



## Desert Locust Bulletin

General situation during December 2018  
Forecast until mid-February 2019

### WESTERN REGION: CALM

**SITUATION.** Small-scale breeding occurred in northwest **Mauritania**, northern **Mali** and **Niger**, and southern **Algeria**. A few groups of hoppers and adults formed in northern Niger and ground teams treated 394 ha. Isolated adults were present in **Morocco**.

**FORECAST.** Low numbers of adults may persist in northwest **Mauritania**, northern **Mali** and **Niger**, and southern **Algeria**. Small-scale breeding could commence at the end of the forecast period south of the Atlas Mountains in **Morocco** and in northern **Mauritania** once temperatures warm up.

### CENTRAL REGION: THREAT

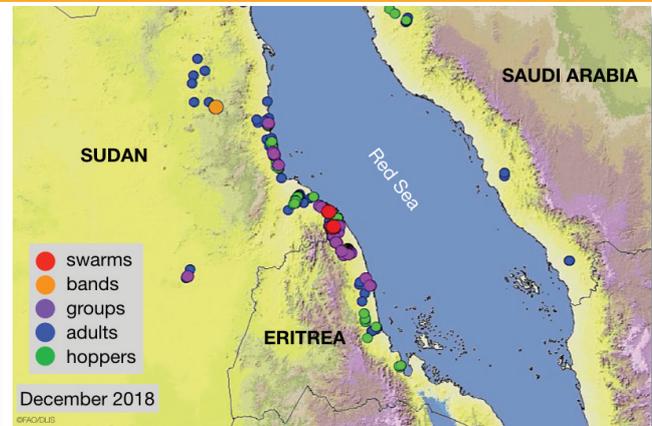
**SITUATION.** An outbreak occurred on the Red Sea coast of **Sudan** and **Eritrea** where control operations treated nearly 8,500 ha of hopper and adult groups and a few hopper bands and swarms. Small-scale breeding occurred in southeast **Egypt**, the Red Sea coast of **Saudi Arabia**, and southern **Oman**.

**FORECAST.** A second generation of breeding will cause more groups, bands and swarms to form on the Red Sea coast in **Sudan** and **Eritrea**. Small-scale breeding will cause locust numbers to increase in **Egypt**, **Saudi Arabia** and **Yemen**. A few groups or swarms may form along the **Yemen/Oman/Saudi Arabia** border where good rains fell from Cyclone Luban.

### EASTERN REGION: CALM

**SITUATION.** No locusts were reported.

**FORECAST.** No significant developments are likely.



Desert Locust outbreak develops in Sudan and Eritrea

Favourable ecological conditions and extensive breeding caused a Desert Locust outbreak to develop in the winter breeding areas along the Red Sea coast in Sudan and Eritrea during December. Although breeding commenced in mid-October and continued throughout November, it was not fully detected until December when widespread hatching occurred, groups of hoppers and adults began forming by mid-month, and adult groups moved back and forth across the Sudan/Eritrea border. By the end of December, a second generation of breeding had started as several mature swarms formed and laid eggs near the border. Ground teams treated 7,235 ha in Eritrea and 1,247 ha in Sudan during December. During the forecast period, first-generation hoppers and adults will form more groups and a few bands and swarms. This will be supplemented by second-generation hatching in January in both countries that will give rise to additional hopper groups and bands. Immature adult groups and small swarms could start to form by about mid-February. The extent of second-generation breeding will depend on rainfall and ecological conditions. Elsewhere, small-scale breeding occurred in southeast Egypt, on the Red Sea coast in Saudi Arabia, and in southern Oman. A few small groups or swarms may form in the Empty Quarter near the Yemen/Oman/Saudi Arabia border where good rains fell from Cyclone Luban. The situation remained calm in the other regions and 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 December 2018

Light to moderate showers fell at times along both sides of the Red Sea where breeding conditions were favourable. Green vegetation persisted in a few areas in the Western Region.

### WESTERN REGION

No significant rain fell during December and conditions remained generally dry throughout the region. Nevertheless, small areas of green vegetation persisted in northwest Mauritania (Akjoujt to Oujef), in the extreme south of Algeria and adjacent parts of northern Mali (Tilemsi Valley), and in northern Niger (Tazerzait Plateau, northern Tamesna, and a few places in the Air Mountains). Breeding conditions were favourable along the edges of irrigated agricultural perimeters in the Adrar Valley of central Algeria and on the southern side of the Hoggar Mountains near Tamanrasset. In Morocco, limited green vegetation persisted in a few places south of the Atlas Mountains in the Draa and Ziz-Ghris valleys.

