

warning level: **CAUTION**

# DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 435



**General Situation during December 2014  
Forecast until mid-February 2015**

(4.1.2015)

**Desert Locust outbreaks were in progress on the Red Sea coast in Sudan and Eritrea where control operations continued against ongoing breeding during December. A local outbreak developed in Saudi Arabia where control operations were mounted against small hopper bands. Small-scale breeding occurred on the Red Sea and Gulf of Aden coast in Yemen. Elsewhere, the situation remained calm. During the forecast period, a second generation of breeding will cause locust numbers to increase and bands and perhaps small swarms to form in Sudan and Eritrea. Locust numbers will also increase in Saudi Arabia due to breeding but on a smaller scale.**

**Western Region.** The situation remained calm in December. Very little rain fell and ecological conditions were mainly dry. A few scattered hoppers were present in western **Mauritania**. Low numbers of locusts might be present and could persist in parts of northern **Mali** and **Niger**. As temperatures warm up towards the end of the forecast period, low numbers of adults may appear south of the Atlas Mountains in **Morocco** and in parts of the Sahara in **Algeria** and southwest **Libya** where they could eventually breed on a small scale if rainfall occurs.

**Central Region.** Widespread hatching occurred during December on the Red Sea coast in **Sudan** that gave rise to hopper groups and bands. Ground and aerial control operations treated nearly 12,000 ha which was much less than in November. Fledging

will commence about mid-January and, thereafter, an increasing number of adult groups and swarms could form. If conditions remain favourable, there is a risk of another generation of breeding. In **Eritrea**, first-generation breeding continued on the coast where more hopper bands formed as well as adult groups and a few swarms. A second generation of breeding commenced at the end of December that will cause locust numbers to increase further with new hopper bands in January and swarms forming by mid-February. Ground teams treated 4,000 ha. In **Saudi Arabia**, a local outbreak developed near Mecca where hopper bands formed and aerial and ground operations treated 1,800 ha. Breeding will continue on the Red Sea coast, causing locust numbers to increase and hopper bands and perhaps a few swarmlets are likely to form. The situation remained calm in **Yemen** where small-scale breeding was in progress on the Red Sea and Gulf of Aden coast, and in southeast **Egypt** where few locusts were reported.

**Eastern Region.** The situation remained calm and no locusts were reported during December. Light rain that fell for the second consecutive month in the Jaz Murian Basin of southeast **Iran** may allow ecological conditions to become favourable in February. 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 December 2014

**Although only light rain fell at times, conditions remained favourable for breeding along both sides of the Red Sea coast. Showers fell for a second consecutive month in the interior of southeast Iran.**

In the **Western Region**, dry conditions persisted throughout most of the region during December. No significant rain fell and temperatures were low in most areas. Nevertheless, small areas of green vegetation were present in the Ziz-Ghris Valley on the southern side of the Atlas Mountains in Morocco, in central Algeria near Adrar and in Libya near Ghat in the southwest and near Al Haruj in the centre of the country. Apart from these exceptions, ecological conditions remained unfavourable for breeding.

In the **Central Region**, light rain fell in some parts of the winter breeding areas along both sides of the Red Sea. In Sudan, light showers fell during the first two decades of the month along the coast between Port Sudan and the Eritrean border where ecological conditions remained favourable for breeding. In Eritrea, green vegetation was present on the central Red Sea coast near Sheib, the Akbanazouf Plains, south of Embere, north of Mersa Gulbub and on the northern coastal plains between Mehimet and Karora, and in Wadi Karora. Vegetation was also green south of Massawa in the northern part of the Ghelaelo Peninsula. In Egypt, light to moderate rain fell early in the month on the Red Sea coast near Shalatyn and Abu Ramad, and vegetation was green. In Saudi Arabia, light rain fell along parts of the central and southern coast of the Red Sea at times and ecological conditions were favourable for breeding. In Yemen, light rains fell during the first decade along parts of the Red Sea coast. In Oman, light rain may have fallen near the central coast northeast of Marmul while vegetation continued to dry out in the north. No rain fell and mainly dry conditions prevailed in the Horn of Africa.

