3149E), in the Nile Valley south of Abu Hamed (1932N/3320E) and at one place east of Atbara. No surveys were carried out in the summer breeding areas in Darfur, Kordofan, White Nile or Kassala.



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• Forecast

Small populations will persist in the River Nile State where laying and hatching will occur in August. Low numbers of adults are almost certainly present in the summer breeding areas in West and North Darfur, North Kordofan, White Nile and Kassala States where small-scale breeding is likely to be in progress. Breeding will continue during the forecast period, causing locust numbers to increase slightly. Surveys should be conducted in these areas on a regular basis.

Eritrea

• SITUATION

During July, no locusts were seen during surveys in the summer breeding areas in the western lowlands. On the Red Sea coast, mature adults were present and laying eggs during the first and third weeks of July at several places in the north between Mehimet (1723N/3833E) and the Sudanese border. Mature adults were also seen on the coast near Mersa Gulbub (1633N/3908E) and in the foothills near Afabet (1612N/3841E). No locusts were seen further south along the coast to Tio (1441N/4057E).

• FORECAST

Small-scale breeding is likely to occur in the western lowlands and on the northern Red Sea coast between Mehimet and Karora, causing locust numbers to increase slightly.

Ethiopia

• SITUATION

No locusts were seen during surveys carried out near Dire Dawa during the first half of July.

• FORECAST

Small residual adult populations may be present between Dire Dawa and northern Somalia. If conditions remain favourable, small-scale breeding could occur in areas of recent rainfall.

Djibouti

• SITUATION

No locusts were reported during July.

• FORECAST

No significant developments are likely.

Somalia

• SITUATION

No surveys were carried out and no locusts were reported after 1 July.

• FORECAST

Small residual adult populations may be present on the plateau between Boroma and Burao and perhaps on the coast near Berbera. If conditions remain favourable, small-scale breeding could occur in areas of recent rainfall.

Egypt

• SITUATION

No locusts were seen during surveys carried out in July near Lake Nasser between Abu Simbel (2219N/3138E) and Tushka (2247N/3126E).

• FORECAST

No significant developments are likely.

Saudi Arabia

• SITUATION

During the second week of July, no locusts were seen on the Red Sea coast near Qunfidah (1909N/4107E) or in previously infested areas in the interior near Buraydah (2621N/4358E) and Riyadh.

• FORECAST

Scattered adults may appear on the southern coast of the Red Sea between Qunfidah and Jizan and breed on a small scale in areas of recent rainfall. There is a very low possibility that a few swarms could arrive in these areas from Yemen.

Yemen

• SITUATION

During July, egg laying and hatching continued within a large portion of the interior. The most significant infestations were in remote wadis in the plateau north of W. Hadhramaut between Al Abr (1608N/4714E) and Thamud (1717N/4955E) where hoppers formed groups and bands at densities up to 400 hoppers/m². Smaller infestations continued east to the Oman border at Shehan (1746N/5229E) and south to Hat (1719N/5205E). Hatching and band formation also occurred in wadis in the plateau south of W. Hadhramaut, in crops of W. Hadhramaut itself, and in the traditional breeding areas in Shabwah near Ataq (1435N/4649E) and Bayhan (1452N/4545E). Groups of solitarious and *transiens* immature and mature adults were scattered throughout most of these areas. Although hopper development was not well synchronized, most hoppers had reached fourth or fifth instar by the end of the month and were fledging and forming groups of immature adults. From the 26th onwards, a few small immature swarms of up to 3 km² in size were reported near W. Hadhramaut.

Ground control operations commenced on 4 July and 18,591 ha were treated during July.

Solitarious and *transiens* hoppers and adults were present on the desert plains about 100 km west of Al Abr, and mature solitarious adults were seen at a few places in the Al-Jawf region near Al Hazm (1609N/4447E).

On the southern coast, late instar hoppers and a few groups and bands, mixed with solitarious and *transiens* mature adults, were present during the first decade of July near Seyhut (1512N/5115E) and in the interior near Al Ghaydah (1612N/5210E). Some mature adults were also seen on the coast near Mukalla (1431N/4908E).

• **FORECAST**

Moderate numbers of small swarms will form during August as the remaining hoppers fledge in currently infested areas. As vegetation dries out, swarms are likely to move between Marib and the Oman border where they will mature in areas that remain green. If more rainfall occurs, egg laying could start by the end of August with hatching and band formation in September. Most of the swarms are expected to stay in the interior but there is a slight risk that some swarms could move to the Sana'a highlands and to the Red Sea coastal plains or to southern Oman.

Oman

• **SITUATION**

During July, groups of solitarious and *transiens* hoppers of all instars mixed with solitarious, *transiens* and gregarious immature and mature adults were present along the Yemeni border near Maziuna (1750N/5239E). Some adults were copulating. Ground control teams treated 1,500 ha. No locusts were seen during surveys in the northern regions of Sharqiya and Batinah.

