

warning level: **CAUTION**

# DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 434



**General Situation during November 2014  
Forecast until mid-January 2015**

(3.12.2014)

An outbreak continued in Sudan during November as swarms formed in the summer breeding areas of the interior and moved to winter breeding areas on the Red Sea coastal plains and laid eggs. Another outbreak developed on the Red Sea coast of Eritrea where hoppers formed bands. Intensive control operations were underway in both countries. Scattered adults were present on the Red Sea coast in Saudi Arabia and Yemen. During the forecast period, breeding will cause locust numbers to increase along both sides of the Red Sea, particularly in Sudan and Eritrea where hatching and band formation are expected. Intensive survey and control operations will be required in both countries. Elsewhere, the situation remained calm.

**Western Region.** The situation remained calm in November. Local breeding occurred in **Niger** and western **Mauritania** but locust numbers remained low. Locusts may be present in northern **Mali** but this could not be confirmed in the absence of surveys due to insecurity. In Northwest Africa, unusually heavy rains fell in **Morocco**, the **Western Sahara** and in northern Mauritania that could eventually lead to good conditions for spring breeding.

**Central Region.** While the outbreak continued in **Sudan**, another outbreak developed on the Red Sea coast in **Eritrea**. As a result of good breeding, hoppers formed groups and bands on the central and northern coast, and ground teams treated nearly 7,000 ha in

November. In Sudan, intensive aerial and ground control operations continued in the summer breeding areas of the interior against hopper bands and swarms, treating 76,000 ha. Swarms that escaped control moved to the Red Sea coast and laid eggs by the end of November along a 250 km stretch and some 7,000 ha were treated. Although the outbreaks are currently confined to Sudan and Eritrea, there remains a risk that adult groups and a few small swarms may appear in southeast **Egypt** where so far only scattered adults and small-scale breeding have been reported. Scattered adults were also present on the Red Sea coast in **Saudi Arabia** and **Yemen**. Locust numbers will increase along both sides of the Red Sea, primarily in Sudan where hatching and band formation will occur in December and in Eritrea where a second generation of breeding is likely in January.

**Eastern Region.** The situation remained calm in November. Only isolated adults persisted in a few places of Rajasthan, **India**. No significant developments are likely.

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 are available on the Internet.

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### Weather & Ecological Conditions in November 2014

**Good rains continued along both sides of the Red Sea coast where ecological conditions were favourable for breeding. Unusually heavy rains fell in Northwest Africa. Dry conditions prevailed in Southwest Asia.**

In the **Western Region**, unusually heavy rains fell in Northwest Africa during the third decade of November. The rains extended from central areas of the Western Sahara to the Atlas Mountains in Morocco as well as adjacent areas of western Algeria and parts of northern Mauritania. Up to 100 mm was reported in some areas. The heaviest showers occurred along the coast, on the southern side of the Anti-Atlas Mountains and to the east of Tindouf, Algeria. Ecological conditions were favourable for breeding in the Draa Valley and in northeast Morocco near Bouarfa but were dry in the extreme south. In Algeria, conditions were favourable for breeding near Tamanrasset, Illizi and along the Malian border near Timeiaouine. In Libya, light showers fell during the first decade in the southwest near Ghat. Dry conditions prevailed in the northern Sahel of West Africa.

In the **Central Region**, good rains fell at times in the winter breeding areas along both sides of the Red Sea. During the second decade, good rains fell along the entire length of the Red Sea coast in Sudan as well as in Eritrea from Karora to Ghelaelo. Ecological conditions were favourable for breeding in both countries. In Saudi Arabia, good rains fell on the southern coast near Jizan during the first decade and on the central coast from Qunfidah to Yenbo during the second and third decades. Consequently, vegetation was becoming green and conditions were favourable for breeding in most areas. In southeast Egypt, moderate rainfall occurred at times on the Red Sea coast near Abu Ramad while heavier rains fell on 21-22 November. In the Horn of Africa, good rains fell during the third decade in the Harar Highlands of eastern Ethiopia as well as between Jijiga and Boroma, northern Somalia. Ecological conditions remained generally dry in winter breeding areas on the coast in northwest Somalia.



