



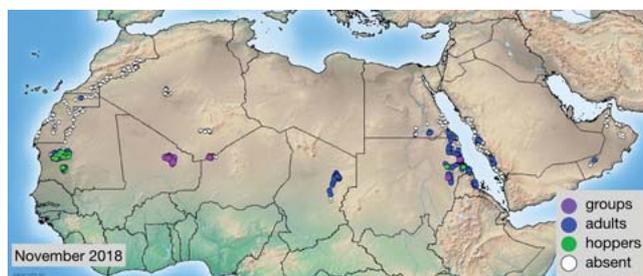
# Desert Locust Bulletin

## General situation during November 2018 Forecast until mid-January 2019

### WESTERN REGION: CALM

**SITUATION.** Small-scale breeding occurred in western **Mauritania**, northern **Mali** and **Niger**, and southern **Algeria** while low numbers of adults persisted in **Chad**. Limited control operations were carried out in southern Algeria against a few groups.

**FORECAST.** Breeding will continue in northwest **Mauritania** where a few small groups may form. Additional adults may appear in northern Mauritania and **Western Sahara**. Low numbers of adults may persist in northern **Mali**, northern **Niger** and southern **Algeria**.



### The Desert Locust situation continued to remain calm during November

In the Central Region, adults and a few small groups moved from the summer breeding area in eastern Sudan to the Red Sea coastal plains and northeastern subcoastal areas of Sudan. Low numbers of adults were present on the coast of Eritrea and Saudi Arabia. As good rains fell along both sides of the Red Sea, small-scale breeding was already underway in Eritrea and commenced during the last week in Sudan. Local breeding also occurred along the edge of the Empty Quarter in southern Oman where good rains fell in October from Cyclone Luban. In the Western Region, small-scale breeding caused locust numbers to increase slightly in western Mauritania, northern Mali and Niger, and southern Algeria near the Niger border. Groups formed in northeast Mali and southern Algeria, and ground teams treated 130 ha in southern Algeria. A few residual summer-bred populations of solitary adults remained in northeast Chad. During the forecast period, small-scale breeding will cause locust numbers to increase on the coastal plains along both sides of the Red Sea from southeast Egypt to central Eritrea and from northern Saudi Arabia to southwest Yemen. Small-scale breeding may also occur along the Gulf of Aden coastal plains in southern Yemen and northwest Somalia if more rains fall. Limited breeding may continue in southern Oman. Small-scale breeding is also likely to continue in Mauritania and may extend to the north of the country and to adjacent areas of Western Sahara, causing locust numbers to increase.

### CENTRAL REGION: CALM

**SITUATION.** Locust numbers increased along the Red Sea coast in **Sudan**, **Eritrea** and **Saudi Arabia**, and small-scale breeding commenced in Sudan. Local breeding occurred in southern **Oman** in areas that received good rain from Cyclone Luban.

**FORECAST.** Small-scale breeding will continue in **Sudan** and **Eritrea**, and is expected to extend to southeast **Egypt**, **Saudi Arabia** and **Yemen**, and perhaps the Gulf of Aden coast of southern Yemen and northwest **Somalia**, causing locust numbers to increase in all of these areas.

### EASTERN REGION: CALM

**SITUATION.** No locusts were reported.  
**FORECAST.** No significant developments are likely.

The FAO Desert Locust Bulletin is issued every month by the Desert Locust Information Service (DLIS) at FAO HQ in Rome, Italy. DLIS continuously monitors the global Desert Locust situation, weather and ecology to provide early warning based on survey and control results from affected countries, combined with remote sensing, historical data and models. The bulletin is supplemented by Alerts and Updates during periods of increased Desert Locust activity. Products are distributed by e-mail and Internet.

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## Weather & Ecological Conditions in November 2018

Ecological conditions were favourable for breeding along both sides of the Red Sea, in western Mauritania and in parts of Morocco and Algeria.

### WESTERN REGION

Although no significant rains fell in the region during November, ecological conditions remained favourable for breeding in western Mauritania between Akjoujt and Chinguetti and in the north between Zouerate and Bir Moghreïn. In Morocco, breeding conditions were favourable along the southern side of the Atlas Mountains and were improving throughout the Western Sahara. Conditions remained favourable in Algeria in the Adrar Valley and near Tamanrasset but were drying out in the extreme south along the Niger border. In the Sahel, conditions continued to dry out in all areas but remained green in a few places on the Tamesna Plains of northern Niger and near Fada in northeast Chad.

