

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

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 366

(2 April 2009)



General Situation during March 2009 Forecast until mid-May 2009

Small outbreaks of Desert Locust developed on the southern coast of Yemen and in northwest Somalia during March. Ground control operations were undertaken in Yemen and are expected to start shortly in Somalia. By the end of the month, small swarms were forming in Yemen. If control operations are less than successful and good rains fall, locusts could increase further and spread to adjacent countries in the region. Elsewhere, scattered solitary adults were present in parts of northwest Mauritania, Morocco and Algeria, locusts declined in the winter breeding areas along both sides of the Red Sea, and so far only scattered adults have been seen in the spring breeding areas in western Pakistan.

Western Region. Locust numbers remained low during March in northwest and northern Mauritania except for one place where hopper and adult densities increased but did not require control. Solitary adults were present in Morocco on the southern side of the Atlas Mountains along the Algerian border where 1 ha was treated. Isolated adults were seen in parts of the Western Sahara and near irrigated areas in central Algeria. Similar populations may also be present in parts of northern Mali and Niger but surveys could not confirm this because of continued insecurity. Small-scale breeding could occur in spring breeding areas of northwest Africa but locust numbers are expected to remain low and no significant developments are likely during the forecast period.

Central Region. An outbreak developed in March on the southern coast of Yemen where more than 200 small hopper bands formed within a limited area of about 1,000 km². Ground teams treated nearly 5,000 ha and two small swarms were seen flying on the coast at the end of the month. Any hopper bands and adults that are not controlled will form small adult groups and a few small swarms that will probably move towards the summer breeding areas in the interior of southern Yemen where good rains began to fall in late March. A small outbreak also developed on the northwest coast of Somalia within an area of about 2,000 km² where nearly two-dozen small hopper bands and two small swarms were reported. Although the infestations are expected to remain in situ during most of the forecast period because of unusually favourable conditions, there is a moderate risk that a few adult groups or small swarms could move up the escarpment to the Ethiopian plateau or east along northern Somalia. Control operations should commence in early April. Locusts declined in winter breeding areas along both sides of the Red Sea as vegetation dried out in March. Consequently, only small-scale breeding occurred in a few places on the coast in Saudi Arabia, scattered adults remained on the coast in Sudan and a few adults were copulating on the northern coast in Eritrea.

Eastern Region. Scattered adults appeared along the coast in the spring breeding areas of western Pakistan during the second half of February and in the interior during the first half of March. Small-scale breeding is expected to occur during the forecast period in coastal and interior areas of southeast Iran and, if more rains fall, in Baluchistan, Pakistan.

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 March 2009

Mainly dry conditions prevailed in the recession area during March. Breeding conditions were favourable in northwest Somalia and are expected to improve in the interior of Yemen and in southeast Iran where good rains fell at the end of March.

In the **Western Region**, light showers fell at times during March but ecological conditions remained generally dry. In Mauritania, light rains fell during the first week between Nouakchott and Zouerate and in adjacent areas of Western Sahara. Annual vegetation was drying out east of Nouakchott but remained green further north in Tiris Zemmour. Light rains may have fallen at mid-month in parts of northern Mali west of Timetrine and in the Tamesna in Niger; however, vegetation was dry in most places except for some wadis in the Adrar des Iforas, Mali and in the Air Mountains, Niger. In northwest Africa, good rains fell at times along the southern side of the Atlas Mountains in Morocco. Annual vegetation remained green in the Draa Valley and in central and northern areas of Western Sahara but was dry further south. In Algeria, vegetation was green near Tindouf and in irrigated agricultural schemes in the central Sahara near Beni Abbes and Adrar, but was drying out in the south and east near Tamanrasset and Djanet.

In the **Central Region**, vegetation remained unusually green on the northwest coast of Somalia near Siliil during March. On the other hand, conditions were dry in adjacent coastal areas of Djibouti. Light rains occasionally fell during the second half of March on the nearby plateau between Dire Dawa and Jijiga, Ethiopia and Hargeisa, Somalia. In southern Yemen, vegetation dried out along the coast but good rains and flooding occurred at the end of the month in the summer breeding areas in the interior of Shabwah near Bayhan. In Oman, moderate to heavy showers fell along the northern coast on 25-29 March. In the winter breeding areas along both sides of the Red Sea, ecological conditions were dry because of a lack of rainfall in March. Consequently, breeding was limited to just a few coastal areas in Saudi Arabia between Lith and Jizan and the central Tihama coast

in Yemen where light rains fell at times. In Eritrea, annual vegetation dried out on the coast north of Massawa but remained green and dense on the Karora plains near the Sudanese border.

