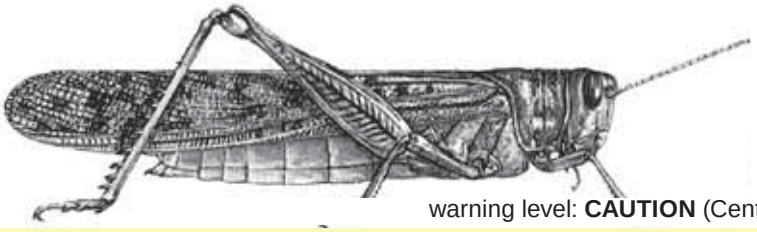


warning level: **CAUTION** (Central & Eastern Region)

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations

No. 368

(2 June 2009)

General Situation during May 2009
Forecast until mid-July 2009

The locust situation deteriorated in Yemen and northern Somalia where hopper bands and swarms formed by the end of May. Although control operations have been mounted in both countries as well as in adjacent areas of Ethiopia, there is a high risk that more small swarms will form by mid June in northern Somalia and Yemen. While most of the swarms in northern Somalia should remain on the plateau where good rains have fallen, there is a chance that some swarms could move northeast towards southern Arabia and perhaps reach the summer breeding areas along the Indo-Pakistan border. Other swarms could move into Ethiopia and continue to the summer breeding areas in Sudan and western Eritrea. These migration routes will vary, depending on the position of the ITCZ when the emigration occurs. In Yemen, new swarms will form in early June. Unless more rains fall, most of these swarms are likely to move into cropping areas and to the central highlands, while some swarms could move towards Oman and cross the Arabian Sea to Pakistan and India. All countries need to be alert and take the necessary precautions.

Western Region. The locust situation remained calm during May. Small-scale breeding occurred in **Morocco** and in the central Sahara in **Algeria**. Ground control was undertaken in Algeria. No surveys were carried out in the Sahel in West Africa. Low numbers of locusts are expected to appear in the summer breeding areas in the Sahel and breed with the onset of the seasonal rains. The situation in the Central Region is not expected to affect the Western Region.

Central Region. Breeding occurred in northern **Somalia** and the interior of **Yemen** that caused numerous hopper bands to form during May. By the end of the month, new swarms formed in northern Somalia along the escarpment and plateau. A few swarms moved into adjacent areas of **Ethiopia**. In Yemen, ground control started in late May against hopper bands present in some of the same interior areas as during the 2007 locust upsurge. However, ecological conditions are less favourable this year, so new swarms that start forming in early June are unlikely to remain in the interior desert. Instead, most of them are expected to move into cropping areas in Wadi Hadhramaut and the central highlands. There is a moderate risk of swarms from Yemen and northern Somalia moving northeast along the eastern coast of **Oman**. Elsewhere, ground teams in **Saudi Arabia** treated very small hopper bands in one area along the Red Sea coast and scattered adults were present along the Nile River in northern **Sudan**, in southern **Egypt** and in northern Oman.

Eastern Region. Locust populations remained low in the spring breeding areas during May. Ground teams treated hopper groups in southeast **Iran** and scattered adults were present in western **Pakistan**. There is a low risk that a few small swarms from the Arabian Peninsula and the Horn of Africa could reach the Indo-Pakistan border from about mid June onwards.

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.
Telephone: +39 06 570 52420 (7 days/week, 24 hr)
Facsimile: +39 06 570 55271
E-mail: eclo@fao.org
Internet: www.fao.org
DLIS: www.fao.org/ag/locusts

No. 368

DESERT LOCUST BULLETIN

Weather & Ecological Conditions in May 2009

Good rains fell in mid May over the Horn of Africa causing breeding conditions to improve. Elsewhere in the recession area, no significant rain fell and ecological conditions were not favourable for breeding.

