

warning level: **CAUTION**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 387



**General Situation during December 2010
Forecast until mid-February 2011**

(4 Jan 2011)

The Desert Locust situation remained serious in Sudan during December. Despite control efforts, adult groups and swarms from the summer areas in the interior moved into the northeast and onto the Red Sea coast where they laid eggs that hatched and small hopper groups and bands formed. A few hopper groups and small bands also formed on the Red Sea coast in Yemen, and small-scale breeding occurred in southeast Egypt. During the forecast period, locust numbers will increase further along both sides of the Red Sea and hoppers will form small groups and bands while adults will form small groups and perhaps a few small swarms mainly in Sudan. In northwest Mauritania, locust numbers increased slightly and small groups of hoppers formed. In South West Asia, locust populations declined along the Indo-Pakistan border due to control operations, drying conditions and emigration towards the spring breeding areas in western Pakistan.

Western Region. Small-scale breeding continued for a third consecutive month in northwest Mauritania, causing locusts to increase and form small groups that were treated (2,689 ha). Some adults moved into the north of the country. During the forecast period, small-scale breeding is likely to continue in the northwest and commence in the north. Locusts are likely to concentrate in areas that remain green and form small groups. A similar situation could develop in adjacent areas of the Western Sahara in Morocco. Low numbers of adults were present in parts of southern and eastern Algeria and ground teams

treated 410 ha. In northern Mali, ground teams treated 850 ha where small-scale breeding occurred and adults formed small groups. Small-scale breeding also occurred in northern Niger. During the forecast period, low numbers of adults are likely to persist in parts of northern Mali and Niger, and in southern, central and eastern Algeria.

Central Region. Small groups and swarms moved from the summer breeding areas of the interior of Sudan to the winter breeding areas in the northwest and on the Red Sea coast where they laid eggs. Hatching commenced in mid-month and small hopper bands formed in most areas. Infestations were scattered within an area of about 40,000 km². Ground and aerial control operations treated more than 5,000 ha. Small-scale breeding occurred in adjacent areas of southern Egypt. The adult groups that crossed the Red Sea to Saudi Arabia in late November dispersed and laid eggs along the coastal plains to the south. Small-scale breeding occurred on the Red Sea coast in Yemen and 1,050 ha of hopper groups and bands were treated. During the forecast period, breeding in Sudan, Saudi Arabia and Yemen will cause locust numbers to increase. Small groups, bands and swarms may form in Sudan while mainly groups of hoppers and adults are likely to form in Saudi Arabia and Yemen.

Eastern Region. Locust populations declined in the summer breeding areas along both sides of the Indo-Pakistan border during December as a result of ground control operations against adult groups in Pakistan (600 ha) and drying conditions. During the forecast period, residual populations will move west towards the spring breeding areas of Baluchistan, Pakistan where low numbers of adults are likely to appear and breed in coastal and interior areas with the onset of the spring rains.

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 made 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



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Weather & Ecological Conditions in December 2010

Vegetation continued to dry out in most of the recession area as a result of a lack of rainfall during December, except in northwest Mauritania, northeast Sudan and parts of the Red Sea coast where breeding conditions remained favourable.

In the **Western Region**, no significant rain fell during December. Consequently, dry conditions prevailed in most of the northern Sahel except for northwest Mauritania where ecological conditions were favourable for breeding in wadis and low-lying areas of Adrar, Inchiri and Dakhlet Nouadhibou, and to a lesser extent in Tiris-Zemmour. Small localized areas of green vegetation persisted in parts of northern Mali (Adrar des Iforas) and Niger (Tamesna). In Northwest Africa, conditions were favourable in southern Algeria near Tamanrasset, in the east near Illizi, in the northwest near Bechar and, to a lesser extent, in the centre near Adrar, while dry conditions prevailed in the west near Tindouf. In Morocco, green vegetation persisted in a few areas of Wadi Draa and Ziz-Ghris while further south vegetation became green in parts of central and southern Western Sahara.