In the **Eastern Region**, light to moderate showers fell in the Jaz Murian Basin in the interior of southeast



### Area Treated

Eritrea	4,070 ha (1-26 December)
Saudi Arabia	1,823 ha (December)
Sudan	11,951 ha (1-28 December)



### Desert Locust Situation and Forecast

( see also the summary on page 1 )

#### WESTERN REGION

##### **Mauritania**

###### • SITUATION

During the first two decades of December, a few scattered solitarious hoppers of all instars were seen northeast of Aguilal Faye (1827N/1444W). No locusts were seen during the third decade in the north near Zouerate (2244N/1221W) and near Bir Moghreïn (2510N/1135W), and in northern Trarza.

###### • FORECAST

*Isolated locusts may persist in the Aguilal Faye area. No significant developments are likely.*

##### **Mali**

###### • SITUATION

Although surveys were not carried out and no locusts were reported during December, local scouts indicated that small-scale breeding might have occurred in the northern Adrar des Iforas near Tessalit (2011N/0102E) where first to third instar hoppers mixed with immature and mature solitarious adults were seen.

###### • FORECAST

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

##### **Niger**

###### • SITUATION

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

###### • FORECAST

*Isolated adults may be present in parts of the Air Mountains where they are likely to persist in areas that remain green. No significant developments are likely.*

## Chad

### • SITUATION

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

### • FORECAST

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

### • FORECAST

*As temperatures warm up towards the end of the forecast period in the central and southern Sahara, low numbers of adults could appear in any areas that receive rainfall and breed on a small scale.*

## Morocco

### • SITUATION

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

### • FORECAST

*Low numbers of adults may appear south of the Atlas Mountains in the Draa and Ziz-Ghris valleys at the end of the forecast period and eventually breed on a small scale once temperatures increase and if rainfall occurs.*

## Libya

### • SITUATION

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

### • FORECAST

*Low numbers of adults may appear in the southwest if rainfall occurs and breed on a small scale once temperatures increase.*

## Tunisia

### • SITUATION

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

### • FORECAST

*No significant developments are likely.*

## CENTRAL REGION

### Sudan

### • SITUATION

In the summer breeding area, immature adults formed a few groups in the Baiyuda Desert, mature adults formed groups and laid eggs along the Nile southwest of Abu Hamed (1932N/3320E), and scattered immature and mature solitarious adults were present along the Atbara River and between Kassala (1527N/3623E) and Derudeb (1731N/3607E) in early December.

In the winter breeding area, adult groups and swarms continued to mature and lay eggs on the Red Sea coast between Bir Salalah (2034N/3701E) and Tokar (1827N/3741E) during the first half of December. Hatching first started south of Suakin (1906N/3719E) in the first decade and then occurred elsewhere along the coast from north of Port Sudan (1938N/3713E) to Tokar. This was followed by hatching on the southern plains near Aiterba (1753N/3819E) and the Eritrea border during the second decade. Consequently, hoppers formed groups and small bands that, by the last week, had reached fourth instar near Suakin and third instar near Aiterba. Adult groups and a few swarms continued to lay eggs near Aiterba until the end of the month. Control operations treated 11,951 ha on 1-28 December of which 9,000 ha were by air. In the northeast subcoastal areas, scattered solitarious adults were maturing in Wadi Oko/Diib between Tomala (2002N/3551E) and the Egypt border.

### • FORECAST

*Fledging will commence on the central and southern coastal plains about mid-January; thereafter, an increasing number of immature adult groups and small swarms are likely to form. If conditions remain favourable, the swarms could mature and another generation of breeding might commence at the end of the forecast period.*

### Eritrea

### • SITUATION

During December, first-generation breeding continued on the northern coast near Karora (1745N/3820E) and the Sudan border where laying and hatching occurred until mid-month, causing more



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hopper bands to form. On the central coast, first-generation hopper bands and adult groups formed as well as a few swarmlets. By the end of the month, a second generation of breeding had commenced and adults laid eggs in central coastal areas near Wekiro (1548N/3918E), Sheib (1551N/3903E), and the Akbanazouf Plains and on the northern coast near Mehimet (1723N/3833E) as well as on the plains to the south. A few swarms had formed and were laying eggs near Wekiro at the end the month. Control teams treated 4,070 ha on 1-26 December.