In the **Western Region**, very little rain fell during May and ecological conditions were predominantly dry and unfavourable for Desert Locust. Conditions were hot and dusty in the Sahel prior to the arrival of the seasonal rains, which is not expected for another month. The Inter-Tropical Convergence Zone (ITCZ) was located further south than usual in May. North of the ITCZ, strong northeasterly winds prevailed at times and maximum temperatures ranged from 35C to 46C. In Mauritania, traces of rain fell at Nouakchott and Bir Moghrein on the 21st. Ecological conditions were not favourable for locust survival or breeding except for a few spots in the north but even these were nearly dry. In Niger, light to moderate local showers fell on the 7th in the In Gall area of southern Tamesna between Agadez and Tassara, which may be sufficient for local breeding. Light rains may have fallen in the northeast in parts of the Tenere Desert and Djado Plateau. In Algeria, green vegetation persisted in the central Sahara. Light rains fell in the extreme south but vegetation remained dry there as well as in the southeast near Illizi.

In the **Central Region**, good rains fell over most of northern Somalia and eastern Ethiopia during the second decade of May. In northern Somalia, vegetation was drying out on the northwest coast but was becoming green on the escarpment and plateau. In adjacent areas of northeast Ethiopia, vegetation was green or becoming green north of Jijiga. By mid-month, the southwest monsoon winds had become established over the Horn of Africa. In the interior of Yemen, ecological conditions were favourable for breeding at the mouth of Wadi Hadhramaut, in the numerous wadis to the north between Minwakh and Thamud, and at the base of the foothills along the edge of Ramlat Sabatayn. Vegetation was drier on the Ramlat Sabatayn plains in the absence of any rain. In Saudi Arabia, good rains fell in the central and northern interior during the first half of May. Vegetation was green but starting to dry out in some areas. In Oman, light rains fell early in the month along parts of the central and northern coast where annual vegetation was green in places. In southern Egypt, heavy rains fell on 7-9 May in the Western Desert and light to moderate rains were reported near Lake Nasser and on the Red Sea coast near Marsa Alam.

In the **Eastern Region**, light rains ahead of the seasonal monsoon may have fallen in northern parts of the summer breeding areas between Bikaner, India and Bahawalpur, Pakistan during the first decade of May. Nevertheless, vegetation remained dry on both sides of the border. In the spring breeding areas, vegetation continued to dry out in western Pakistan and southeast Iran.

Area Treated

More than 7,500 ha were treated during May as follows:

Algeria	870 ha (27-30 April)
	1,770 ha (May)
Ethiopia	452 ha (May)
Iran	3,000 ha (May)
Saudi Arabia	30 ha (May)
Somalia	1,100 ha (May)
Yemen	1,275 ha (24-29 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**

Isolated adults may appear in a few places in the southeast and start to breed on a small scale once the seasonal rains commence.

Mali

• **Situation**

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

• **Forecast**

Isolated adults may be present in parts of the Adrar des Iforas where they are expected to persist. Small-scale breeding will start once the seasonal rains commence.

Niger

• SITUATION

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

• Forecast

Isolated adults may be present in southern Tamesna where small-scale breeding may occur in areas of recent rains near In Gall and eventually expand to other areas once the seasonal rains commence.

Chad

• SITUATION

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

• FORECAST

Scattered adults may appear by the end of the forecast period in the northeast and start to breed on a small scale once seasonal rains commence.

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

From 27 April to the end of May, numerous small infestations of solitarious hoppers of all instars and a few *transiens* hoppers were present and forming small groups, at densities up to 100 hoppers/m^2, east of Adrar near Matriouene (2749N/0116E) in the central Sahara. Ground teams treated 2,640 ha. Scattered solitarious hoppers of all instars mixed with immature solitarious adults were present southeast of In Salah in W. El Botha (2628N/0330E). Scattered immature solitarious adults were also present west of Beni Abbes (3011N/0214W) and mature adults were seen west of Djanet (2434N/0930E).

• FORECAST

Locust numbers are expected to decrease in the central Sahara but small infestations could persist near irrigated areas in Adrar. Scattered adults may appear further south in areas of recent rainfall to the west and southeast of Tamanrasset where small-scale breeding could eventually occur in places that receive more rain.

Morocco

• SITUATION

During May, isolated mature solitarious adults persisted along the Algerian border south of Tata (2944N/0758W), and between Erfoud (3128N/0410W) and Bouarfa (3232N/0159W). A few adults laid eggs in the Ziz-Ghris valley south of Erfoud. Small-scale breeding occurred in the Draa Valley southwest of Tata where third to fifth instar solitarious hoppers were concentrated in two places. Scattered hoppers of all instars were seen nearby.

