

warning level: **CAUTION** (Yemen)

# DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 420



**General Situation during September 2013  
Forecast until mid-November 2013**

(3 Oct 2013)

The Desert Locust situation remained worrisome in Yemen where hopper and adult groups, bands and swarms formed in the interior during September. Only limited control operations could be carried out due to insecurity and beekeeping. Small swarms will form during the forecast period in these areas and move to the Red Sea and Gulf of Aden coasts where adults have already arrived and laid eggs that hatched and hoppers formed groups and bands. Early breeding has also occurred on the central Red Sea coast in Saudi Arabia. Continued breeding caused locust numbers to increase in the northern Sahel between Mauritania and Chad. Small groups could form in some areas as vegetation dries out. A further increase is expected in western Mauritania where breeding will continue during the forecast period.

**Western Region.** The locust situation continued to remain calm during September. Nevertheless, good rains and small-scale breeding caused locust numbers to increase slightly in **Mauritania, Niger** and **Chad**. The situation in northern **Mali** is likely to be similar but this could not be confirmed due to insecurity and a lack of surveys. In Mauritania, locust adults shifted from the south and southeast to the west and northwest where breeding will occur during the forecast period, causing locust numbers to increase and a few small groups could form. Scattered adults may appear in the **Western Sahara**. Breeding will continue in October but decline thereafter in northern

Mali, Niger and Chad, and locusts will concentrate and could form a few very small groups as vegetation dries out.

**Central Region.** The situation remained calm during September except in **Yemen**. Continued breeding led to the formation of hopper and adult groups, bands and swarms in the interior of Yemen. Some of the adults moved to the winter breeding areas along the Red Sea and Gulf of Aden coastal plains and laid eggs that hatched and hoppers formed small groups and bands. Small-scale breeding also caused groups and a few small hopper bands to form on the central Red Sea coastal plains in **Saudi Arabia**. Low numbers of adults persisted in the summer breeding areas of **Sudan**, mainly between the Nile River and the Red Sea Hills. During the forecast period, a few groups could form in the interior of Sudan and move to the Red Sea coast where small-scale breeding will commence with the onset of the rains. In Yemen, small swarms will form in the interior and move to the Red Sea and Gulf of Aden coast where breeding will continue and hopper groups and bands are expected to form. Breeding will also continue on central Red Sea coast in Saudi Arabia.

**Eastern Region.** The situation remained calm during September. Low numbers of solitary adults persisted in a few places of the summer breeding areas along both sides of the Indo-Pakistan border. As the monsoon rains have ended, 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.

**Telephone:** +39 06 570 52420 (7 days/week, 24 hr)

**Facsimile:** +39 06 570 55271

**E-mail:** [eclo@fao.org](mailto:eclo@fao.org)

**Internet:** [www.fao.org/ag/locusts](http://www.fao.org/ag/locusts)

**Facebook:** [www.facebook.com/faolocust](http://www.facebook.com/faolocust)

**Twitter:** [twitter.com/faolocust](http://twitter.com/faolocust)



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### Weather & Ecological Conditions in September 2013

**Good rains fell in early September in the Sahel of West Africa and Sudan but declined thereafter as the ITCZ began its southward retreat. Good rains also fell in the winter breeding areas in Yemen. The monsoon ended in South-West Asia.**

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) began its southerly decline over the Sahel in West Africa in September. During the first decade, it remained 1 degree above its climatological mean position over Mauritania, Mali, and Niger for the fourth consecutive decade, resulting in above average rains. There was a sharp equatorward movement of the ITCZ at mid-month in the Sahel except over the Tamesna Plains on both sides of the Mali-Niger border. Good rains fell in southern and western Mauritania, southern Tamesna in eastern Mali, in Tamesna, Air Mountains and central areas of Niger, and in central and northeast Chad (south of Kalait). Consequently, ecological conditions remained unusually favourable over large parts of the summer breeding areas. Good rains also fell in northwest Mauritania, extending to the Western Sahara where ecological conditions will improve for breeding. Light rains fell in western Algeria and parts of the Hoggar Mountains.

In the **Central Region**, the Inter-Tropical Convergence Zone (ITCZ) commenced its seasonal southward movement over Sudan during September. Consequently, light to moderate rains fell from Darfur to Kassala south of Mellit, Hamrat Esh Sheikh, Abu Uruq, and Derudeb. Ecological conditions remained favourable for breeding in these areas as well as in the western lowlands of Eritrea. In the winter breeding areas, good rains fell along the Red Sea coastal plains between Lith, Saudi Arabia to Mocha, Yemen. Although very little rain fell in the interior of Yemen, conditions remained favourable for breeding in runoff areas. Light to moderate rains fell in eastern Ethiopia, extending to adjacent areas of the plateau in northwest Somalia in early September.