### CENTRAL REGION

Good rains fell at times in parts of the winter breeding areas along both sides of the Red Sea in November. In Egypt, light to moderate rains fell on the coast between Marsa Alam and the Sudanese border in early November, causing flooding in some places. Consequently, breeding conditions started to improve on the coastal plains. In Sudan, breeding conditions were favourable in most coastal areas from Port Sudan to the Eritrean border as well as in subcoastal areas of the northeast in Wadi Oko/Diib where light rains fell at times. In Eritrea, light to moderate rains fell on the central and northern coastal plains and breeding conditions were favourable. In Saudi Arabia, breeding conditions were favourable in most areas along a 1,000 km stretch of coast from the Yemeni border north to beyond Yenbo. Heavy rains fell in the Jeddah area at times. Conditions were less favourable on the Red Sea and Gulf of Aden coasts of Yemen and on the northwest coastal plains in northern Somalia due to a lack of rain during November. In Oman, breeding conditions remained favourable along the edge of the Empty Quarter in the southern province of Dhofar as a result of rains from Cyclone Luban in October.

### EASTERN REGION

No significant rains fell, and dry conditions prevailed throughout the region in November.



## Area Treated

Algeria 130 ha (November)



## Desert Locust Situation and Forecast

### WESTERN REGION

#### MAURITANIA

##### • SITUATION

During November, small-scale breeding continued in western areas to the north of Moudjeria (1752N/1219W) and between Akjoujt (1945N/1421W) and Oujeft (2003N/1301W) where solitary and *transiens* hoppers of all instars mixed with mainly mature solitary adults at densities up to 400 adults/ha. Egg-laying continued in some places during the month and hatchling density reached 60 hoppers/m<sup>2</sup> at mid-month in a few sites but declined thereafter. No locusts were seen further north between Atar (2032N/1308W) and Bir Moghreïn (2510N/1135W).

##### • FORECAST

*Small-scale breeding will continue in the northwest between Akjoujt, Oujeft and Atar, causing locust numbers to increase slightly. There is a low risk that a few small groups may form in any areas that start to dry out. Limited breeding could occur in the north if temperatures remain warm.*

#### MALI

##### • SITUATION

Scattered immature and mature solitary adults at densities of 400–700 adults/ha mixed with solitary hoppers were seen during surveys carried out from 31 October to 4 November in the northeast between Aguelhoc (1927N/0052E) and Ti-n-kar (1926N/0022W). Adults were seen copulating. Drying vegetation caused some of the hoppers and adults to concentrate and form small groups. A few days later, locals reported hopper concentrations and groups northeast of Ti-n-kar at Tacharak (1932N/0016W).

##### • FORECAST

*Low numbers of locusts are likely to persist in Timetrine and the Adrar des Iforas.*

#### NIGER

##### • SITUATION

During November, scattered solitary hoppers of all instars and immature and mature solitary adults at densities of 5–400 adults/ha were present on the Tamesna Plains near In Abangharit (1754N/0559E) and further north near the Algerian border.

##### • FORECAST

*Low numbers of locusts are likely to persist in the Air Mountains.*

## CHAD

### • SITUATION

During November, isolated maturing and mature solitary adults were present in the northeast near Fada (1714N/2132E) and to a lesser extent further south towards Kalait (1550N/2054E) and Arada (1501N/2040E). Copulating adults were seen at one place west of Fada on the 20<sup>th</sup>.

### • FORECAST

*No significant developments are likely.*

## SENEGAL

### • SITUATION

No locust activity was reported 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, small groups of solitary and *transiens* hoppers of all instars, immature and mature solitary adults, including one group, were present in the extreme south near In Guezzam (1937N/0552E) and the Niger border where breeding had occurred in October. Copulating adults were seen at one place on the 3<sup>rd</sup>. Ground teams treated 130 ha. No locusts were seen west of Tamanrasset (2250N/0528E) and in the Adrar Valley (2753N/0017W) of the Central Sahara.