In the **Eastern Region**, a mild warm winter prevailed in western Pakistan and southeast Iran. During the third decade of March, light rain fell in the interior of the spring breeding areas in Baluchistan, Pakistan as well as along both sides of the Indo-Pakistan border in the summer breeding areas of Cholistan, Pakistan and Rajasthan, India. During the last week of March, light to heavy rains fell in coastal and interior areas of southeast Iran.



Area Treated

Morocco	1 ha (24 March)
Yemen	4,670 ha (18-31 March)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During March, scattered immature and mature solitary adults were present at densities of 100-300 adults/ha mixed with solitary hoppers of all instars (up to 265 hoppers/site) in several places to the south and southwest of Oujef (2003N/1301W). Higher numbers of locusts were seen at one location (1933N/1320W) on 10 ha where densities reached 3,200 adults/ha and 1,224 hoppers/ha at mid-month. Further north, isolated immature and mature solitary adults were seen near Zouerate (2244N/1221W) and limited hatching occurred at mid-month.

• FORECAST

Low numbers of locusts are likely to persist in currently infested areas in the northwest and north. Limited breeding may occur on a small-scale giving rise to low numbers of hoppers that should fledge at the end of April.

Mali

• SITUATION

No surveys were carried out and no locusts were reported during February and March.

- **FORECAST**

Isolated adults may be present in parts of the Adrar des Iforas where they could breed on a small-scale if rains fall during the forecast period.

Niger

- **SITUATION**

On 25 March, there was an unconfirmed report of scattered adults on about 10 ha in the southern Tamesna near In Gall (1651N/0701E).

- **FORECAST**

Isolated adults may be present in parts of the Tamesna and Air Mountains where they could breed on a small-scale if rains fall during the forecast period.

Chad

- **SITUATION**

No reports were received during March.

- **FORECAST**

No significant developments are likely.

Senegal

- **SITUATION**

No locusts were seen during surveys carried out in the north near Richard Toll (1626N/1541W) and Keur Momar Sarr (1555N/1558W) in March.

- **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 March, isolated immature and mature solitary adults were present near several irrigated cropping areas in the Adrar (2753N/0017W) region and to a lesser extent southeast of Beni Abbes (3011N/0214W) and west of Djanet (2434N/0930E). No locusts were seen during surveys near Tindouf (2741N/0811W) and Tamanrasset (2250N/0528E).

- **FORECAST**

Low numbers of solitary adults are likely to persist in parts of the central Sahara. Small-scale breeding could occur in favourable areas between Tindouf and Beni Abbes as well as near irrigated areas in parts of the central Sahara.

Morocco

- **SITUATION**

During March, isolated mature solitary adults were seen in the northeast near Bouarfa (3232N/0159W). Two groups of solitary adults at

densities of 50-200 adults/ha were present along the Algerian border in the Draa Valley southeast of Fom El Hassan (2901N/0853W) and 1 ha was treated on the 24th. In the Western Sahara, isolated mature solitary adults were reported near Bir Lahlou (2619N/0933W), Laayoune (2709N/1311W) and southwest of Guelta Zemmur (2508N/1222W).

- **FORECAST**

Small-scale breeding could occur in parts of the Draa Valley and in the northeast near Bouarfa causing locust numbers to increase slightly. Low numbers of locusts are likely to persist in parts of central and northeast Western Sahara and breed on a small scale if rainfall occurs.

Libyan Arab Jamahiriya

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

Tunisia

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

CENTRAL REGION

Sudan

- **SITUATION**

No locusts were seen on the northern coast or in adjacent interior areas during a joint survey with Egypt on 1-2 March. During the remainder of the month, locust numbers declined on the southern coast between Aqiq (1813N3811E) and the Eritrean border and only scattered mature solitary adults at densities of 50-200 adults/ha were seen at only two places.

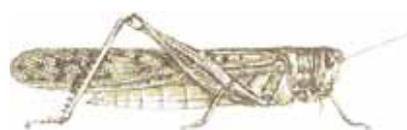
- **FORECAST**

Locust numbers will continue to decline along the southern coast of the Red Sea coast and no significant developments are likely.

Eritrea

- **SITUATION**

During March, isolated solitary adults including a few copulating adults were seen at two places on



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the northern Red Sea coast between Mersa Gulbub (1633N/3908E) and Mehimet (1723N/3833E) during surveys carried out on 23-26 March. No locusts were seen elsewhere on the plains.

- **FORECAST**

Locust numbers will decline along the central and northern coast of the Red Sea and no significant developments are likely.

Ethiopia

- **SITUATION**

No locusts were seen during surveys carried out in March in the southern parts of Oromiya and Somali regions in the extreme southeast.

- **FORECAST**

There is a moderate risk that groups of adults and perhaps a few small swarms could appear from northwest Somalia on the escarpment near Dire Dawa, the railway, and Jijiga. Regular surveys should be carried out to monitor the situation closely.

Djibouti

- **SITUATION**

No locusts were seen during surveys carried out on the coast between Djibouti and Somalia on 23-25 March.

