

warning level: **CAUTION**

# DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 386



**General Situation during November 2010  
Forecast until mid-January 2011**

(2 Dec 2010)

The Desert Locust situation continues to remain a cause for concern in Sudan. Despite control efforts during November, adults formed small groups that moved to northeast Sudan and laid eggs while several other groups crossed the Red Sea to the northern coast of Saudi Arabia. If good rains fall in either country, locust numbers could increase rapidly and threaten the region. Therefore, it is essential that the highest priority be given to deploying additional survey and control teams in the field immediately in both countries. Elsewhere, the current situation is being monitored closely along the Indo-Pakistan border where control operations continued in November against gregarious infestations, in northern Mali and Niger where the situation is not entirely clear but locusts are likely to be present and gregarizing, and in northwest Mauritania where breeding and limited control operations are underway for the second consecutive month.

**Western Region.** Very little rain fell during November in the Region. Small-scale breeding continued for a second consecutive month in northwest Mauritania, causing locust numbers to increase slightly and, in some areas, concentrate and form small groups that were treated (400 ha). During the forecast period, locust numbers will decline in central and western Mauritania as adults move to the northwest and north and breed on a small scale. Local reports of hopper bands in northern Mali were confirmed as gregarizing adults. A similar situation probably exists in adjacent areas of northern Niger

but this could not be confirmed due to insecurity. Scattered adults persisted in Chad and in the Sahara of Algeria. During the forecast period, there is a low to moderate risk that adults and perhaps a few small groups or swarmlets could move from northern Mali and Niger to parts of central, eastern and southern Algeria.

**Central Region.** Very little rain fell during November in the Region. Ground control operations continued during November in northern Sudan (6,909 ha) against hopper bands and adult groups in the summer breeding areas. Nevertheless, groups of adults moved to northeast Sudan where they laid eggs, and several groups reportedly crossed the Red Sea to the northern coast of Saudi Arabia on the 30<sup>th</sup>. Isolated adults were already present in a few places along the coast. During the forecast period, groups and perhaps a few small swarms will form in the interior of Sudan and move to the coast in December. Locust numbers will increase in the northeast as hatching commences and small hopper groups and bands form, and on the coast where breeding will occur in areas of recent rainfall. Breeding will also occur in areas of recent rainfall on the Red Sea coast of Saudi Arabia as well as in Yemen from earlier rains. Ground teams treated 8 ha of adults in northern Oman.

**Eastern Region.** Ground control operations continued during November in Pakistan (4,100 ha) against groups of hoppers and adults and, to a lesser extent, in India (370 ha), against adult groups. Consequently, locust infestations declined in both countries and the situation is expected to return to normal by the end of the year. Nevertheless, there remains a moderate risk that a few small adult groups and swarms could move west to the spring breeding areas in western Pakistan during the forecast period.

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.

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### Weather & Ecological Conditions in November 2010

**Vegetation continued to dry out in most of the recession area as a result of a lack of rainfall during November, except in northwest Mauritania where breeding conditions remained favourable and in northeast Sudan where light showers fell at mid-month.**

In the **Western Region**, very little rain fell during November. Consequently, vegetation in the summer breeding areas of the northern Sahel in West Africa continued to dry out or was already dry in nearly all areas except for parts of western and central Mauritania (Tagant, northern Brakna and the Aouker area near Boutilimit) and northern Niger (Tamesna and Air Mountains) where there were localized areas of green vegetation. In northwest Mauritania, ecological conditions were favourable for locust survival and breeding in Dakhlet Nouadhibou, Inchiri and Adrar regions where annual vegetation was green and soil was moist. Conditions were also expected to be favourable in the extreme north in wadis and low-lying areas. In Northwest Africa, conditions were favourable in southern and eastern Algeria near Tamanrasset and Illizi but dry elsewhere in the region.