### CENTRAL REGION

Light to moderate rains fell at times during December along the Red Sea coast between Port Sudan and Foro, Eritrea as well on the on the central Red Sea coast near Jeddah, Saudi Arabia and on the eastern coast of Oman between Marmul and Duqm. Breeding conditions were favourable on the Red Sea coast in southeast Egypt, along the coastal plains from Eit, Sudan to Foro, Eritrea, along Wadi Oko/Diib in subcoastal areas of northeast Sudan, on the Red Sea coast of Saudi Arabia from Jizan to Umm Lajj, and on the Tihama in Yemen. Breeding conditions remained favourable along the edge of the Empty Quarter in the southern province of Dhofar, Oman as a result of rains from Cyclone Luban in October. These rains also caused several temporary lakes to form in between the dunes in the southeastern Empty Quarter near the borders of Yemen, Oman and Saudi Arabia.

### EASTERN REGION

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



### Area Treated

Eritrea 7,235 ha (December)  
Niger 394 ha (December)  
Sudan 1,247 ha (December)



## Desert Locust Situation and Forecast

### WESTERN REGION

#### MAURITANIA

##### • SITUATION

During December, scattered immature and mature solitary adults were present at one place west of Oujef (2003N/1301W) where a few adults were seen copulating at mid-month.

##### • FORECAST

*Local breeding may continue in the northwest between Akjoujt, Oujef and Atar. Low numbers of adults may be present in the north where small-scale breeding could occur once temperatures warm up.*

#### MALI

##### • SITUATION

During December, scattered immature and mature solitary adults persisted in the northeast at densities up to 700 adults/ha in the Tilemsi Valley between Aguelhoc (1927N/0052E) and Ti-n-kar (1926N/0022W). A group of immature and mature adults, two hopper groups and scattered late instar hoppers at densities up to 200 hoppers/ha were also reported within this area. No locusts were seen in the west between Kayes (1426N/1128W) and Nioro (1512N/0935W), and south of Nara (1510N/0717W).

##### • FORECAST

*Low numbers of locusts are likely to persist in the Tilemsi Valley as well as parts of Timetrine and the Adrar des Iforas.*

#### NIGER

##### • SITUATION

In early December, locust densities increased to 3,000 adults/ha on the northern Tamesna Plains between Arlit (1843N/0721E), In Abangharit (1754N/0559E) and the Tazerzait Plateau (1832N/0449E) and scattered early instar solitary hoppers were present. As vegetation dried out, a few small hopper and adult groups formed at densities of up to 3 adults/m<sup>2</sup>, and ground teams treated 394 ha. In the southern Air Mountains, isolated solitary hoppers and immature and mature solitary adults were present southeast of Timia (1809N/0846E).

##### • FORECAST

*Low numbers of locusts are likely to persist in parts of the northern Tamesna Plains and in the Air Mountains.*

#### CHAD

##### • SITUATION

No locust activity was reported during December.

##### • FORECAST

*No significant developments are likely.*

## SENEGAL

### • SITUATION

No locust activity was reported 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, small-scale breeding occurred in the south along the Niger border near In Guezzam (1937N/0552E) and west of Tamanrasset (2250N/0528E) where isolated solitarious hoppers of all instars and immature solitarious adults were present. No locusts were seen in the Adrar Valley (2753N/0017W) of the Central Sahara and in the south along the Mali border between Bordj Badji Mokhtar (2119N/0057E) and Timeiaouine (2026N/0148E).

### • FORECAST

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

## MOROCCO

### • SITUATION

During December, isolated mature solitarious adults were seen south of the Atlas Mountains in the Draa Valley near Ksair Chair (2907N/0759W). No locusts were seen elsewhere along the southern side of the Atlas Mountains and in the Western Sahara.

### • FORECAST

*Small-scale breeding could commence at the end of the forecast period in the Draa Valley if temperatures warm up.*

## LIBYA

### • SITUATION

No reports were received in December.

### • FORECAST

*No significant developments are likely.*

## TUNISIA

### • SITUATION

No locust activity was reported during December.

### • FORECAST

*No significant developments are likely.*

## CENTRAL REGION

### SUDAN

#### • SITUATION

There was a significant increase in locust numbers on the Red Sea coastal plains between Port Sudan (1938N/3713E)

and the Eritrean border from laying that commenced in mid-October followed by hatching in early November. During December, adults and a few groups continued to lay until about mid-month and widespread hatching occurred throughout the month, causing hopper groups to form and outbreak to develop. Fledging from earlier breeding commenced in the first week and groups of immature adults formed from mid-month onwards near the Eritrean border. By the end of the month, a second generation of breeding had started as three mature swarms were seen laying eggs near Karora (1745N/3820E) and the Eritrean border on the 26–29<sup>th</sup>. Elsewhere, mature solitarious adults were present in the northeast subcoastal areas in Wadi Oko/Diib between Tomala (2002N/3551E) and Sufiya (2119N/3613E), and on the western side of the Red Sea Hills southwest of Derudeb (1731N/3607E). A mid to late instar hopper band reported on the 27<sup>th</sup> east of Tomala suggests that additional breeding was underway. Ground teams treated 1,247 ha.

