

warning level: **CAUTION**

# DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 446



**General Situation during November 2015  
Forecast until mid-January 2016**

(4.12.2015)

An outbreak developed in early November in western Mauritania as a result of unusually good rains during September and October. Ground control operations are in progress against small hopper groups and bands. A second generation of breeding will commence in December and locust numbers could escalate further. Breeding is also expected in Western Sahara, northern Mauritania and perhaps in western Algeria. Small-scale breeding occurred in northern Niger and scattered adults were reported in northern Mali. Low numbers of adults appeared in winter areas along both sides of the Red Sea where small-scale breeding will occur during the forecast period. Two cyclones caused heavy rains and flooding in southern Yemen and parts of northeast Somalia. Small-scale breeding is likely in northwest Somalia. The situation remained calm in Southwest Asia.

**Western Region.** An outbreak developed in western Mauritania as a result of unusually good rains during September and October. Egg-laying commenced in mid-September, and hoppers formed groups in late October and started fledging in early November, giving rise to groups of immature adults, some of which had matured by the end of the month. A second generation of breeding is likely to cause locust numbers to escalate further with hatching from mid-December onwards, followed by the formation of hopper groups and bands. Ground control operations treated nearly 3,000 ha. During November, scattered

adults appeared in the **Western Sahara** and northern Mauritania where breeding will cause locust numbers to increase in areas that received good rains in October. A similar situation is likely to extend into western **Algeria**. Scattered adults were seen in northeast **Morocco**. In the northern Sahel, small-scale breeding occurred in the Air Mountains of **Niger** and scattered adults were reported in northern **Mali**.

**Central Region.** The situation remained calm during November. So far, only scattered solitary adults have been detected in a few places of the winter breeding areas along the Red Sea coast in **Sudan**, **Saudi Arabia** and **Yemen**. Small-scale breeding will cause locust numbers to increase in these countries as well as in northern **Eritrea** and perhaps southeast **Egypt**. Unusually heavy rains, associated with two cyclones, fell in coastal and interior areas of southern **Yemen** and in northeast **Somalia**. Breeding conditions in Yemen are likely to remain favourable for up to six months but surveys are nearly impossible due to insecurity. Scattered adults are likely to appear in these areas as well as on the northwest coast of Somalia and breed on a small scale.

**Eastern Region.** The situation remained calm during November. No locusts were reported in the region and no significant developments are likely 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 are available on the Internet.

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### Weather & Ecological Conditions in November 2015

**Vegetation became green in Western Sahara and northern Mauritania from unusually heavy rains in September and October. Heavy rains fell in southern Yemen and parts of northern Somalia from two tropical cyclones. Vegetation was becoming green in winter breeding areas in the Central Region.**

In the **Western Region**, very little rain fell during November except for a few light showers in northwest Mauritania and in parts of central Algeria. As a result of the unusually good rains during September and October, annual vegetation was becoming green in sizeable areas of Western Sahara and in parts of northern Mauritania (Bir Moghreïn, Tamreiket and northeast of Ghallaman), the northwest (Inchiri) and the west (between Moudjeria, Akjoujt and Aguïal Faye). Green vegetation was also present near Illizi, Algeria. Small, localized areas of green vegetation persisted in the summer breeding areas in southern Mauritania (east of Nema), northern Mali (Timetrine, Tilemsi Valley, Adrar des Iforas, Tamesna), northern Niger (Tazerzait Plateau, Air Mountains), and northeast Chad (southeast of Fada).

In the **Central Region**, heavy rains fell in coastal and interior areas of southern Yemen as well as parts of northeast Somalia, causing flooding. The rains were associated with two tropical cyclones, Chapala (28 October - 4 November) and Megh (4-10 November), that developed due to the warmest waters on record in the Arabian Sea. As a result, vegetation was becoming green in many wadis in the interior of Shabwah and Hadhramaut and along the Gulf of Aden coast where it may remain favourable for up to six months. In northern Somalia, heavy rains from Megh fell near Bosaso in the northeast. Vegetation was becoming green east of Bosaso, on the plateau between Erigavo and Hargeisa, and on the northwest coast. Above-average rains are expected in these areas in the coming months due to a strong El Niño. Only a few light showers fell in parts of the winter breeding areas along the Red Sea coast in Eritrea (Sheib, Mehimet), Yemen and near Jizan in Saudi Arabia. Heavier rains fell on the northern coast of

Saudi Arabia between Masturah and Duba. Ecological conditions were improving for breeding in these areas as well as in Sudan (Aiterba Plains, Tokar, Wadi Oko/Diib) and parts of southeast Egypt.