In the **Central Region**, very little rain fell during November. Consequently, vegetation continued to dry out in the summer breeding areas of the interior in northern Sudan. At mid-month, light rain fell in northeast Sudan and adjacent areas of southeast Egypt, mainly in the Red Sea Hills between Sinkat, Sudan and Shalatyn, Egypt and to a lesser extent on the Red Sea coastal plains from Eit, Sudan to Shalatyn. The heaviest showers fell in Sudan between Tomala and Sufiya, including Wadi Oko/Diib. Consequently, ecological conditions were favourable for breeding along Wadi Oko/Diib and many of its tributaries between Tomala and Shalatyn. Light rains fell at the same time in Saudi Arabia near Al Barzah and Al Baha in the Asir Mountains. Breeding conditions are likely to improve as a result of runoff onto the Red Sea coastal plains from south of Jeddah to Thuwal, and near Qunfidah. Ecological conditions are expected to be favourable for locust survival and

breeding along the Tihama in Yemen from earlier rainfall. Elsewhere, dry conditions prevailed in the region.

In the **Eastern Region**, no significant rain fell during November. As a result, vegetation continued to dry out in the summer breeding areas along both sides of the Indo-Pakistan border. Dry condition prevailed in the spring breeding areas in western Pakistan and southeast Iran.



### Area Treated

India	370 ha (November)
Mauritania	400 ha (1-28 November)
Oman	8 ha (November)
Pakistan	5,044 ha (16-31 October)
	4,160 ha (1-27 November)
Sudan	2,869 ha (26-31 October)
	6,909 ha (1-28 November)



### Desert Locust Situation and Forecast

( see also the summary on page 1 )

#### WESTERN REGION

##### **Mauritania**

##### • SITUATION

During November, adults shifted gradually from central areas to the west and north where low numbers of immature and mature solitary adults persisted between Nouakchott (1809N/1558W) and Tidjikja (1833N/1126W). In the northwest, mainly fifth instar solitary hoppers originating from October breeding and mature solitary adults were scattered between Tijirat (1929N/1557W) and Chinguetti (2027N/1221W) where laying continued throughout November. Some solitary and *transiens* hoppers formed a few small groups at densities of 2 hoppers/m<sup>2</sup> during the second half of November near Oujeft (2003N/1301W) and Akjoujt (1945N/1421W). By the last week, scattered early instar solitary hoppers were present in the extreme northwest near Tmeimichat (2119N/1420W) and in the north near Zouerate (2244N/1221W) from laying that occurred in late October and early November. Elsewhere, local breeding occurred at the end of the month in western Tagant north of Moudjeria (1752N/1219W). Ground teams treated 400 ha during on 1-28 November.

##### • FORECAST

*Hatching will continue in Inchiri, Adrar and western Tagant, causing locust numbers to increase slightly.*

Locust numbers will decline in the centre as adults continue to move to the northwest and north. Local concentration of hoppers and adults is expected to occur in those areas where vegetation is drying out, causing a few small groups to form. Scattered adults are likely to appear in the extreme north and breed on a small scale.

#### **Mali**

##### • SITUATION

On 8 November, there were unconfirmed reports of hopper bands on the western edge of the Tilemsi Valley in Timetrine near Erg Lahmar (1856N/0016E) and in Tamesna. A survey in Tamesna later confirmed that immature solitary and *transiens* adults were present at six locations east of Tin Essako (1826N/0229E) and adults were forming groups at half of these places. Field operations were limited by continued insecurity.

##### • 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

No surveys were carried out during November in Tamesna and the Air Mountains due to insecurity, and no locusts were reported.

##### • 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

During November, low numbers of mainly mature solitary adults persisted in Kanem near Salal (1448N/1712E), in Batha near Haraz-Djombo (1357N/1926E) and in the northeast between Arada (1501N/2040E) and Fada (1714N/2132E).

##### • FORECAST

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

#### **Senegal**

##### • SITUATION

No reports were received during November.

##### • 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 November, isolated immature and mature solitary and *transiens* adults were present in the eastern part of the central Sahara between Illizi (2630N/0825E) and In Salah (2712N/0229E) and in the southern Sahara west of Tamanrasset (2250N/0528E). No locusts were seen near Adrar (2753N/0017W).