- **FORECAST**

*Second generation breeding will cause locust numbers to increase on the Red Sea coastal plains between Massawa and Karora where hatching and band formation will occur in January with new adult groups and swarms forming by mid-February. Smaller infestations may extend to Ghelaelo.*

### **Ethiopia**

- **SITUATION**

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

- **FORECAST**

*No significant developments are likely.*

### **Djibouti**

- **SITUATION**

No reports were received during December.

- **FORECAST**

*No significant developments are likely.*

### **Somalia**

- **SITUATION**

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

- **FORECAST**

*Low numbers of adults are likely to appear on the coastal plains in the northwest and breed on a small scale if rainfall occurs.*

### **Egypt**

- **SITUATION**

During December, scattered immature and mature solitarious adults were present in the Abraq area of the Red Sea Hills south of El Sheikh El Shazly (2412N/3438E) and along the eastern shore of Lake Nasser near Abu Simbel (2219N/3138E).

- **FORECAST**

*Small-scale breeding will cause locust numbers to increase slightly in areas that receive rainfall on the Red Sea coast and subcoastal areas in the southeast.*

### **Saudi Arabia**

- **SITUATION**

During December, local breeding occurred in the foothills of the Asir Mountains north of Mecca (2125N/3949E) where adult groups were seen copulating and laying eggs from the 3<sup>rd</sup> onwards. Hatching took place during the second and third weeks and a few small hopper groups and bands formed and reached third instar by the 23<sup>rd</sup>. Solitarious adults were maturing on the central Red Sea coast southeast of Qunfidah (1909N/4107E) throughout the month and, by the last week, a few mature groups had formed and laid eggs. On the northern coast, immature solitarious adults were present near Yenbo (2405N/3802E). No locusts were seen on the southern plains near Jizan (1656N/4233E). Control operations treated 1,823 ha during December of which 1,200 ha were by air.

- **FORECAST**

*Breeding will continue to cause locust numbers to increase on the Red Sea coast between Qunfidah and Yenbo where hatching will occur and groups of hoppers and adults, hopper bands and perhaps a few swarmlets are likely to form.*

### **Yemen**

- **SITUATION**

During December, low numbers of immature and mature solitarious adults persisted 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). Small-scale breeding occurred on the northern Red Sea coast and Gulf of Aden coast where low densities of solitarious hoppers of all instars were present in a few places.

- **FORECAST**

*Small-scale breeding will continue to cause locust numbers to increase slightly on the Red Sea and Gulf of Aden coastal plains.*

### **Oman**

- **SITUATION**

During December, no locusts were seen during surveys on the northern Batinah coast near Jamma (2333N/5733E) and Sohar (2421N/5644E), the Musandam Peninsula, and in the northern interior near Ibri (2314N/5630E).



- **FORECAST**

*Low numbers of adults may appear in the spring breeding areas on the Batinah coast at the end of the forecast period.*

**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**

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

- **FORECAST**

*Low numbers of adults are likely to appear on the southeast coast between Jask and Chabahar and in the Jaz Murian Basin of the interior during February. Once temperatures increase, small-scale breeding is expected to occur in areas of recent rainfall in Jaz Murian.*

### **Pakistan**

- **SITUATION**

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

- **FORECAST**

*Isolated adults may appear in coastal areas of Baluchistan at the end of the forecast period.*

### **India**

- **SITUATION**

No locusts were seen during surveys carried out in Rajasthan during December.

- **FORECAST**

*No significant developments are likely.*

### **Afghanistan**

- **SITUATION**

No reports received.

- **FORECAST**

*No significant developments are likely.*

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/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.