In the **Central Region**, very little rain fell during December for the second consecutive month. Light to moderate rains fell at times near Shalatyn on the Red Sea coast in southeast Egypt and on the central coast in Sudan, in the Tokar Delta, and in subcoastal areas (Wadi Diib) of the northeast. Consequently, ecological conditions remained favourable for breeding in all of these areas. In Yemen, even though no significant rain has fallen on the Red Sea coast since October, ecological conditions remained favourable in a few places for locust breeding but vegetation was drying out in other areas, causing locusts to concentrate. In northern Oman, light to heavy rains fell in the third decade on the Batinah coast and in the interior region of Sharqiya. Breeding conditions were favourable in the Musandam Peninsula.

In the **Eastern Region**, no significant rain fell during December. Consequently, vegetation was nearly dry in the summer breeding areas along both sides of

the Indo-Pakistan border. Dry conditions prevailed in the spring breeding areas of western Pakistan and southeast Iran.



Area Treated

Algeria	410 ha (December)
Mali	850 ha (7-22 December)
Mauritania	2,689 ha (1-25 December)
Pakistan	600 ha (1-15 December)
Sudan	600 ha (29-30 November)
	5,072 ha (December)
Yemen	1,050 ha (21-26 December)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

Locusts increased progressively in the northwest and, to a lesser extent, in the north in late November and early December. Scattered immature and mature adults were seen in Tiris-Zemmour near Bir Moghreïn (2510N/1135W) on 29 November. During the first decade of December, small-scale solitary and *transiens* egg-laying continued in Adrar, Inchiri and Dakhlet Nouadhibou where concentrations of mainly late instar solitary and *transiens* hoppers formed small groups at densities up to 5 hoppers/m² near Bennichab (1932N/1512W), Akjoujt (1945N/1421W) and Oujeft (2003N/1301W), and immature and mature solitary and *transiens* adults formed small groups at densities up to 10,000 adults/ha. Scattered immature and mature adults were present in parts of Tagant, Trarza and Aouker Boutilimit. During the remainder of the month, hoppers and adults continued to mature slowly and form groups in areas that were drying out. Ground control teams treated 2,689 ha on 1-25 December.

• FORECAST

Small-scale breeding will continue in parts of Inchiri, Adrar and Dakhlet Nouadhibou and may commence in Tiris-Zemmour, causing locust numbers to increase further. Hoppers and adults are expected to concentrate in areas that remain green and form small groups.

Mali

• SITUATION

During December, small-scale breeding occurred in Tamesna east of Kidal (1827N/0125E) and west

of Aguelhoc (1927N/0052E) in the Tilemsi Valley and Timetrine where isolated second to fifth instar solitary and *transiens* hoppers were present and mature adults were forming small groups. Ground teams treated 850 ha.

- **FORECAST**

Low to moderate numbers of adults are likely to persist in parts of Tamesna, the Adrar des Iforas and Timetrine. There is a low to moderate risk that a few small groups or swarmlets may form, which could move towards the north during periods of warm southerly winds.

Niger

- **SITUATION**

During December, small-scale breeding occurred in northern Tamesna where scattered solitary hoppers were present.

- **Forecast**

Scattered adults and perhaps a few small groups are likely to be present in parts of Tamesna. Some adults may move towards the north during periods of warm southerly winds while others could move east to the Air Mountains. All efforts should be made to clarify and monitor the situation.

Chad

- **SITUATION**

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

- **FORECAST**

Locust numbers will decline as conditions dry out and no significant developments are likely.

Senegal

- **SITUATION**

No reports were received during December.

- **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 December, scattered solitary adults were maturing west and southwest of Tamanrasset. Lower numbers of locusts were present near Djanet (2434N/0930E), Illizi (2630N/0825E) and In Salah (2712N/0229E). Ground teams treated 410 ha near Tamanrasset. No locusts were seen near Adrar (2753N/0017W), Beni Abbes (3011N/0214W), and Tindouf (2741N/0811W).

- **FORECAST**

Low numbers of locusts are likely to persist in parts of southern, central and eastern Sahara. There is a low to moderate risk that adults and perhaps a few small groups or swarmlets could move from northern Mali and Niger into these areas during periods of warm southerly winds.