##### • FORECAST

There is a low to moderate risk that adults and perhaps a few small groups or swarmlets could move from northern Mali and Niger to parts of the southern, central and eastern Sahara during periods of warm southerly winds.

#### **Morocco**

##### • SITUATION

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

##### • FORECAST

Low numbers of solitary adults are likely to be present and could continue to appear in the southern portion of Western Sahara. Small-scale breeding will take place if rainfall occurs.

#### **Libyan Arab Jamahiriya**

##### • SITUATION

No reports were received during November.

##### • 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 November.

##### • FORECAST

No significant developments are likely.



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### **CENTRAL REGION**

#### **Sudan**

##### • SITUATION

A late report indicated that control teams treated 2,869 ha of second to fifth instar hopper bands, adult groups and a swarm that was laying eggs in the Baiyuda Desert as well as third to fifth instar hopper bands along the Atbara River from 26 to 31 October.

Control operations continued against hopper bands of all instars, varying in size from 20 m<sup>2</sup> to 1 ha, until 10 November and resumed again on the 20<sup>th</sup> until the end of the month against late instar bands, fledglings and groups of immature adults in Northern and River Nile States, and against groups of mature solitarious adults in the southern part of the Baiyuda Desert in Khartoum State. Mature solitarious adults began to appear on the central Red Sea coast between Suakin (1906N/3719E) and Port Sudan (1938N/3713E) on the 20<sup>th</sup> and laid eggs. On 24-26 November, groups of immature and mature adults appeared further north in Wadi Oko and Wadi Diib between Tomala (2002N/3551E) and the Egyptian border. Egg laying was reported on the 26<sup>th</sup> in several wadis north of Sufiya (2119N/3613E). Ground teams treated 6,909 ha from 1 to 28 November.

##### • FORECAST

*Small groups and perhaps a few small swarms will form in early December in the Baiyuda Desert and along the Atbara River and move to the coast. Locust numbers could increase rapidly once hatching occurs in Wadi Oko/Diib and small hopper groups and bands form. This is likely to be supplemented by breeding in coastal areas between Suakin and the Egyptian border, and, if rains fall, on the coast south of Suakin, including Tokar Delta.*

#### **Eritrea**

##### • SITUATION

A late report indicated that no locusts were seen during a survey carried out on the Red Sea coast on 10-15 October between Shelshela (1553N/3906E) and the Sudanese border, except near Shelshela where scattered solitarious adults were present at two places.

No locusts were seen during a survey on the Red Sea between Shelshela and Embere (1628N/3856E) on 24-27 November.

##### • 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

During November, no locusts were seen during a survey on the 13<sup>th</sup> in the Tigray region.

##### • FORECAST

*No significant developments are likely.*

#### **Djibouti**

##### • SITUATION

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

##### • FORECAST

*No significant developments are likely.*

#### **Somalia**

##### • SITUATION

A late report indicated that no locusts were seen during a survey on 26 October to 1 November on the plateau between Burao (0931N/4533E) and Boroma (0956N/4313E).

##### • FORECAST

*No significant developments are likely.*

#### **Egypt**

##### • SITUATION

No locusts were seen during surveys carried out in November on the Red Sea coast between Shalatyn (2308N/3535E) and the Sudanese border, west of Marsa Alam (2504N/3454E), and along the shore of Lake Nasser near Garf Husein (2317N/3252E) and between Abu Simbel (2219N/3138E) and Tushka (2247N/3126E).

##### • FORECAST

*If rainfall occurs, small-scale breeding will take place on the Red Sea coastal plains between Shalatyn and the Sudanese border, causing locust numbers to increase slightly. There is a moderate risk that adults and a few groups may appear in these areas from northern Sudan during December.*

#### **Saudi Arabia**

##### • SITUATION

During November, isolated immature solitarious adults were present on the Red Sea coast between Jeddah (2130N/3910E) and Rabigh (2247N/3901E), and between Qunfidah (1909N/4107E) and Jizan (1656N/4233E). On the 30<sup>th</sup>, there were unconfirmed reports of groups of gregarious immature adults on the northern coast at Umm Lajj (2501N/3716E).