- **FORECAST**

No significant developments are likely.

Somalia

- **SITUATION**

A small outbreak developed in late February and early March within an area of unusually green vegetation on the northwest coast near Silil (1058N/4326E), about 65 km by 20 km in size. During the first week of March, small groups of mature gregarious adults, a small copulating swarm, and a few first to third instar hopper bands and solitary hoppers were present. Intensive surveys subsequently found nearly two dozen very small to medium sized hopper bands of all instars and two small mature swarms, each about 2.5 km² in size, as well as solitary and gregarious hoppers and adults. At the end of the month, ground control operations were being organized.

- **FORECAST**

Locust populations are expected to remain on the northwest coast as long as vegetation stays green.

Limited hatching may occur during April from March egg laying, more hopper bands could form and fledging is likely to commence by the end of April. Once vegetation dries out, adult groups and a few small swarms could move up the escarpment towards Ethiopia or east along the escarpment towards Erigavo. There is a lower risk of adults crossing the Gulf of Aden to southern Yemen.

Egypt

- **SITUATION**

No locusts were seen during surveys carried out in March in the Western Desert near Sh. Oweinat (2219N/2845E), along Lake Nasser near Tushka (2247N/3126E) and Abu Simbel (2219N/3138E), and on the Red Sea coast between Halaib (2213N/3638E) and Shalatyn (2308N/3535E).

- **FORECAST**

No significant developments are likely.

Saudi Arabia

- **SITUATION**

During March, isolated late instar solitary hoppers and immature adults were present in a few places on the Red Sea coastal plains between Lith (2008N/4016E) and Qunfidah (1909N/4107E), and near Jizan (1656N/4233E). No locusts were seen elsewhere on the coast or in the spring breeding areas in the interior.

- **FORECAST**

Unless further rains fall, locust numbers will decline along the Red Sea coastal plains and no significant developments are likely.

Yemen

- **SITUATION**

In early March, a small outbreak developed along a 90 km stretch of coast on the Gulf of Aden between Ahwar and Mukalla coast near Erqa (1347N/4729E) after flooding in October and egg laying in January and February. Hatching continued until mid March and numerous medium-sized hopper groups and bands formed during the second half of the month, mixed with solitary, *transiens* and gregarious hoppers and immature adults. By the end of March, at least 200 late instar hopper bands at densities up to 100 hoppers/m² and fledglings were reported from 20 locations. On the 30th, two immature swarms of 2 km² were seen flying in the area. Ground teams treated 4,670 ha of hopper bands, fledglings, adult groups and swarms on 18-31 March.

- **FORECAST**

The remaining hopper bands on the southern coast near Erqa that are not controlled will fledge in early April. The new adults are likely to form small groups and a few small swarms that, if not treated,

will move to areas of recent rainfall in the summer breeding areas in the Shabwah interior near Bayhan. By the end of the forecast period, egg laying could commence near Bayhan and in other areas that receive rains. On the Red Sea coast, low numbers of locusts are likely to be present and could breed on a small-scale in those areas that remain favourable.

Oman

- SITUATION

No locusts were seen during surveys carried out in Musandam, Batinah and Muscat regions in March except for an individual immature solitarious adult near Mawaleh (2332N/5812E).

- FORECAST

Small-scale breeding could occur in areas of recent rainfall on the northern coast.

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

No locusts were seen during surveys carried out in March on the southeast coast near Jask (2540N/5746E) and Chabahar (2517N/6036E) and in the interior near Bampur (2711N/6028E).

- FORECAST

If rainfall occurs in coastal areas between Jask and the Pakistani border, small-scale breeding is expected to take place but locust numbers should remain low.

Pakistan

- SITUATION

Late reports indicated that there were no locusts present during the first half of February while isolated immature and mature solitarious adults were seen in the spring breeding areas near Uthal (2548N/6637E) and in the Shooli Valley near Turbat (2600N/6303E) in the second half of the month.

During the first half of March, isolated mature solitarious adults persisted in the above areas and appeared in the interior near Panjgur (2658N/6406E) and in the Kharan Valley (2832N/6526E).

- Forecast

If more rains fall, small-scale breeding will occur in coastal and interior areas of Baluchistan but locust numbers are likely to remain low.

India

- SITUATION

No locusts were seen during surveys in Rajasthan

and Gujarat during March.

- FORECAST

No significant developments are likely.

Afghanistan

- SITUATION

No reports received.

- FORECAST

No significant developments are likely.