Morocco

- **SITUATION**

During the second week of December, isolated solitary mature adults were seen in the southern part of the Western Sahara near Aousserd (2233N/1419W), Bir Gandouz (2136N/1628W) and Tichla (2137N/1453W). Small-scale breeding occurred near Aousserd and isolated solitary hoppers of all instars were present. A few maturing adults were seen further north near Agadir (3030N/0940W).

- **FORECAST**

Small-scale breeding in the southern part of the Western Sahara will cause locust numbers to increase slightly.

Libyan Arab Jamahiriya

- **SITUATION**

No reports were received during December.

- **FORECAST**

A few solitary adults could persist near Ghat. No significant developments are likely.

Tunisia

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

CENTRAL REGION

Sudan

- **SITUATION**

During December, control operations continued in the summer breeding areas of the Northern, River Nile and northwestern Khartoum States against groups of immature and mature adults at densities up to 1,200 adults/ha and a few late instar hopper groups in the Baiyuda Desert until the 19th. Locust infestations declined along the Atbara River where only a few solitary adults persisted.



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In the winter breeding areas, additional groups of immature and mature adults from the Baiyuda Desert were seen in the remote northeast and south of the Egyptian border from Wadi Diib to some 200 km to the west in the Nubian Desert and on the central Red Sea coast where they quickly matured and laid eggs. A few very small low to medium density groups and swarms laid eggs throughout the month. Hatching commenced at mid-month in W. Oko north of Tomala (2002N/3551E), in the Nubian Desert 70 km west of W. Diib, and on the coast between Suakin (1906N/3719E) and Port Sudan (1938N/3713E). During the last week of the month, hatching occurred in W. Diib. Small hopper bands formed in these areas at densities of up to 100 hoppers/m². Scattered first to third instar hoppers were also seen on the central coast. In the Tokar Delta, small-scale breeding occurred in early December and hoppers formed small groups during the last week of the month. Scattered immature and mature solitary adults were also seen on the northern coast near Fodukwan (2145N/3644E) during the last week. Control teams treated 5,072 ha during December, of which 3,350 ha were by air.

• **FORECAST**

Locust numbers will decline in the Baiyuda Desert. Hatching is expected to continue in the northeast and on the Red Sea coast during early January, which is likely to cause hopper groups and bands to form. Fledgling should commence in late January and adults could form small groups and perhaps a few swarms. If further rains fall, another generation of egg laying could commence during the second half of February.

Eritrea

• **SITUATION**

No reports were received during December.

• **FORECAST**

Small-scale breeding will occur in areas that receive rainfall on the Red Sea coastal plains between Massawa and the Sudanese border, causing locust numbers to increase slightly but remain below threatening levels.

Ethiopia

• **SITUATION**

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

• **FORECAST**

No significant developments are likely.

Djibouti

• **SITUATION**

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

• **FORECAST**

No significant developments are likely.

Somalia

• **SITUATION**

No reports were received during December.

• **FORECAST**

Low numbers of adults are likely to appear in the northwest on the coast and breed on a small scale in areas that receive rainfall.

Egypt

• **SITUATION**

In mid-December, solitary adults were seen copulating at three places in the Allaqi area southeast of Garf Husein (2317N/3252E). Scattered second and third instar solitary and *transiens* hoppers were seen at one place on the 29th. No locusts were seen elsewhere on the Red Sea coast between Shalatyn (2308N/3535E) and the Sudanese border, between Abu Simbel (2219N/3138E) and Tushka (2247N/3126E), in the Western Desert near Sh. Oweinat (2219N/2845E), and on the northwest coast of the Mediterranean near Salum (3131N/2509E).

• **FORECAST**

Small-scale breeding will continue in coastal and subcoastal areas in the southeast, causing locust numbers to increase slightly between Shalatyn and the Sudanese border, and in the Allaqi area.