In the **Eastern Region**, very little rain fell during September in the summer breeding areas along both

sides of the Indo-Pakistan border as the monsoon ended.



### Area Treated

Yemen 5,000 ha (September)



### Desert Locust Situation and Forecast

( see also the summary on page 1 )

#### WESTERN REGION

##### **Mauritania**

###### • SITUATION

During September, locust numbers increased in the western part of the country from hatching and as more adults arrived from the south and southeast. Scattered immature and mature solitary adults were present between Rkiz (1658N/1514W), Tasiast (2034N/1531W), Atar (2032N/1308W), Tidjikja (1833N/1126W) and Magta Lahjar (1730N/1305W). Adults laid eggs throughout this area and low numbers of solitary hoppers of all instars were present. In the southeast, locust numbers declined and only scattered immature and mature solitary adults were seen between Aioun El Atrous (1639N/0936W) and Nema (1636N/0715W).

###### • FORECAST

*Locust numbers will increase in the west, northwest, and centre as breeding continues and locusts arrive from the south and southeast. There is a low to moderate risk that small groups could form in some places.*

##### **Mali**

###### • SITUATION

During September, no locusts were seen by surveys carried out in central and western areas between Kayes (1426N/1128W) and Hombori (1516N/0140W).

###### • FORECAST

*Small-scale breeding will cause locust numbers to increase in the Adrar des Iforas, Tilemsi Valley and Tamesna. As vegetation dries out, locusts could concentrate and perhaps form a few small groups.*

##### **Niger**

###### • SITUATION

During September, scattered immature and mature solitary adults that were present in the southeastern Air Mountains in August spread to other parts of the Air, reaching north of Iferouane (1905N/0824E). Similar populations were also present

in the Tamesna between Tassara (1650N/0550E) and Arlit (1843N/0721E), south of Agadez (1658N/0759E), near Tanout (1458N/0852E), and southwest of Termit Massif (1600N/1120E). Small-scale breeding was underway in all of these areas and a few small hopper groups formed south of Agadez. Scattered mature solitary adults were seen in the southwest near Filingué (1421N/0319E).

• **FORECAST**

*Small-scale breeding will cause locust numbers to increase in Tamesna and in the pasture areas between Tahoua and Tanout, parts of the Air, and perhaps near Filingué. As vegetation dries out, locusts could concentrate and perhaps form a few small groups.*

**Chad**

• **SITUATION**

During September, isolated immature and mature solitary adults persisted in the centre and northeast between Salal (1448N/1712E), Kalait (1550N/2054E) and Fada (1714N/2132E). Small-scale breeding occurred to the southeast of Salal and near Fada where isolated solitary hoppers were present.

• **FORECAST**

*Small-scale breeding will cause locust numbers to increase in the northern parts of Kanem and Batha, in Biltine and in the northeast. As vegetation dries out, locusts could concentrate and perhaps form a few small groups.*

**Senegal**

• **SITUATION**

No reports were received during September.

• **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 September, no locusts were seen in the south near Tamanrasset (2250N/0528E) and on the border of Mali near Bir Bou Mokhtar (2119N/0057E).

• **FORECAST**

*Small-scale breeding may cause locust numbers to increase slightly in the south near Tamanrasset and the border of Mali and Niger. Low numbers of locusts are likely to persist in the Adrar area.*

**Morocco**

• **SITUATION**

No reports were received during September.

• **FORECAST**

*Low numbers of solitary adults are likely to appear in southern areas of the Western Sahara and breed on a small-scale if rainfall occurs.*

**Libya**

• **SITUATION**

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

• **FORECAST**

*No significant developments are likely.*

**Tunisia**

• **SITUATION**

No reports were received during September.

• **FORECAST**

*No significant developments are likely.*

**CENTRAL REGION**

**Sudan**

• **SITUATION**

During September, low numbers of immature and mature solitary adults persisted in the summer breeding areas northwest and east of Khartoum, in the Northern Region between Dongola (1910N/3027E), Wadi Halfa (2147N/3122E), Selima Oasis (2122N/2119E), in the River Nile near Abu Hamed (1932N/3320E) and Berber (1801N/3400E), and on the western side of the Red Sea Hills between Kassala (1527N/3623E) and Sinkat (1855N/3648E). Small-scale breeding occurred in the Kassala and Red Sea states.

In the winter breeding areas of the northeast, mature adults appeared in Wadi Oko near Tomala (2002N/3551E) and laid eggs that hatched and solitary hoppers were present.