### Area Treated

Eritrea	6,943 ha (November)
Sudan	82,977 ha (November)



### Desert Locust Situation and Forecast

*( see also the summary on page 1 )*

#### WESTERN REGION

##### **Mauritania**

###### • SITUATION

During November, a few scattered mature solitary adults persisted north of Aioun El Atrous (1639N/0936W) in the south, and in the Aguilal Faye (1827N/1444W) area of the west. Local breeding was detected in the latter area where scattered first to fourth instar solitary hoppers were seen at one location.

###### • FORECAST

*Scattered locusts are expected to persist in the Aguilal Faye area and may be present in the northwest. If additional rains fall, small-scale breeding will cause locust numbers to slightly increase in both areas. No significant developments are likely.*

##### **Mali**

###### • SITUATION

No surveys were carried out and no locusts were reported during November. Nevertheless, local scouts indicated that scattered mature solitary adults previously seen in the Tilemsi Valley northwest of Kidal (1827N/0125E) were concentrating in vegetation that remained green.

###### • FORECAST

*Low numbers of adults are likely to persist in parts of the Tilemsi Valley and the Adrar des Iforas.*

##### **Niger**

###### • SITUATION

During November, scattered immature and mature solitary adults were present in Tamesna between Tassara (1650N/0550E) and In Abangharit (1754N/0559E) and in central areas between Tanout (1458N/0852E) and Termit Massif (1600N/1120E). Small-scale breeding occurred in both areas

where third to fifth instar solitary hoppers were reported. No locusts were seen northeast of Zinder (1346N/0858E).

- **FORECAST**

*Scattered adults may appear in parts of the southern Air Mountains where they are likely to persist in areas that remain green.*

### **Chad**

- **SITUATION**

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

- **FORECAST**

*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, no locusts were seen during surveys carried out near Adrar (2753N/0017W) in the Central Sahara, Illizi (2630N/0825E) in the east, Tamanrasset (2250N/0528E) in the south and along the Malian border near Timeiaouine (2026N/0148E).

- **FORECAST**

*Small-scale breeding could occur in favourable areas near Adrar, Illizi, Tamanrasset and Timeiaouine but low temperatures are expected to delay development.*

### **Morocco**

- **SITUATION**

During the third decade of November, a few isolated immature solitary adults were seen south of the Atlas Mountains near Guelmim (2859N/1003W).

- **FORECAST**

*Low numbers of adults may appear in the Western Sahara and breed on a small scale in areas of recent rainfall.*

### **Libya**

- **SITUATION**

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

- **FORECAST**

*Low numbers of adults may appear in areas of recent rainfall in the southwest.*

### **Tunisia**

- **SITUATION**

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

- **FORECAST**

*No significant developments are likely.*

## **CENTRAL REGION**

### **Sudan**

- **SITUATION**

During the first half of November, hopper bands continued to form in the summer breeding areas of the Baiyuda Desert, along the Atbara River and west of the Red Sea Hills near Haiya (1820N/3621E) while hopper groups formed near Kassala (1527N/3623E). By mid-month, nearly all the bands had fledged, forming dense immature groups and swarms that moved to winter breeding areas on the Red Sea coast. During the last week of the month, numerous immature groups and swarms appeared on the coastal plains between Bir Salalah (2034N/3701E) and Tokar (1827N/3741E) where they quickly matured and laid eggs. Adult groups also reached the southern coast and laid eggs near Aiterba (1753N/3819E) and the Eritrea border. Immature and mature solitary adults were scattered throughout all of these areas as well as along Wadi Oko/Diib in the northeast. So far, hopper bands of all instars have formed in one area near Port Sudan (1938N/3713E) from October breeding while a few solitary hoppers were seen on the coast south of Suakin (1906N/3719E) and in the Tokar Delta. During November, control teams treated 75,962 ha in the summer breeding areas of which 57,660 ha were by air. In the winter breeding areas, 7,015 ha were treated of which 6,000 ha were by air.