Saudi Arabia

• **SITUATION**

It was confirmed that groups of immature gregarious adults arrived on the northern coast at Umm Lajj (2501N/3716E) on 30 November and probably dispersed along the coast to the south. In December, low numbers of adults were maturing near Mecca at Al Shameya (2149N/3932E). Groups of mature adults laid eggs on the coast near Lith (2008N/4016E), and solitary immature adults were seen near Qunfidah (1909N/4107E) and Jizan (1656N/4233E).

• **FORECAST**

Small-scale breeding will cause locust numbers to increase slightly along parts of the Red Sea coast between Umm Lajj and Jizan. There is a moderate risk that small groups of hoppers and adults could form near Lith.

Yemen

• SITUATION

During December, scattered solitary adults were present on the central Red Sea coastal plains between Zabid (1410N/4318E) and Bajil (1458N/4314E) and on the northern plains between Al Zuhrah (1541N/4300E) and the Saudi Arabian border. On the northern coast, all instars of scattered solitary, *transiens* and gregarious hoppers formed a few small groups and bands while mature adults formed a few groups between Al Zuhrah and Suq Abs (1600N/4312E) during the third decade. Ground control teams treated 1,050 ha on 21-26 December.

• FORECAST

Small-scale breeding will continue on the Red Sea coast, causing locust numbers to increase gradually and form small groups and perhaps a few hopper bands. All efforts should be made to monitor the situation on a regular basis.

Oman

• SITUATION

No locusts were seen during surveys carried out in the Musandam Peninsula during December.

• FORECAST

Low numbers of adults may be present and could persist on the Batinah coast and in adjacent areas that received good rainfall from Cyclone Phet in 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

No locusts were seen during surveys carried out on the southern coast near Bander-e Lengheh (2634N/5452E) and Jask (2540N/5746E) in December.

• FORECAST

By the end of the forecast period, low numbers of adults are likely to appear on the southeastern coastal plains and breed on a small scale if rainfall occurs.

Pakistan

• SITUATION

During the first half of December, residual populations of scattered immature and mature adults at densities up to 2,500 locusts/ha persisted in previously infested areas along the Indian border south of Rahimyar Khan (2822N/7020E) in Ghotki district and in parts of Bahawalpur district in Cholistan. Ground teams treated 600 ha of small groups of

adults. Scattered immature and mature solitary adults were seen west of Karachi near Uthal (2548N/6637E). No locusts were seen near Kharan (2832N/6526E) during the first week of the month.

• FORECAST

Locust numbers will decline along the Indian border as residual populations move west towards the spring breeding areas of Baluchistan. Consequently, low numbers of adults are likely to appear in coastal and interior areas of Baluchistan and breed on a small scale with the onset of the spring rains.

India

• SITUATION

No locusts were seen during surveys in Rajasthan in December.

• FORECAST

Scattered infestations may persist in parts of Jaisalmer District but locust numbers will gradually decline as adults move towards the west. 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



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are also encouraged to prepare decadal bulletins summarizing the situation. All information should be sent by e-mail to the FAO/ECLD Desert Locust Information Service (eclod@fao.org). Information received by the end of the month will be included in the FAO Desert Locust Bulletin for the current month; otherwise, it will not appear until the following month. Reports should be sent even if no locusts were found or if no surveys were conducted.

Google site. FAO DLIS has created a Google site (<https://sites.google.com/site/faodlis>) for national locust information officers to share problems, solutions and tips in using new technologies (eLocust2, eLocust2Mapper, RAMSES, remote sensing) and to make available the latest files for downloading. The site replaces the FAODLIS Google group, which will no longer be maintained. Interested users should contact Keith Cressman (keith.cressman@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).