• **FORECAST**

*As vegetation dries out, locusts may form small groups between the Nile and the Red Sea Hills, and move to the Red Sea coastal plains and subcoastal areas, and lay eggs with the onset of the rains.*

**Eritrea**

• **SITUATION**

During September, no locusts were seen on the Red Sea coastal plains between Massawa



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(1537N/3928E) and the Sudanese border, and in the western lowlands near Teseney (1506N/3639E).

- **FORECAST**

*Small-scale breeding is likely to be in progress in the western lowlands north of Teseney, causing locust numbers to increase. Surveys are recommended.*

### **Ethiopia**

- **SITUATION**

During September, scattered mature solitary adults were seen at a few places in the Afar Region.

- **FORECAST**

*No significant developments are likely.*

### **Djibouti**

- **SITUATION**

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

- **FORECAST**

*No significant developments are likely.*

### **Somalia**

- **SITUATION**

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

- **FORECAST**

*No significant developments are likely.*

### **Egypt**

- **SITUATION**

During September, no locusts were seen during surveys carried out on the Red Sea coast between Shalatyn (2308N/3535E) and Halaib (2213N/3638E), and near Marsa Alam (2504N/3454E); along both sides of Lake Nasser in the Allaqi area and near Abu Simbel (2219N/3138E), Tushka (2247N/3126E), and Aswan (2405N/3256E); and, in the Sh. Oweinat (2219N/2845E) area.

- **FORECAST**

*Low numbers of adults may start to appear on the Red Sea coast south of Shalatyn by the end of the forecast period.*

### **Saudi Arabia**

- **SITUATION**

During September, local breeding occurred on the central Red Sea coastal plains in one area southeast of Qunfidah (1909N/4107E) where low numbers of

late instar solitary hoppers and immature adults were present. Some of the hoppers and adults were forming small groups, and a few small hopper bands were reported.

- **FORECAST**

*Small-scale breeding will cause locust numbers to increase on the central Red Sea coastal plains in areas of recent rainfall near Lith, Qunfidah and Jizan. A few adult groups could form.*

### **Yemen**

- **SITUATION**

During September, surveys confirmed that breeding has caused small groups of hoppers and adults, hopper bands and a few small swarms to form in the western part of the interior from north of Al Hazm (1609N/4447E) to Marib (1527N/4519E), in Shabwah near Bayhan (1452N/4545E), west of Al Abr (1608N/4714E), in Wadi Hadhramaut, and on the plateau between Hadhramaut and Thamud (1717N/4955E). About 200 small hopper bands, at densities up to 300 hoppers/m<sup>2</sup>, were reported between Sayun (1559N/4844E) and Thamud.

In the winter breeding areas, hatching occurred on the Tihama coastal plains of the Red Sea and hoppers formed small groups and bands in the north near Suq Abs (1600N/4312E) while hoppers mixed with immature solitary adults were present on the central coast. There was an unconfirmed report of a small mature swarm near Suq Abs arriving from the interior on the 6<sup>th</sup>. Immature and mature solitary adults appeared on the Gulf of Aden coastal plains between Am Rija (1302N/4434E) and Ahwar (1333N/4644E) and Bir Ali (1401N/4820E) where small-scale breeding was in progress. Ground teams treated 5,000 ha in September

- **FORECAST**

*Locust numbers will decline in the interior as breeding ends and small groups and swarms form that will move to the Red Sea and Gulf of Aden coastal plains. Breeding will occur along the coast, causing locust numbers to increase and groups and small bands to form.*

### **Oman**

- **SITUATION**

During September, an individual mature solitary adult was seen on the Batinah coast at Al Musanaah (2332N/5737E). No locusts were present on the Musandam Peninsula, and in the northern interior between Ibri (2314N/5630E) and Nizwa (2255N/5731E), and southeast of Adam (2223N/5731E).

- **FORECAST**

*No significant developments are likely.*

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

• **FORECAST**

*No significant developments are likely.*

**EASTERN REGION**

**Iran**

• **SITUATION**

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

• **FORECAST**

*No significant developments are likely.*

**Pakistan**

• **SITUATION**

During September, isolated mature solitary adults persisted in the Cholistan Desert along the Indian border southeast of Rahimyar Khan (2822N/7020E). No locusts were seen in the Khairpur and Tharparkar Deserts.

• **FORECAST**

*Locust numbers will decline in the summer breeding areas of Cholistan and Tharparkar. No significant developments are likely.*

**India**

• **SITUATION**

During September, isolated mature solitary adults persisted in Rajasthan at a few places along the Pakistan border west of Bikaner (2801N/7322E) where egg-laying was seen, and west of Jaisalmer (2652N/7055E). Isolated immature and mature adults were also seen northwest and north of Bikaner.