In the **Eastern Region**, light rain fell in the western portion of the Jaz Murian Basin in southeast Iran at times during November and annual vegetation was becoming green in a few localized places. Vegetation was also becoming green in the Shooli Valley south of Turbat in southwest Pakistan.



### Area Treated

Mauritania 2,983 ha (Nov)



### Desert Locust Situation and Forecast

( see also the summary on page 1 )

#### WESTERN REGION

##### **Mauritania**

##### • SITUATION

During November, locust numbers increased as breeding continued in the west between N'Beika (1758N/1215W), Aguïal Faye (1827N/1444W) and Akjoujt (1945N/1421W) where solitary and *transiens* hoppers of all instars formed groups and small bands up to 1 ha in size at densities of 1-6 hoppers/m<sup>2</sup>. Fledging commenced early in the month and groups of immature solitary and *transiens* adults formed at densities up to 3,000 adults/ha. Other mature solitary adults from summer areas were present throughout the month. Breeding extended to Atar (2032N/1308W) where solitary hoppers and scattered mature adults were present. In the north, scattered mature solitary adults were seen near Zouerate (2244N/1221W) and Bir Moghreïn (2510N/1135W). In the southeast, scattered immature and mature solitary adults persisted northwest of Oualata (1717N/0701W). Ground teams treated 2,983 ha during November.

##### • FORECAST

*An increasing number of adults will form groups and mature in the west and northwest where a second generation of breeding is likely to cause locust numbers to escalate further with hatching from mid-December onwards, followed by the formation of hopper groups and bands. Breeding will also occur in Tiris-Zemmour where unusually heavy rains fell in October, causing locust numbers to increase there as well.*

## Mali

### • SITUATION

Scattered immature and mature solitary adults were reported on 14 November in a few wadis in the Adrar des Iforas near Tessalit (2011N/0102E).

### • FORECAST

*Low numbers of locusts are likely to be present and may persist in parts of Timetrine, Tilemsi Valley, and Adrar des Iforas.*

## Niger

### • SITUATION

During November, low numbers of solitary hoppers from small-scale breeding in October were present in the northern Air Mountains southwest of Iferouane (1905N/0824E) and in the southeast to the east of Timia (1809N/0846E) mixed with scattered immature solitary adults and a few mature adults, including one group of mature adults. Scattered immature solitary adults were also seen near Agadez (1658N/0759E).

### • FORECAST

*Low numbers of adults are expected to persist in parts of the Air Mountains. As vegetation dries out, a few small groups may form.*

## 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, isolated immature solitary adults were present in the extreme south near In Guezzam (1937N/0552E). No locusts were seen during surveys near Tamanrasset (2250N/0528E), Djanet (2434N/0930E), Illizi (2630N/0825E), In Salah (2712N/0229E) and Adrar (2753N/0017W).

### • FORECAST

*Scattered adults may appear in the west between Tindouf and Beni Abbes, in the central Sahara near*

*irrigated areas in the Adrar region, in runoff areas to the south and west of the Hoggar Mountains, and in the extreme south near the Mali border. Small-scale breeding could occur in these areas, especially in the west where unusually good rains fell in October.*

## Morocco

### • SITUATION

During November, immature and mature solitary adults, at densities up to 100 adults/ha, appeared in the south between Aousserd (2233N/1419W) and Tichla (2137N/1453W) while isolated immature adults were seen in the northeast near Bouarfa (3232N/0159W). No locusts were seen between Zag (2800N/0920W) and Bir Lahlou (2619N/0933W).

### • FORECAST

*An increasing number of adults are expected to appear and breed in areas of recent rainfall in the Western Sahara that could give rise to hopper groups.*

## Libya

### • SITUATION

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

### • FORECAST

*Isolated adults may appear in the southwest near Ghat and breed on a small scale in areas that received rainfall in September and October.*

## 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 November, low numbers of mature solitary adults were present on the western side of the Red Sea Hills near Haiya (1820N/3621E) and on the Red Sea coast near Tokar Delta. No locusts were seen elsewhere along the coast, west of the Red Sea Hills or in Wadi Oko/Diib between Tomala (2002N/3551E) and Sufiya (2119N/3613E).