- **FORECAST**

*Adults, including those arriving from Northeast Africa, are expected to mature rapidly and lay eggs in areas on the Red Sea coast that receive rainfall or runoff. In some places, this could lead to the formation of small groups of hoppers while in other areas, only low numbers of hoppers are likely to result.*

#### **Yemen**

- **SITUATION**

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

- **FORECAST**

*Low numbers of locusts are likely to be present and breeding on a small scale on the Red Sea coast. Consequently, locust numbers will gradually increase during the forecast period. All efforts should be made to monitor the situation on a regular basis.*

#### **Oman**

- **SITUATION**

During November, isolated immature solitary adults were present on the Batinah coast west of Muscat in Wadi Al Khoudh (2338N/5809E). Control teams treated 8 ha of solitary and *transiens* adults in the nearby mountains at Al Sahiya (2314N/5807E).

- **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 reports were received during November.

- **FORECAST**

*No significant developments are likely.*

#### **Pakistan**

- **SITUATION**

New information indicated that there were several reports of medium to high density immature swarms of 1-9 km<sup>2</sup> in size in Ghotki district on the Indian border near Gopan Wari (2733N/6956E) from 21 to 31 October. Ground teams treated 5,044 ha during the second fortnight of October.

During November, groups of fourth and fifth instar hoppers were present along the Indian border south of Rahimyar Khan (2822N/7020E). Further south, groups of immature solitary, *transiens* and gregarious

adults were present along the border from Ghotki district to south of Rahimyar Khan while, to the north, low numbers of immature and mature solitary adults were present in Bahawalpur district. As a result of control operations, the number of hopper groups and locations with adult infestations declined during the month. Ground teams treated 4,160 ha on 1-27 November.

- **FORECAST**

*There is a moderate risk that small groups and perhaps a few small swarms could form in currently infested areas and move west towards the spring breeding areas of Baluchistan.*

#### **India**

- **SITUATION**

During the first half of November, ground control operations continued against groups of immature solitary and *transiens* adults between Jaisalmer (2652N/7055E) and the Pakistani border, treating 370 ha. Low numbers of fourth and fifth instar solitary hoppers were seen at one place northwest of Jaisalmer.

During the second half of November, isolated immature adults were seen west of Jodhpur (2618N/7308E) and a few mature adults were present near the Pakistani border northwest of Barmer (2543N/7125E).

- **FORECAST**

*Locust adults are expected to concentrate in the few areas that remain green in Jaisalmer district. There is a low risk that they could form a limited number of small groups that are expected to move west towards the spring breeding areas of western Pakistan.*

#### **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



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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 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](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](http://www.fao.org/ag/locusts)) are:

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

**2010-11 events.** The following activities are scheduled or planned:

- **EMPRES/WR.** 9<sup>th</sup> EMPRES Liaison Officers meeting (12-16 Dec) and 6<sup>th</sup> Steering Committee meeting (19-20 Dec), Tripoli, Libya
- **SWAC.** 27<sup>th</sup> session, Islamabad, Pakistan (25-27 Jan)
- **EMPRES/WR.** Desert Locust Information Officer workshop, Bamako, Mali (8-10 Feb, tentative)
- **DLCC.** 40<sup>th</sup> session, Cairo, Egypt (6-10 Mar)
- **CRC/SWAC.** Desert Locust Information Officer workshop, Cairo, Egypt (Apr)
- **SWAC.** Desert Locust joint survey in the spring breeding areas of Pakistan and Iran (1 Apr - 4 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 km<sup>2</sup> • band: 1 - 25 m<sup>2</sup>