**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))
- **eLocust3 training videos.** A set of 15 introductory training videos are available on YouTube: [https://www.youtube.com/playlist?list=PLjxRk5CAwvG\\_0iFxfjZ5C2fLByF3jvhHOx](https://www.youtube.com/playlist?list=PLjxRk5CAwvG_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>)



## **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



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- **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

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

- **CRC.** Regional contingency planning workshop, Hurghada, Egypt (15-19 February)
- **CRC/SWAC.** 7<sup>th</sup> inter-regional workshop for Desert Locust Information Officers, Cairo (22-25 February)

**Cliff Ashall (24 February 1922 – 3 November 2014).** Mr. Ashall completed his degree after war service in the Royal Engineers in West Africa and Burma. He then joined Desert Locust Survey (DLS) and served in Eastern Africa and Arabia. After DLCO-EA was established, he returned to the UK where he worked at the Anti-Locust Research Centre (ALRC) / Centre for Overseas Pest Research (COPR) until he retired. 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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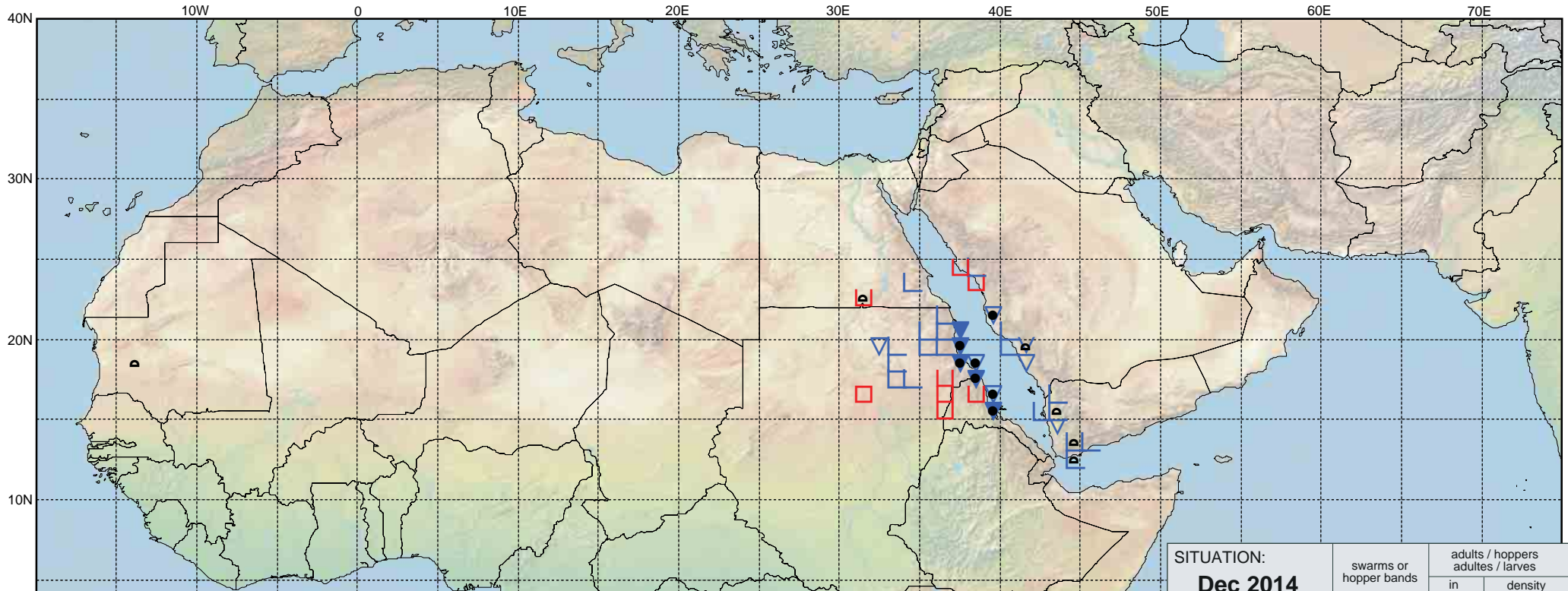
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# Desert Locust Summary

## Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU:	<b>15.02.15</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>Dec 2014</b> <b>déc 2014</b>	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)			