### • FORECAST

*Low numbers of adults may persist in a few places of the extreme south.*

## MOROCCO

### • SITUATION

During November, no locusts were seen during surveys conducted along the southern side of the Atlas Mountains and throughout Western Sahara except for isolated mature solitary adults at one place in W. Sakia El Hamra near Haouza (2707N/1112W).

### • FORECAST

*Isolated adults may appear in Western Sahara and breed on a small scale if rainfall occurs. Low numbers of adults may be present in a few places south of the Atlas Mountains along W. Draa, W. Ziz-Ghris and in the northeast.*

## LIBYA

### • SITUATION

No locust activity was reported during October. No reports

were received in November.

### • FORECAST

*Low numbers of adults may be present and persist in areas of recent rainfall near Ghadames and Ghat. Small-scale breeding could occur if more rains fall.*

## TUNISIA

### • SITUATION

No locust activity was reported during November.

### • FORECAST

*No significant developments are likely.*

## CENTRAL REGION

### SUDAN

### • SITUATION

In early November, remnants of summer-bred mature solitary adults were present on the western side of the Red Sea Hills near Haiya (1820N/3621E) and at least one group formed southwest of Derudeb (1731N/3607E). As the month progressed, the adults moved to winter breeding areas along the Red Sea coast between Eit (2009N/3706E) and Suakin (1906N/3719E), the Tokar Delta (1827N/3741E), and the southern coast between Aiterba (1753N/3819E) and the Eritrean border as well as to subcoastal areas of Wadi Oko/Diib in the northeast. Several groups of mature adults were seen copulating on the coast near Suakin while solitary adults were laying eggs in W. Oko near Tomala (2002N/3551E), on the central coast south of Suakin and on the southern coast. Hatching commenced during the last week in Tokar Delta.

### • FORECAST

*Small-scale breeding will continue in Wadi Oko/Diib and along the Red Sea coast, causing locust numbers to increase.*

## ERITREA

### • SITUATION

In early November, an increasing number of mainly isolated immature solitary adults were detected on the central Red Sea coastal plains between Wekiro (1548N/3918E) and Mersa Gulbub (1633N/3908E) where copulating adults were seen at one place. Isolated mature solitary adults were present further north between Mehimet (1723N/3833E) and the Sudanese border. By the end of the month, isolated third to fourth instar solitary hoppers were present in the north and hatching had commenced in central areas near Sheib (1551N/3903E).

### • FORECAST

*Small-scale breeding will increase and continue on the central and northern coastal plains in areas of recent rainfall and runoff, causing locust numbers to increase slightly.*

## ETHIOPIA

### • SITUATION

No surveys were carried out and no locusts were reported in

November.

• FORECAST

*Low numbers of adults may be present in the railway area of Dire Dawa and perhaps on the plateau near Jijiga.*

## DJIBOUTI

• SITUATION

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

• FORECAST

*No significant developments are likely.*

## SOMALIA

• SITUATION

No reports were received in November.

• FORECAST

*Small-scale breeding will occur on the northwest coastal plains if rains fall during the forecast period.*

## EGYPT

• SITUATION

During November, isolated immature and mature solitary adults were seen on the eastern side of Lake Nasser in the W. Allaqi (2236N/3318E) area, in subcoastal areas of the Red Sea along W. Diib and adjacent wadis, and on the coastal plains between Abu Ramad (2224N/3624E) and Shalatyn (2308N/3535E). No locusts were seen further north along the coast to Marsa Alam (2504N/3454E) or in cropping areas on the western side of Lake Nasser near Tushka (2247N/3126E) and Abu Simbel (2219N/3138E).

• FORECAST

*Small-scale breeding will cause locust numbers to increase slightly along the Red Sea coast and adjacent subcoastal areas between Shalatyn and the Sudanese border.*

## SAUDI ARABIA

• SITUATION

During November, low numbers of immature and mature solitary adults were present north of Mecca (2125N/3949E) and near Qunfidah (1909N/4107E). No locusts were seen elsewhere along the Red Sea coastal plains between the Yemeni border and Umm Lajj (2501N/3716E).

• FORECAST

*Small-scale breeding will occur in recent areas of rainfall on the Red Sea coastal plains, causing locust numbers to increase slightly.*

## YEMEN

• SITUATION

No reports were received in November.