• **FORECAST**

Unless further rainfall occurs, breeding will end and locust numbers will decline in the south along the Yemeni border. Nevertheless, there is a slight risk that some swarms could appear in this region from adjacent areas in Yemen.

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

• **FORECAST**

No significant developments are likely.

EASTERN REGION

Iran

• **SITUATION**

No reports were received during July.

• **FORECAST**

No significant developments are likely.

Pakistan

• **SITUATION**

During the second half of June, scattered maturing adults were west of Karachi near Uthal and in the summer breeding areas in the Khairpur Desert south of Rohri and in Cholistan Desert between Rahimyar Khan (2822N/7020E) and the Indian border.

During the first half of July, scattered mature adults persisted in the above areas. No surveys were conducted in the Tharparkar Desert.

• **FORECAST**

Small-scale breeding will cause locust numbers to increase in Tharparkar, Khairpur and Cholistan during the forecast period. There is a very low possibility that a few swarms could appear from Yemen via Oman in August.

India

• **SITUATION**

On 3 July, low numbers of immature and mature adults were seen on the coast of Gujarat in the Rann of Kutch near the Pakistani border. During the remainder of the month, scattered solitarious adults were present in several districts (Jaisalmer, Bikaner, Barmer and Jodhpur) of Rajasthan where they matured and laid eggs.

• **FORECAST**

Small-scale hatching will occur during August and cause locust numbers to increase slightly in Rajasthan. There is a very low possibility that a few swarms could appear from Yemen via Oman in August.

Afghanistan

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.



Announcements

Locust reporting. During recession periods, countries should report at least once/month and send RAMSES data with a brief interpretation. During caution (yellow) periods, locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent twice/week and affected



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

eLocust2. FAO has developed a new version of eLocust in collaboration with affected countries and the French Space Agency (CNES/Novacom) that allows field officers to enter survey and control data directly in the field and transmit it in real time via satellite to their national locust centre. Data can also be downloaded to a PC and visualized on GoogleEarth. The software is in both English and French. FAO DLIS has distributed units to nearly all of the frontline countries. Photos and more information are available at: www.fao.org/ag/locusts/en/activ/DLIS/index.html

Desert Locust warning levels. A colour-coded scheme 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.

EMPRES/CRC website. Detailed information on EMPRES/CR and the FAO Central Region Commission as well as member country profiles can be found on the new EMPRES/CRC website at: www.crc-empres.org.

MODIS imagery. Columbia University's International Research Institute for Climate and Society (IRI) has started to provide 16-day 250-metre resolution MODIS imagery for monitoring ecological conditions in the Desert Locust recession area, in addition to the daily rainfall estimates already available. These products can be downloaded in different formats suitable for GIS at: <http://iridl.ldeo.columbia.edu/maproom/>.

Food_Security/Locusts/index.html. Comments and questions can be addressed to Pietro Ceccato (pceccato@iri.columbia.edu).

New information on Locust Watch. DLIS launched a new initiative in October called *Desert Locust e-info news* as a means of keeping everyone informed on a weekly basis of new information on the Locust Group's web page, Locust Watch (www.fao.org/ag/locusts). The latest additions are:

- **Locust situation.** Several updates during July (home page and in Archives section)
- **Press.** Two press releases on the Yemen situation, 4 and 26 July (home page)
- **Pesticide Referee Group.** 1st to 9th session reports, 1989-2004 (Publications section)
- **SW Asia Commission.** 1st to 25th session reports, 1964-2006 (Publications section)
- **Outbreaks and upsurges.** New format (Archives section)

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

2007 events. The following meetings are scheduled:

- **EMPRES/WR.** 6th Liaison Officers Meeting (26-30 November) and 3rd Steering Committee (3-4 December), Agadir (Morocco)



Glossary of terms

The following special terms are used in the Desert Locust Bulletin when reporting locusts:

NON-GREGARIOUS ADULTS AND HOPPERS

ISOLATED (FEW)

- very few present and no mutual reaction occurring;
- 0 - 1 adult/400 m foot transect (or less than 25/ha).

SCATTERED (SOME, LOW NUMBERS)

- enough present for mutual reaction to be possible but no ground or basking groups seen;
- 1 - 20 adults/400 m foot transect (or 25 - 500/ha).

GROUP

- forming ground or basking groups;
- 20+ adults/400 m foot transect (or 500+/ha).

ADULT SWARM AND HOPPER BAND SIZES

VERY SMALL

- swarm: less than 1 km² • band: 1 - 25 m²

SMALL

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

MEDIUM

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

LARGE

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

VERY LARGE

- swarm: 500+ km² • band: 50+ ha

RAINFALL

LIGHT

- 1 - 20 mm of rainfall.