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

- **Desert Locust situation updates.** Archives Section – Briefs
- **Desert Locust risk map update.** Archives Section – Risk maps

2011 events. The following activities are scheduled or planned:

- **SWAC.** 27th session, Islamabad, Pakistan (25-27 Jan)
- **EMPRES/WR.** Desert Locust Information Officer workshop, Bamako, Mali (8-10 Feb)
- **DLCC.** 40th session, Cairo, Egypt (6-10 Mar)

- **SWAC.** Desert Locust joint survey in the spring breeding areas of Pakistan and Iran (1 Apr - 4 May)
- **CRC/SWAC.** Desert Locust Information Officer workshop, Cairo, Egypt (April or May)



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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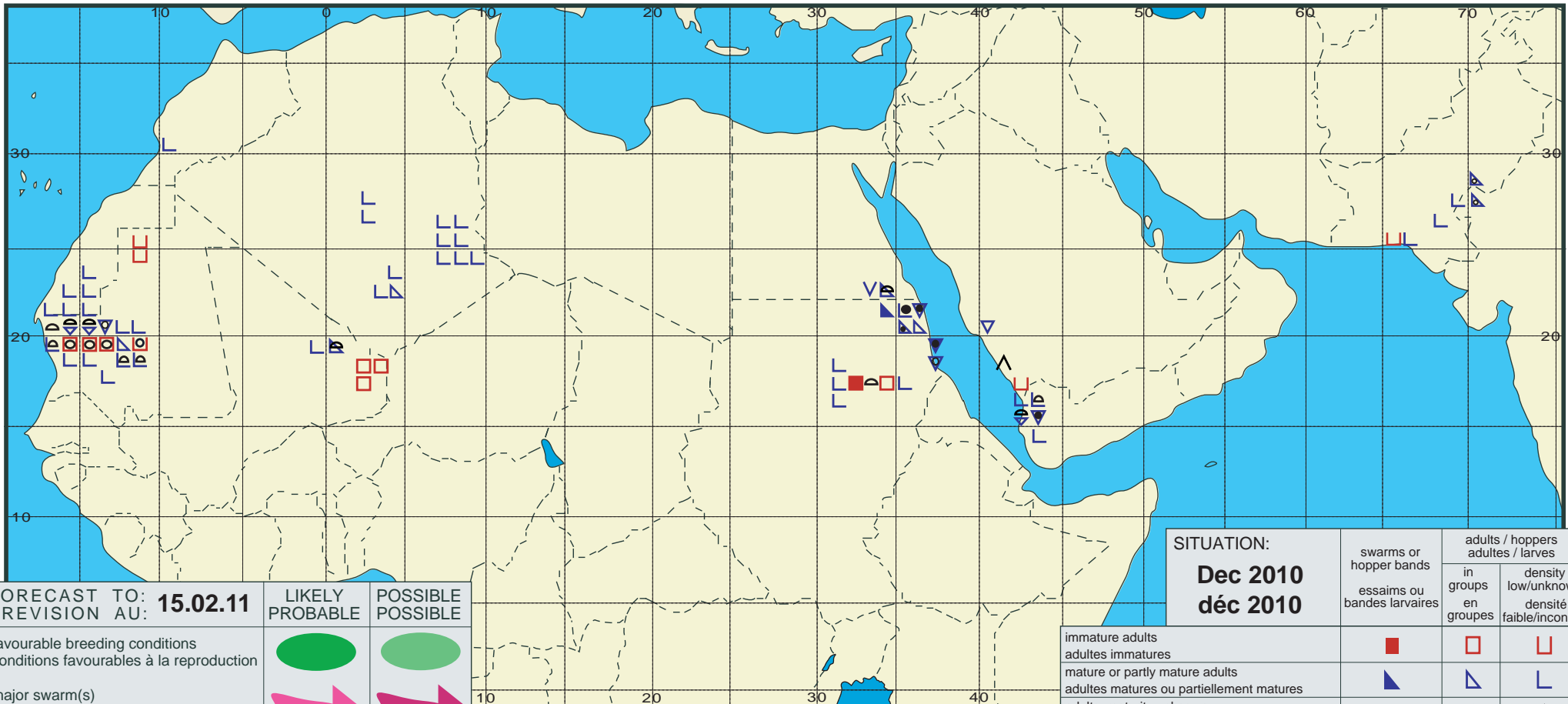
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Desert Locust Summary

Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU: 15.02.11	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: Dec 2010 déc 2010	swarms or hopper bands	adults / hoppers adultes / larves	
	essaims ou bandes larvaires	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)			