• FORECAST

*Scattered locusts are almost certainly present along parts of the Red Sea coastal plains. Small-scale breeding will occur in any areas that receive rains. Scattered adults may*

*be present in the eastern region where small-scale breeding could occur in areas that received good rains from Cyclone Luban.*

## OMAN

• SITUATION

During November, small-scale breeding continued near the edge of the Empty Quarter in the southern province of Dhofar at Marsawdad (1914N/5421E) where scattered adults were seen copulating on the 6<sup>th</sup>. This area had received good rains from Cyclone Luban in October. No locusts were seen in the northern interior, on the Batinah coast and the Musandam Peninsula.

• FORECAST

*Small-scale breeding is likely to continue in a few areas of Dhofar and near the edge of the Empty Quarter that received good rains from Cyclone Luban.*

## BAHRAIN, IRAQ, ISRAEL, JORDAN, KENYA, KUWAIT, LEBANON, PALESTINE, QATAR, SOUTH SUDAN, SYRIA, TANZANIA, TURKEY, UAE AND UGANDA

• FORECAST

*No significant developments are likely.*

## EASTERN REGION

### IRAN

• SITUATION

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

• FORECAST

*No significant developments are likely.*

### PAKISTAN

• SITUATION

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

• FORECAST

*No significant developments are likely.*

### INDIA

• SITUATION

No locusts were seen in Rajasthan and Gujarat during November.

• FORECAST

*No significant developments are likely.*

### AFGHANISTAN

• SITUATION

No reports received.

• FORECAST

*No significant developments are likely.*



## Announcements

### 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 bulletins. 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

**Calm (green).** Countries should report at least once/month and send RAMSES data with a brief interpretation.

**Caution (yellow), threat (orange) and danger (red).**

During 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.

**Bulletins.** Affected countries are encouraged to prepare decadal and monthly bulletins summarizing the situation.

**Reporting.** All information should be sent by e-mail to the FAO/ECLO Desert Locust Information Service (eclo@fao.org). Reports received by the first two days of the new month will be included in the FAO Desert Locust Bulletin for the current month; otherwise, they will not appear until the following month. Reports should be sent even if no locusts were found or if no surveys were conducted.

### Calendar

The following activities are scheduled or planned:

- **SWAC.** 31<sup>st</sup> Session, New Delhi, India (11–13 December)
- **CRC.** 31<sup>st</sup> Session, Amman, Jordan (17–21 February 2019)
- **CRC/SWAC.** 11<sup>th</sup> Interregional workshop for Desert Locust Information Officers, Addis Ababa, Ethiopia (11–15 March 2019) [tbc]
- **CRC.** 6<sup>th</sup> Regional aerial training course (March 2019) [tbc]
- **DLCC.** 41<sup>st</sup> Session (postponed to 2019)



## 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

**Moderate**

- 21–50 mm

**Heavy**

- more than 50 mm

**Summer rains and breeding areas**

- July–September/October
- Sahel of West Africa, Sudan, western Eritrea; Indo-Pakistan border

**Winter rains and breeding areas**

- October–January/February
- Red Sea and Gulf of Aden coasts; northwest Mauritania, Western Sahara

**Spring rains and breeding areas**

- February–June/July
- Northwest Africa, Arabian Peninsula interior, Somali plateau, Iran/Pakistan border

### Other reporting terms

**Breeding**

- The process of reproduction from copulation to fledging

**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: Benin, Burkina Faso, Cameroon, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Nigeria, Sierra Leone and Togo

### **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, Lebanon, Palestine, Qatar, South Sudan, Syria, Tanzania, Turkey, UAE and Uganda

### **Eastern**

- Locust-affected countries in South-West Asia: Afghanistan, India, Iran and Pakistan.