MODERATE

- 21 - 50 mm of rainfall.

HEAVY

- more than 50 mm of rainfall.

OTHER REPORTING TERMS

BREEDING

- the process of reproduction from copulation to fledging.

SUMMER RAINS AND BREEDING

- July - September/October

WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July

DECLINE

- a period characterised by breeding failure and/or successful control leading to the dissociation of swarming populations and the onset of recessions; can be regional or major.

OUTBREAK

- a marked increase in locust numbers due to concentration, multiplication and gregarisation which, unless checked, can lead to the formation of hopper bands and swarms.

UPSURGE

- a period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to- gregarious breeding in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions.

PLAGUE

- a period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously.

RECESSION

- period without widespread and heavy infestations by swarms.

REMISSION

- period of deep recession marked by the complete absence of gregarious populations.

WARNING LEVELS

GREEN

- Calm. No threat to crops. Maintain regular surveys and monitoring.

YELLOW

- Caution. Potential threat to crops. Increased vigilance is required; control operations may be needed.

RED

- Danger. Significant threat to crops. Intensive survey and control operations must be undertaken.

REGIONS

WESTERN

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

CENTRAL

- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

EASTERN

- locust-affected countries in South-West Asia: Afghanistan, India, Iran and Pakistan.



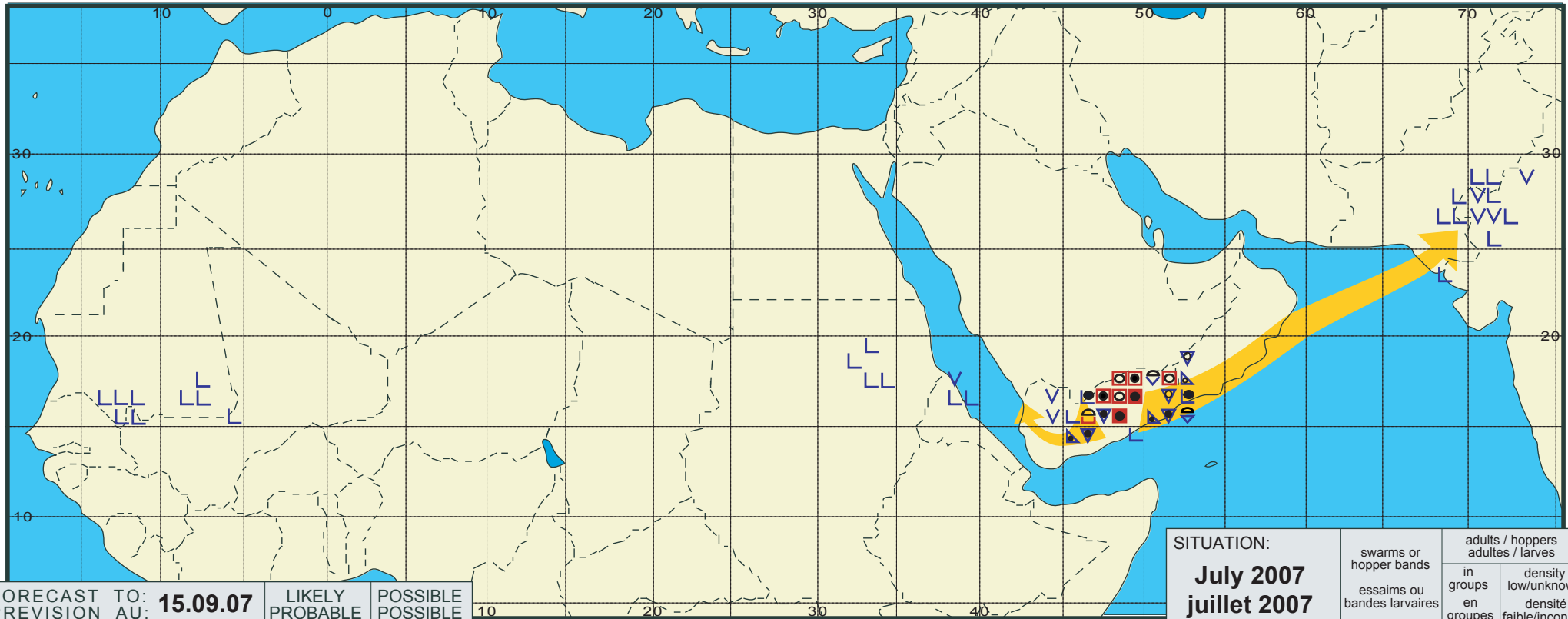
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Desert Locust Summary

Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU: 15.09.07	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favorables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: July 2007 juillet 2007	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)			