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### • FORECAST

*Small-scale breeding will cause locust numbers to increase slightly along the Red Sea coastal plains and in Wadi Oko/Diib.*

### Eritrea

#### • SITUATION

No locusts were seen during surveys on the Red Sea coast between Sheib (1551N/3903E) and the Sudan border on 10-15 November.

#### • FORECAST

*Scattered adults are likely to appear on the Red Sea coastal plains and breed on a small scale, causing locust numbers to increase slightly between Sheib and Karora.*

### Ethiopia

#### • SITUATION

No locusts were seen during surveys in the eastern region near Dire Dawa (0935N/4150E) and Jijiga (0922N/4250E) during November.

#### • 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 surveys carried out on the northwest coast and escarpment between Berbera (1028N/4502E) and the Djibouti border on 19-21 November. No locusts were seen during a survey in the northeast between Gardo (0930N/4905E) and Las Koreh (1110N/4812E) in the last week of the month.

#### • FORECAST

*Scattered adults are likely to appear on the northwest coastal plains and breed on a small scale, causing locust numbers to increase slightly. Low numbers may also appear in parts of the northeast that received rains from cyclone Megh.*

### Egypt

#### • SITUATION

During November, no locusts were seen during surveys near Lake Nasser in the Abu Simbel (2219N/3138E), Garf Husein (2317N/3252E) and Allaqi (2238N/3315E) areas, on the Red Sea coast between Berenice (2359N/3524E) and the Sudan border, and in subcoastal areas near El Sheikh El Shazly (2412N/3438E) and Abraç (2323N/3451E).

#### • FORECAST

*Scattered adults are likely to appear on the Red Sea coastal plains and subcoastal areas between Shalatyn and Halaib, and breed on a small-scale if further rains fall.*

### Saudi Arabia

#### • SITUATION

During November, low numbers of immature solitary adults were present on the southern Red Sea coastal plains near Jizan (1656N/4233E). No locusts were seen elsewhere during surveys along the coast to Umm Lajj (2501N/3716E).

#### • FORECAST

*Scattered adults will persist near Jizan and appear elsewhere on the Red Sea coastal plains as far north as Daba, and breed on a small-scale in areas of recent rainfall.*

### Yemen

#### • SITUATION

During November, scattered immature solitary adults, mixed with a few mature and copulating adults, were seen during surveys on the Red Sea coast near Al Zuhrah (1541N/4300E) and from north of Bajil (1458N/4314E) to nearly Zabid (1410N/4318E). Some areas on the northern coastal plains of the Red Sea and the Gulf of Aden coast could not be surveyed due to insecurity.

#### • FORECAST

*Small-scale breeding will cause locust numbers to increase on the Red Sea coastal plains. Scattered adults are likely to appear along the Gulf of Aden coast and breed in areas that received heavy rainfall from cyclones Chapala and Megh.*

### Oman

#### • SITUATION

No locusts were seen during surveys on the Musandam Peninsula in November.

#### • 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**

No locusts were seen on the southeast coast near Jask (2540N/5746E) during November.

• **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**

No locusts were seen during surveys carried out in Rajasthan and Gujarat during November.

• **FORECAST**

*No significant developments are likely.*

**Afghanistan**

• **SITUATION**

No reports received.

• **FORECAST**

*No significant developments are likely.*



**Announcements**

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

**Locust reporting.** During calm (green) periods, countries should report at least once/month and send RAMSES data with a brief interpretation. During caution (yellow), threat (orange) and danger (red) periods, often associated with locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent at least twice/week within 48 hours of the latest survey. Affected countries are also encouraged to prepare decadal bulletins

summarizing the situation. All information should be sent by e-mail to the FAO/ECLo Desert Locust Information Service (eclol@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=PLf7Fc-oGpFHEdv1jAPaF02TCfpcnYoFQT>
- **RAMSESv4 training videos.** A set of basic training videos are available on YouTube: <https://www.youtube.com/playlist?list=PLf7Fc-oGpFHGyzXqE22j8-mPDhhGNq5So>
- **RAMSESv4 and eLocust3 updates.** Updates can be downloaded from <https://sites.google.com/site/rv4elocust3updates/home>
- **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



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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:

- **Pesticide Referee Group follow-up.** Recommendations of the Stakeholder Workshop on the Procurement and Supply of Pesticide for Locust Control, Rome (2-3 September) – Publications (Reports by Topic, Miscellaneous)
- **Current threats.** Chapala and Megh cyclones – Information (Current threats)
- **Seasonal forecast.** Desert Locust winter/spring forecast (Dec 2015 – May 2016) – Information (Current threats)

**Training videos.** See the new links above for the eLocust3 and RAMSESV4 training videos on YouTube.

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

- **EMPRES/WR.** 14<sup>th</sup> Liaison Officers Meeting, Nouakchott, Mauritania (7-11 December)
- **EMPRES/WR.** 11<sup>th</sup> Steering Committee Meeting, Nouakchott, Mauritania (14-15 December)



## 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

#### **RECESSION**

- period without widespread and heavy infestations by swarms.

#### **REMISSION**

- period of deep recession marked by the complete absence of gregarious populations.

#### **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.

#### **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.

## **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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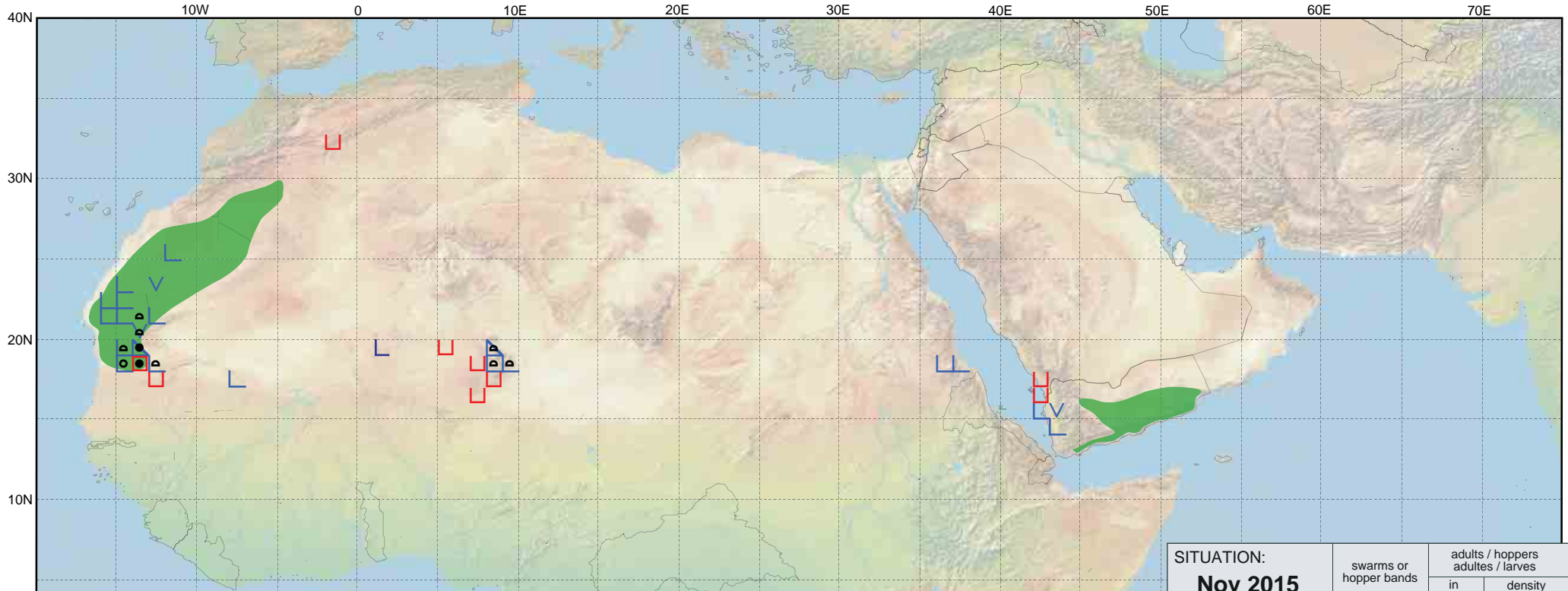
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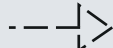
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# Desert Locust Summary

## Criquet pèlerin - Situation résumée



FORECAST TO: PREVISION AU:	<b>15.01.16</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 2015</b> <b>nov 2015</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)	