- **FORECAST**

*Moderate to large-scale hatching will occur from early December onwards that will cause locust numbers to increase with hopper groups and bands forming on the Red Sea coast between Mohamed Qol to Karora. Fledging from earlier breeding will occur during December. Smaller scale breeding is likely in Wadi Oko/Diib. There is a risk of adult groups and swarms arriving on the southern coast from Eritrea.*



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### Eritrea

#### • SITUATION

During November, an outbreak developed on the central coast near Sheib (1551N/3903E) where medium to high densities of first and second instar gregarious hoppers were reported early in the month. Thereafter, an increasing number of hopper groups and bands of all instars formed in the nearby Akbanazouf Plain. Scattered mature adults were present and copulating until about mid-month in both areas as well as between Wekiro (1548N/3918E) and Massawa (1537N/3928E). On the northern coast, a few first to third instar hopper groups and bands, and groups of copulating adults were seen during the last week of the month near Karora (1745N/3820E) and immature adults were present near Mehimet (1723N/3833E). Control teams treated 6,943 ha during November.

#### • FORECAST

*Breeding will cause locust numbers to increase in areas of recent rainfall on the Red Sea coastal plains between Massawa and Karora and is likely to extend to Ghelaelo. Hoppers are expected to form groups and small bands while adults will form groups and perhaps a few swarmlets. A second generation of breeding is likely to commence in January near Sheib, causing locust numbers to increase further.*

### Ethiopia

#### • SITUATION

In mid-November there was a report of a swarmlet in the Afar region of the northeast; otherwise, no surveys were carried out and no locusts were reported during the month.

#### • FORECAST

*No significant developments are likely.*

### Djibouti

#### • SITUATION

No reports were received during November.

#### • FORECAST

*No significant developments are likely.*

### Somalia

#### • SITUATION

No locusts were seen during a survey carried out on the plateau between Hargeisa (0931N/4402E) and Boroma (0956N/4313E), the escarpment and on the

northwest coast between ulhar (1023N/4425E) and the Djibouti border on 21-25 November.

#### • FORECAST

*Low numbers of adults are expected to be present on the coastal plains in the northwest and will breed on a small scale if rainfall occurs. This would cause locust numbers to increase gradually.*

### Egypt

#### • SITUATION

During the first half of November, scattered immature and mature solitarious and *transiens* adults were seen in the Allaqi area (2245N/3344E) and on the eastern shore of Lake Nasser near the Sudan border. Low numbers of mature solitarious adults were seen during the last week on the Red Sea coast near Halaib (2213N/3638E) and in subcoastal areas southwest of Shalatyn. Small-scale breeding was underway in the latter area where first and second instar hoppers were present from egg-laying during the second week of November. No locusts were seen between Shalatyn (2308N/3535E) and Marsa Alam (2504N/3454E), near Tushka (2247N/3126E) and in the northwest near Siwa (2912N/2531E) and Salum (3131N/2509E).

#### • FORECAST

*There is a moderate risk that adult groups and perhaps a few small swarmlets from Sudan may appear in early December on the Red Sea coast between Berenice and Halaib, mature quickly and lay eggs in areas of recent rainfall. Subsequent hatching will cause locust numbers to increase.*

### Saudi Arabia

#### • SITUATION

During November, an increasing number of scattered immature and mature solitarious adults were seen on the Red Sea coastal plains from Lith (2008N/4016E) to about 80 km south of Qunfidah (1909N/4107E). No locusts were seen elsewhere along the coast.

#### • FORECAST

*Small-scale breeding will cause locust numbers to increase on the Red Sea coast primarily between Lith and Qunfidah but is likely to extend north to Yenbo and south to Jizan.*

### Yemen

#### • SITUATION

During November, low numbers of immature and mature solitarious adults were present on the northern Red Sea coast between Midi (1619N/4248E) and Al Zuhrah (1541N/4300E), and on the central coast from Bajil (1458N/4314E) to south of Hodeidah (1450N/4258E), and on the Gulf of Aden coast primarily northwest of Aden (1250N/4503E) and, to



a lesser extent, near Zinjibar (1306N/4523E). Small-scale breeding occurred near Am Rija (1302N/4434E).