**FAO Locust Watch.** Information, maps, activities, publications, archives, FAQs, links  
<http://www.fao.org/ag/locusts>

**FAO Desert Locust regional commissions.** Western Region (CLCPRO), Central Region (CRC), South-West Asia (SWAC)  
<http://www.fao.org/ag/locusts>

**IRI 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)

**IRI 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)

**NASA WORLDVIEW.** Satellite imagery in real time  
<https://worldview.earthdata.nasa.gov>

**Windy.** Real time rainfall, winds and temperatures for locust migration  
<http://www.windy.com>

**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.** Installer, updates, videos, inventory and support  
<https://sites.google.com/site/rv4elocust3updates/home>

**FAOLocust Twitter.** The very latest updates posted as tweets  
<http://www.twitter.com/faolocust>

**FAOLocust Facebook.** Information exchange using social media  
<http://www.facebook.com/faolocust>

**FAOLocust Slideshare.** Locust presentations and photos  
<http://www.slideshare.net/faolocust>

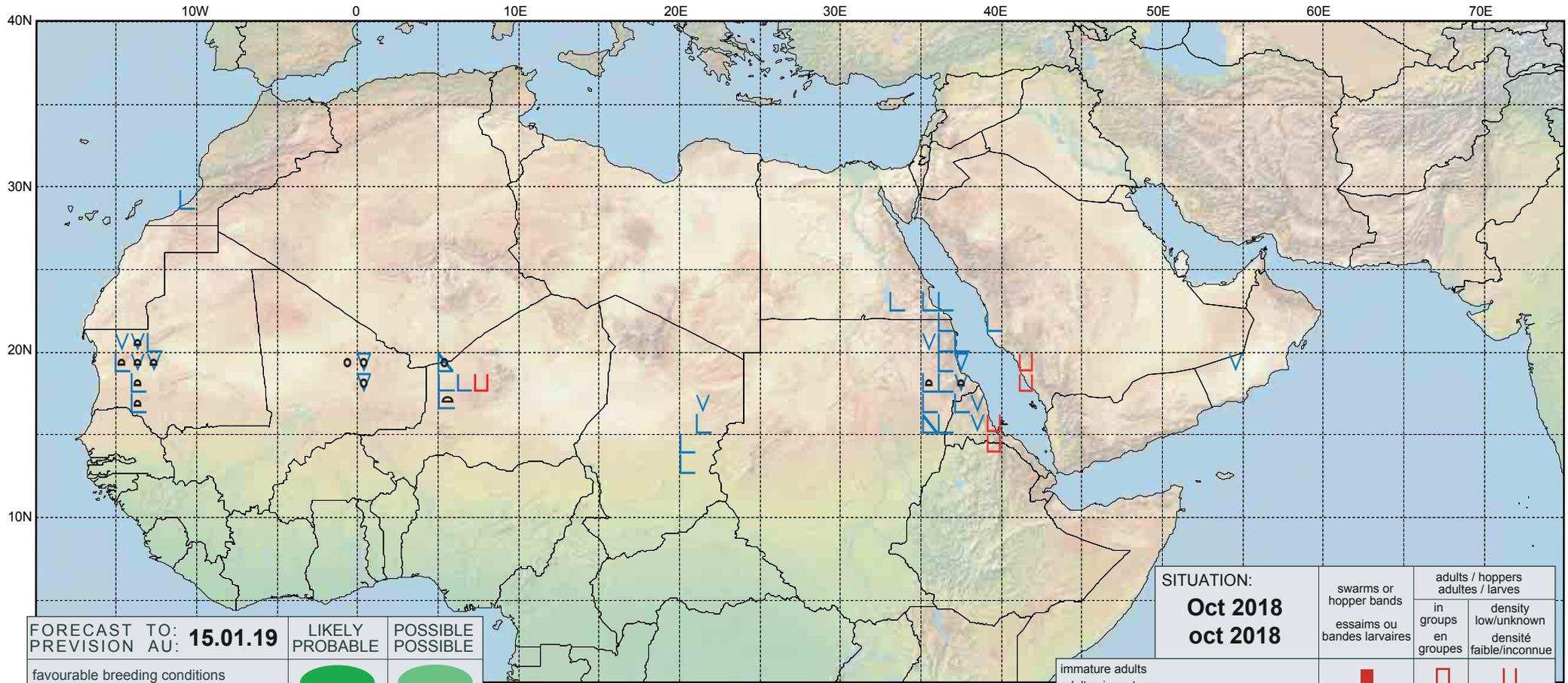
**eLERT.** Online database of resources and technical specifications for locust emergencies  
<http://sites.google.com/site/elertsite>



# Desert Locust Summary

## Criquet pèlerin - Situation résumée

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FORECAST TO:  
PREVISION AU: **15.01.19**

LIKELY PROBABLE 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:  
**Oct 2018**  
**oct 2018**

	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)			