• FORECAST

Limited hatching is likely to occur along the Algerian border in the Draa and Ziz-Ghris valleys early in the forecast period but locust numbers will remain low and gradually decline as vegetation dries out.

Libyan Arab Jamahiriya

• SITUATION

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

• FORECAST

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 May, scattered mature solitarious adults were present in irrigated fields along the Nile River near Atbara (1742N/3400E) and Dongola (1910N/3027E). A few small groups with densities up to 1,500 adults/ha were seen at one place near Atbara.

• Forecast

Scattered adults are expected to persist near Atbara and Dongola. Low numbers of adults are likely to appear in the summer breeding areas in the interior (Khartoum, Northern, River Nile, Kassala, Red Sea, White Nile and Northern Kordofan States) and lay eggs once seasonal rains commence. There is a low risk of a few swarms appearing in the summer breeding areas from the Horn of Africa.

Eritrea

• **Situation**

During May, scattered solitarious hoppers and adults were seen during surveys on the Red Sea coast near Sheib (1551N/3903E).

• **Forecast**

Locust numbers will decline on the Red Sea coast as vegetation dries out. There is a low risk of a few swarms appearing in the western lowlands from the Horn of Africa.

Ethiopia

• **Situation**

During the first week of May, two immature swarms were treated by air (220 ha) near Dire Dawa (0935N/4150E) on the 1st and 7th. At mid-month, there were unconfirmed reports of mature gregarious adults between Dire Dawa and Jijiga (0922N/4250E). On the 31st, ground and aerial operations treated 232 ha of immature swarms east of Dire Dawa.

• **Forecast**

There is a high risk that small groups of adults and immature swarms could appear in early June in the Harar Highlands between Dire Dawa and Jijiga, and eventually breed in areas of recent rainfall. However, some of the swarms may continue moving northwest towards Amhara and Tigray or northeast to Somalia.

Djibouti

• **Situation**

No reports were received during May.

• **Forecast**

There is a low risk to moderate risk that a few swarms may arrive from adjacent areas of northern Somalia and Ethiopia; however, they are not likely to remain in the country.

Somalia

• **Situation**

During the last week of April and first half of May, hatching and band formation occurred in a few places on the northwest coast. By mid-May, medium to high density second to fifth instar hopper groups, bands and fledglings were reported south of Lughaye (1041N/4356E) at the foot of the escarpment as well as in wadis on the escarpment near Waraqadhigta (1010N/4337E). Scattered solitarious hoppers were seen nearby on the coast, at the base of the escarpment south of Berbera (1028N/4502E) and on the plateau near Burao (0931N/4533E). During the last week of May, aerial operations treated 1,100 ha of late instar hopper bands in the above areas, including 600 ha using Green Muscle™. Several immature swarms were reported on the plateau and escarpment east of Hargeisa on the 28-31st.

• **Forecast**

Small immature swarms are expected to continue to form during the first half of June. Although the swarms should remain on the plateau in areas of recent rain, there is a moderate risk that some swarms could move east along the escarpment and plateau towards the northeast and the Gulf of Aden. Any swarms that move up the plateau near Boroma are likely to continue into Ethiopia.

Egypt

• **Situation**

During May, isolated immature solitarious adults were present near Lake Nasser at Tushka (2247N/3126E). No locusts were seen during surveys carried out in the Western Desert near Sh. Oweinat (2219N/2845E) and Abu Simbel (2219N/3138E).

• **Forecast**

No significant developments are likely.

Saudi Arabia

• **Situation**

During the first week of May, ground teams treated 30 ha of very small third to fifth instar hopper bands varying from 4 to 30 m^2 in size, fledglings and immature solitarious adults on the Red Sea coast between Qunfidah (1909N/4107E) and Lith (2008N/4016E). Isolated mature solitarious adults were seen in the interior on the eastern side of the Al Hijaz Mountains south of Zalim (2248N/4210E). No locusts were reported elsewhere in the spring breeding areas of the interior.

• **Forecast**

Any hoppers that remain between Lith and Qunfidah will fledge by early June and, thereafter, locust numbers are expected to decline as vegetation dries out.