- **FORECAST**

*Small-scale breeding will cause locust numbers to increase on the Red Sea and Gulf of Aden coastal plains. There is a risk that a few small groups could form in some areas.*

### **Oman**

- **SITUATION**

During November, no locusts were seen during surveys on the northern Batinah coast, the Musandam Peninsula, in the northern interior near Adam (2223N/5731E), and in the extreme south near Maziuna (1750N/5239E) and the Yemen border.

- **FORECAST**

*No significant developments are likely.*

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

- **FORECAST**

*No significant developments are likely.*

## **EASTERN REGION**

### **Iran**

- **SITUATION**

During November, no locusts were seen during surveys carried out on the coast near Jask (2540N/5746E).

- **FORECAST**

*No significant developments are likely.*

### **Pakistan**

- **SITUATION**

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

- **FORECAST**

*No significant developments are likely.*

### **India**

- **SITUATION**

During the first fortnight of November, isolated immature and mature solitary adults persisted at a few places to the west of Bikaner (2801N/7322E) near the Indira Gandhi Canal and the Pakistan border. No locusts were seen during the second fortnight.

- **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/ECLC Desert Locust Information Service (eclc@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.

**Locust tools and resources.** FAO has developed a number of tools that National locust information officers and other interested individuals can use for Desert Locust early warning and management:

- **MODIS.** Vegetation imagery every 16 days ([http://iridl.ldeo.columbia.edu/maproom/.Food\\_Security/Locusts/Regional/.MODIS/index.html](http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/Regional/.MODIS/index.html))
- **MODIS.** Daily rainfall imagery in real time ([http://iridl.ldeo.columbia.edu/maproom/.Food\\_Security/Locusts/index.html](http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/index.html))
- **RFE.** Rainfall estimates every day, decade and month ([http://iridl.ldeo.columbia.edu/maproom/.Food\\_Security/Locusts/index.html](http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/index.html))
- **Greenness maps.** Dynamic maps of green vegetation evolution every decade ([http://iridl.ldeo.columbia.edu/maproom/Food\\_Security/Locusts/Regional/greenness.html](http://iridl.ldeo.columbia.edu/maproom/Food_Security/Locusts/Regional/greenness.html))



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- **eLocust3 training videos.** A set of 15 introductory training videos are available on YouTube: [https://www.youtube.com/playlist?list=P\\_LjxRk5CAwvG\\_0iFxfjZ5C2fLByF3jvhHOx](https://www.youtube.com/playlist?list=P_LjxRk5CAwvG_0iFxfjZ5C2fLByF3jvhHOx)
- **FAODLIS Google site.** A platform for sharing problems, solutions, tips and files for eLocust2, eLocust2Mapper, RAMSES and remote sensing (<https://sites.google.com/site/faodlis>)
- **FAOLOCUST Twitter.** The very latest updates are posted on Twitter (<http://www.twitter.com/faolocust>)
- **FAOLocust Facebook.** A social means of information exchange using Facebook (<http://www.facebook.com/faolocust>)
- **Slideshare.** Locust presentations and photos available for viewing and download (<http://www.slideshare.net/faolocust>)
- **eLERT.** A dynamic and interactive online database of resources for locust emergencies (<http://sites.google.com/site/elertsite>)

**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
- **Current threats.** Sudan
- **Desert Locust risk map.** 4 November 2014
- **India National ToT report.** Publications – Reports – SWAC
- **Regional locust commissions.** Information