#### **SMALL**

- swarm: 1 - 10 km<sup>2</sup> • band: 25 - 2,500 m<sup>2</sup>

#### **MEDIUM**

- swarm: 10 - 100 km<sup>2</sup> • band: 2,500 m<sup>2</sup> - 10 ha

#### **LARGE**

- swarm: 100 - 500 km<sup>2</sup> • band: 10 - 50 ha

#### **VERY LARGE**

- swarm: 500+ km<sup>2</sup> • 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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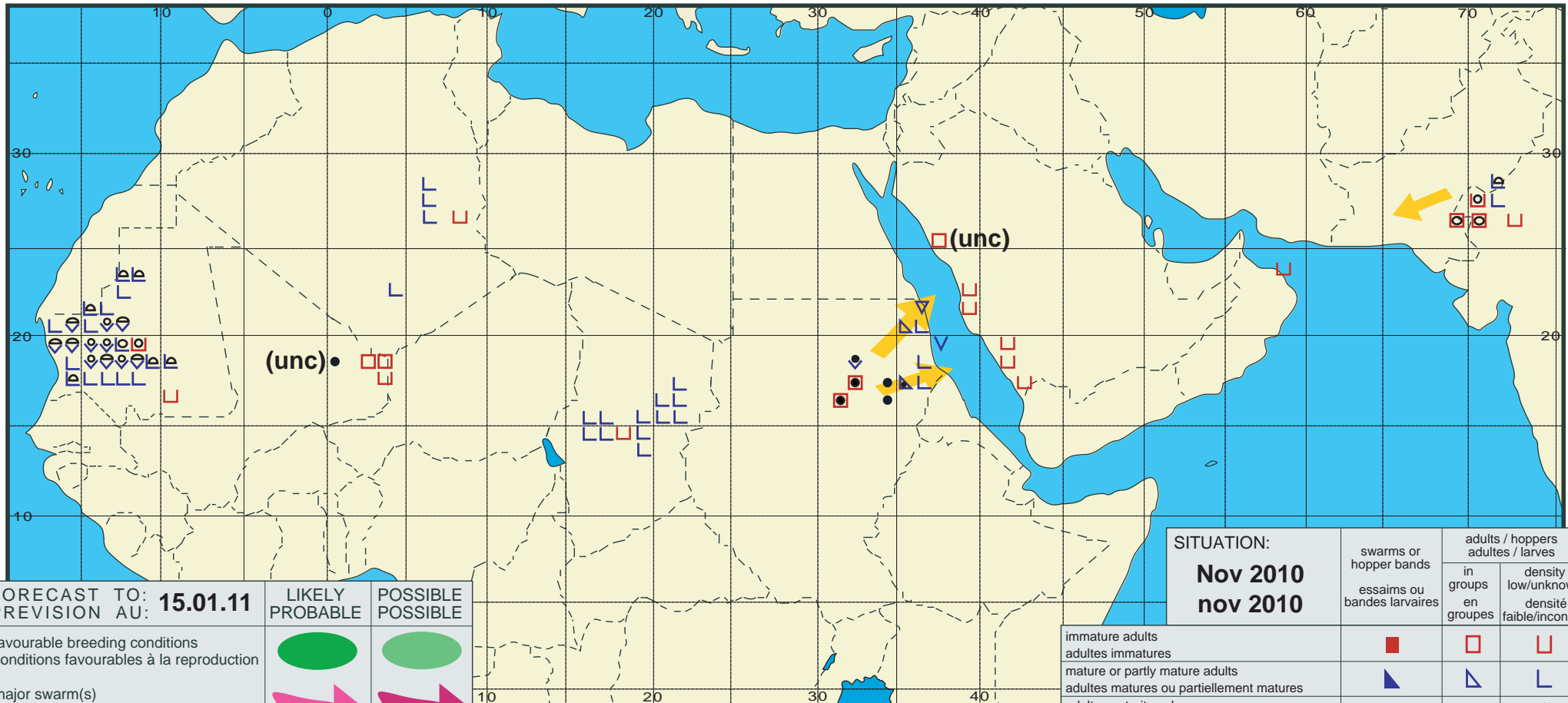
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# Desert Locust Summary

## Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU: <b>15.01.11</b>	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: <b>Nov 2010</b> nov 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)			