Announcements

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

Locust reporting. During calm (green) periods, countries should report at least once/month and send RAMSES data with a brief interpretation. During caution (yellow), threat (orange) and danger (red) periods, often associated with locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent at least twice/week within 48 hours of the latest survey. Affected countries are also encouraged to prepare decadal bulletins summarizing the situation. All information should be sent by e-mail to the FAO/ECLO Desert Locust Information Service (ecl@fao.org). Information received by the end of the month will be included in the FAO Desert Locust Bulletin for the current month; otherwise, it will not appear until the following month. Reports should be sent even if no locusts were found or if no surveys were conducted.

Google 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 (ecl@fao.org) for details.



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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:

- **EMPRES/WR survey training.** 2nd regional workshop for master survey officers, Agadir, Morocco (30 March – 10 April)
- **CRC Equipment evaluation.** Sprayers and protective clothing testing workshop, Ismailia, Egypt (9-19 May)
- **CRC/SWAC Locust Information.** Inter-regional workshop for Desert Locust Information Officers in the CRC and SWAC, Cairo (27-28 May)
- **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, Algiers (mid-July, tentative)
- **CRC Planning.** Contingency planning workshop, Cairo (26-31 July)
- **EMPRES/WR Research.** Regional workshop on Desert Locust research, Dakar (early October, tentative)
- **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 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.



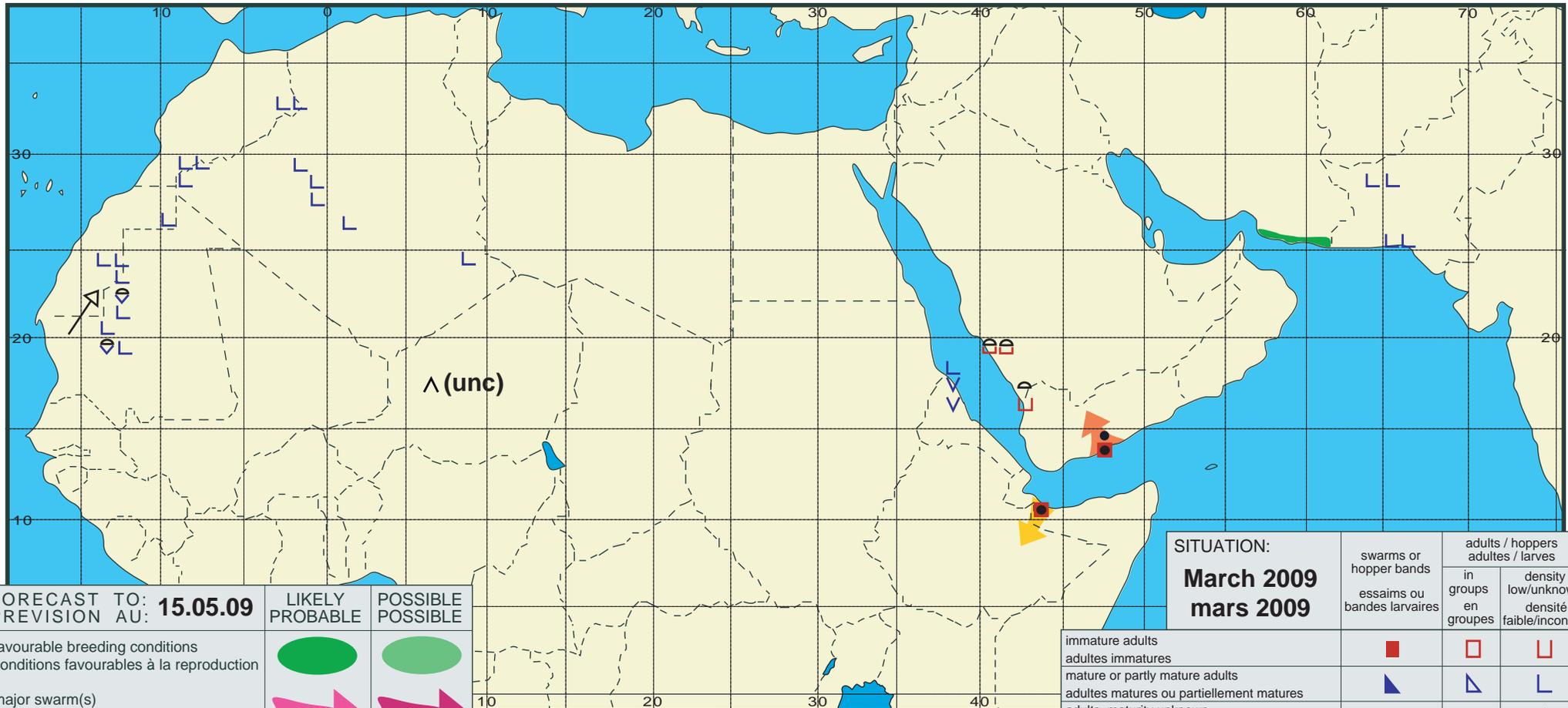
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Desert Locust Summary

Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU: 15.05.09	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: March 2009 mars 2009	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)			