**2014-2015 events.** The following activities are scheduled or planned:

- **EMPRES/WR.** 13<sup>th</sup> EMPRES Liaison Officer Meeting, Tunis (1-5 December)
- **EMPRES/WR.** 10<sup>th</sup> Steering Committee Meeting, Tunis (8-9 December)
- **Pesticide Referee Group.** 10<sup>th</sup> meeting, Tunis (10-12 December)
- **SWAC.** 50<sup>th</sup> Anniversary of the Commission, Tehran (15 December)
- **SWAC.** 29<sup>th</sup> Session of the Commission, Tehran (16-18 December)
- **CRC.** Regional contingency planning workshop, Hurgada, Egypt (15-19 February)
- **CRC/SWAC.** 7<sup>th</sup> inter-regional workshop for Desert Locust Information Officers, Cairo (22-25 February)

**A.K. Rai.** It is with deep regret that we announce the death of A.K. Rai on 22 November. Mr. Rai was the former Deputy Director (Entomology) at the field headquarters of the Locust Warning Organization in Jodhpur, India. We would like to express our sincere condolences to his family and government.



## 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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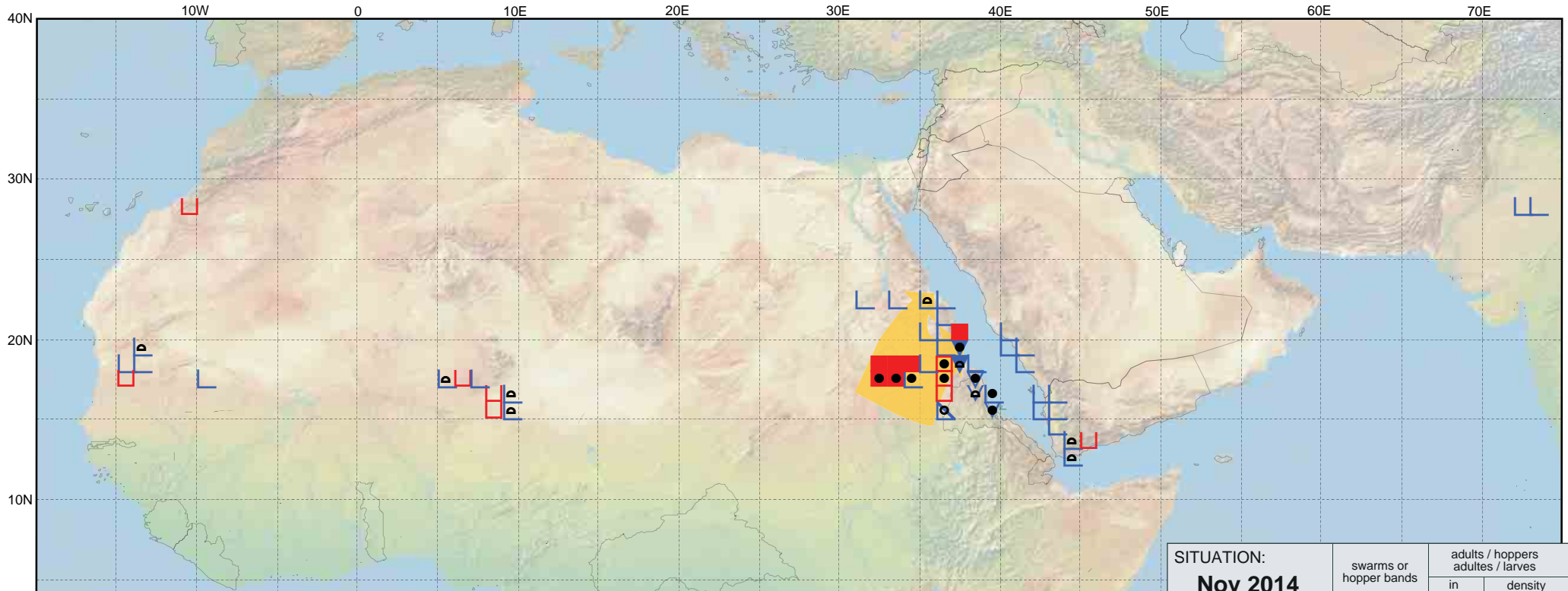
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# Desert Locust Summary

## Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU: <b>15.01.15</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 2014</b> <b>nov 2014</b>	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)			