Yemen

• **Situation**

In early May, hatching occurred in the interior along the edge of Ramlat Sabatayn between Al Hazm (1609N/4447E), Ataq (1435N/4649E), Al Abr (1608N/4714E) and Wadi Hadhramaut, and north of W. Hadhramaut between Minwakh (1650N/4812E) and Thamud (1717N/4955E). Hoppers formed small groups and numerous small bands with densities up to 200 hoppers/m^2 in all of these areas except between Al Hazm and Bayhan (1452N/4545E) where only

solitarious hoppers were present. By the last week of the month, hoppers started fledging and immature gregarious adults were seen in at least one place. Scattered mature solitarious adults were also present including some gregarious adults near Thamud. Some adults were copulating on the 17th near Nuqub (1458N/4557E). Ground control operations commenced during the last week and treated 1,275 ha of hopper bands in Shabwah, Minwakh and southwest of Thamud.

• **Forecast**

Fledging will continue in early June and small swarms are expected to form. Some hatching is likely to occur in early June but further breeding will be limited unless more rains fall in the interior. If rains do not fall, the swarms are likely to move into crops in W. Hadhramaut and the central highlands, and perhaps to the southern coast then northeast towards Oman. There is a moderate risk of a few small swarms from northern Somalia reaching the southern coast between Aden and Sayhut in early June and continuing to the northeast.

Oman

• **Situation**

During May, isolated immature and mature solitarious adults were present on the Batinah coast near Jamma (2333N/5733E).

• **Forecast**

Locust numbers will decline on the northern coast as vegetation dries out. There is a moderate risk that a few swarms may appear in the south from Yemen or northern Somalia and move northwards along the central coast during June.

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 the first half of May, scattered immature solitarious adults were present in the Jaz Murian Basin southeast of Kahnuj (2757N/5742E). Ground teams treated 3,000 ha containing small groups of second instar gregarious hoppers in Jaz Murian east of Kahnuj.

• **Forecast**

Locust numbers will decline in the spring breeding areas in the southeast as vegetation dries out.

Pakistan

• **Situation**

During the first half of May, isolated immature and mature solitarious adults were present in the interior of Baluchistan near Panjgur (2658N/6406E) and Kharan (2832N/6526E).

• Forecast

Locust numbers will decline in the spring breeding areas as vegetation dries out. There is a low risk that a few small swarms from the Arabian Peninsula and the Horn of Africa could reach Tharparkar and Cholistan from mid June onwards.

India

• **Situation**

No locusts were seen during surveys in Rajasthan and Gujarat during May.

• **Forecast**

There is a low risk that a few small swarms from the Arabian Peninsula and Horn of Africa could reach Gujarat and Rajasthan from mid June onwards.

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 (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.

Google group. FAO DLIS has established a Google group for national locust information officers to exchange opinions and share experiences regarding data management and analysis, GIS, eLocust2 and satellite imagery. Interested information officers should contact DLIS (eclo@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).

2009 events. The following activities are scheduled or planned:

- **CRC Aerial training.** 2nd regional aerial training course, Lake Zeway, Ethiopia (7-12 June)
- **CLCPRO.** 5th Executive Committee (22-23 June) and 5th CLCPRO Session (24-27 June), Agadir (Morocco)
- **CRC Training.** 5th Desert Locust sub-regional training course, Damascus, Syria (3-17 July)
- **EMPRES/WR Locust Information.** Regional workshop for Desert Locust Information Officers, Algers (13-15 July)
- **CRC Planning.** Contingency planning workshop, Cairo (26-31 July)
- **EMPRES/WR Research.** Regional workshop on Desert Locust research, Dakar (5-9 October)
- **EMPRES/WR Liaison Officers.** 8th EMPRES Liaison Officers meeting (mid-December, tentative)
- **EMPRES/WR Steering Committee.** 4th EMPRES Steering Committee meeting (mid-December, tentative)

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 km^2 • band: 1 - 25 m^2

SMALL
- swarm: 1 - 10 km^2 • band: 25 - 2,500 m^2

MEDIUM
- swarm: 10 - 100 km^2 • band: 2,500 m^2 - 10 ha

LARGE
- swarm: 100 - 500 km^2 • band: 10 - 50 ha

VERY LARGE
- swarm: 500+ km^2 • 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