• **FORECAST**

*Although limited breeding may occur, locust numbers will decline in Rajasthan and Gujarat as vegetation dries out. 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/ECLo Desert Locust Information Service (ecllo@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))
- **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>)
- **FAOLOLUST 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://>)

 **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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[www.facebook.com/faolocust](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:

- **Current threats.** Information section

**eLocust3.** A demonstration version is available for viewing and downloading at Slideshare in:

English: <http://www.slideshare.net/FAOLocust/elocust3-apreviewenglishversion>

French: <http://www.slideshare.net/FAOLocust/elocust3-a-preview-french-version>

Arabic: <http://www.slideshare.net/FAOLocust/elocust3-apreview-arabicversion>

**Greenness maps.** Dynamic maps of green vegetation evolution every decade can now be downloaded from Columbia University's IRI (USA) website: [http://iridl.ldeo.columbia.edu/maproom/Food\\_Security/Locusts/Regional/greenness.html](http://iridl.ldeo.columbia.edu/maproom/Food_Security/Locusts/Regional/greenness.html)

**2013 events.** The following activities are scheduled or planned:

- **SWAC.** Desert Locust Contingency Planning regional workshop, 13-15 October, Tehran (Iran)
- **EMPRES/WR.** 12<sup>th</sup> Liaison Officer meeting, 8-12 December, Algiers (Algeria)
- **EMPRES/WR.** 9<sup>th</sup> Steering Committee meeting, 13 December, Algiers (Algeria)



## 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.



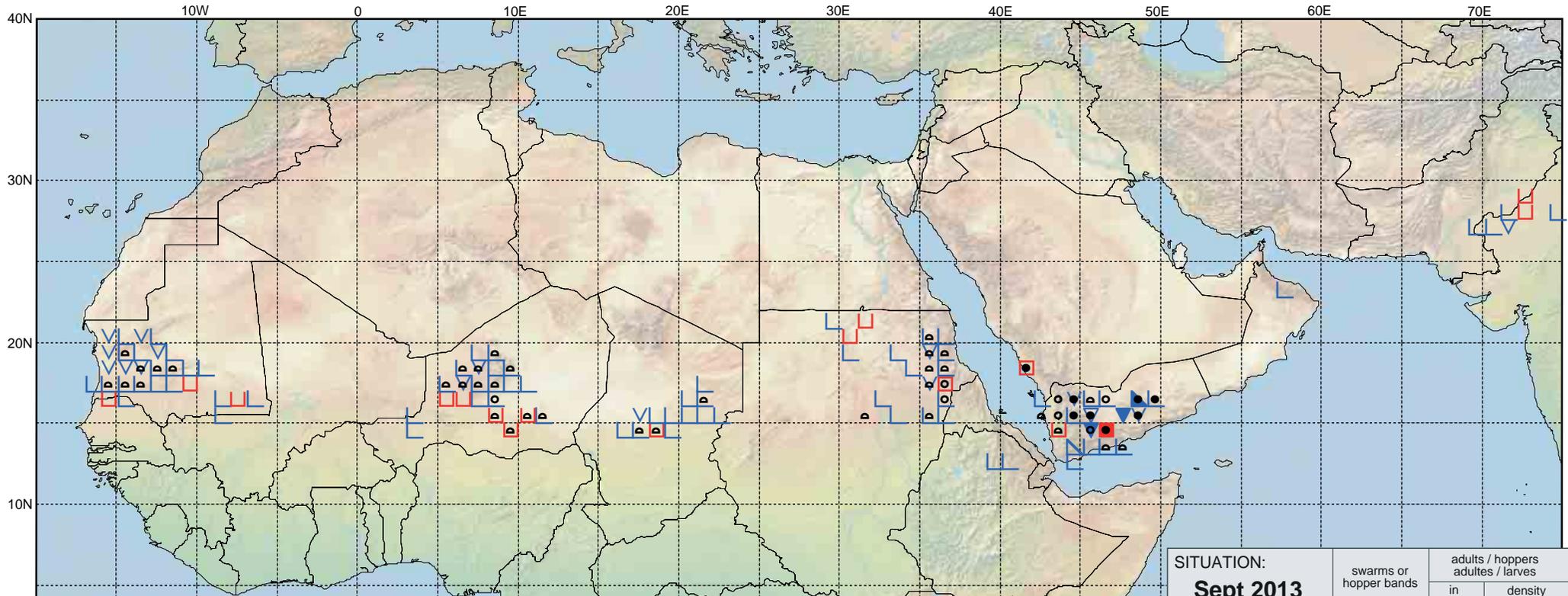
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# Desert Locust Summary

## Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU:	<b>15.11.13</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>Sept 2013</b> <b>sept 2013</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)			