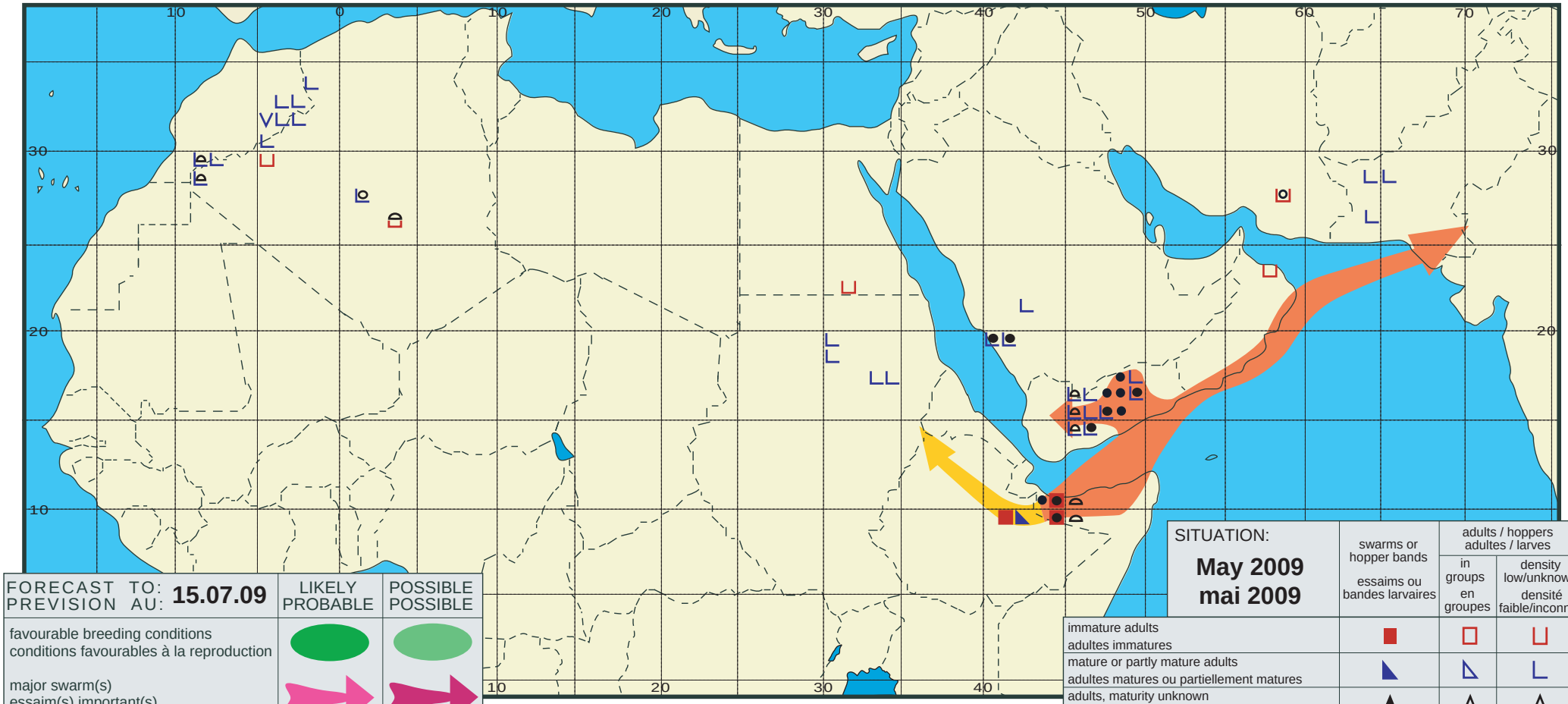
- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

EASTERN

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

Desert Locust Summary
Criquet pèlerin - Situation résumée

368



FORECAST TO: / PREVISION AU: **15.07.09**	LIKELY / PROBABLE	POSSIBLE / POSSIBLE
favourable breeding conditions conditions favourables 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 2009 / mai 2009**	swarms or hopper bands / essaims ou bandes larvaires	adults / hoppers adultes / larves: in groups / en groupes	adults / hoppers adultes / larves: 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)			