#### • FORECAST

*First-generation hoppers and adults will form more groups and a few bands and swarms on the Red Sea coast and in Wadi Oko/Diib. A second generation of breeding will occur in January on the coast between Port Sudan and Karora with hatching from mid-month onwards, giving rise to hopper groups and bands, followed by immature groups and a few small swarms that may start to form in about mid-February.*

## ERITREA

### • SITUATION

During December, egg-laying and hatching continued on the central Red Sea coastal plains between Wekiro (1548N/3918E) and Mersa Gulbub (1633N/3908E), on the southern plains near Foro (1515N/3937E), and on the northern coast between Mehimet (1723N/3833E) and the Sudanese border. Breeding was heaviest in the latter area where hoppers and immature adults formed groups, causing an outbreak. By the end of the month, a second generation of breeding started on the coast between Mersa Gulbub and the Sudanese border where adult groups were laying. Ground teams treated 7,235 ha.

### • FORECAST

*First-generation hoppers and adults will form more groups and a few bands and swarms. A second generation of breeding will occur in January on the Red Sea coast north of Massawa with hatching from mid-month onwards, giving rise to hopper groups and bands, followed by immature groups and a few small swarms that may start to form in about mid-February.*

## ETHIOPIA

### • SITUATION

No reports were received in December.

### • 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 December.

### • FORECAST

*No significant developments are likely.*

## SOMALIA

### • SITUATION

No reports were received in December.

### • FORECAST

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

## EGYPT

### • SITUATION

During December, isolated mature solitary adults were present in a few places near the Red Sea coast between Shalatyn (2308N/3535E) and the Sudan border. Small-scale breeding was detected at two locations where isolated mid-instar solitary hoppers were present. No locusts were seen in subcoastal areas to the west of Berenice (2359N/3524E), on the western side of Lake Nasser near Abu Simbel (2219N/3138E) and Tushka (2247N/3126E), and on the northwest coast near Salum (3131N/2509E).

### • 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 December, low numbers of immature solitary adults were present on the Red Sea coast near Jizan (1656N/4233E), Qunfidah (1909N/4107E), Mecca (2125N/3949E), Yenbo (2405N/3802E), and Umm Lajj (2501N/3716E). Some of the adults were mature and small-scale breeding was in progress near Mecca where isolated solitary hoppers of all instars were seen at three places.

### • FORECAST

*Small-scale breeding will occur along parts of the Red Sea coastal plains, causing locust numbers to increase slightly. There is a risk that a few groups or perhaps a small swarm may appear from breeding in the southeast Empty Quarter where good rains fell from Cyclone Luban.*

## YEMEN

### • SITUATION

During December, no surveys could be carried out due to insecurity and no locusts were reported.

### • 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. Undetected breeding may be in progress in the eastern region where good rains fell from*

*Cyclone Luban. This could lead to the formation of a few groups or small swarms.*

## OMAN

### • SITUATION

During December, small-scale breeding increased in the southern province of Dhofar where low numbers of solitary hoppers of all instars, and immature and mature solitary adults were present in three areas along about 250 km near the edge of the Empty Quarter and close to the Yemen border north and northwest of Maziuna (1750N/5239E). Several small lakes formed between the dunes as a result of good rains from Cyclone Luban. In one area, hopper groups were seen at two places. No locusts were seen in the northern interior between Ibri (2314N/5630E) and Buraimi (2415N/5547E), 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. A few groups or perhaps a small swarm could appear from adjacent areas of undetected breeding.*

## 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 December, 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 December.

#### • FORECAST

*No significant developments are likely.*

### INDIA

#### • SITUATION

No locusts were seen in Rajasthan and Gujarat during December.

#### • 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:

- **Drones.** 2<sup>nd</sup> field trial, Oman (20–24 January 2019)
- **CLCPRO.** Preparation and validation of a new regional training plan IV (2019–2022), Oran, Algeria (4–7 February 2019)
- **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]
- **CLCPRO.** 9<sup>th</sup> Regional workshop on Desert Locust information management in the Western Region, Tunis, Tunisia (8–11 April 2019)
- **DLCC.** 41<sup>st</sup> Session [tbc]



## 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, Sierre 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.ideo.columbia.edu/maproom/.Food\\_Security/.Locusts/index.html](http://iridl.ideo.columbia.edu/maproom/.Food_Security/.Locusts/index.html)

**IRI Greenness maps.** Dynamic maps of green vegetation evolution every decade  
[http://iridl.ideo.columbia.edu/maproom/Food\\_Security/Locusts/Regional/greenness.html](http://iridl.ideo.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>

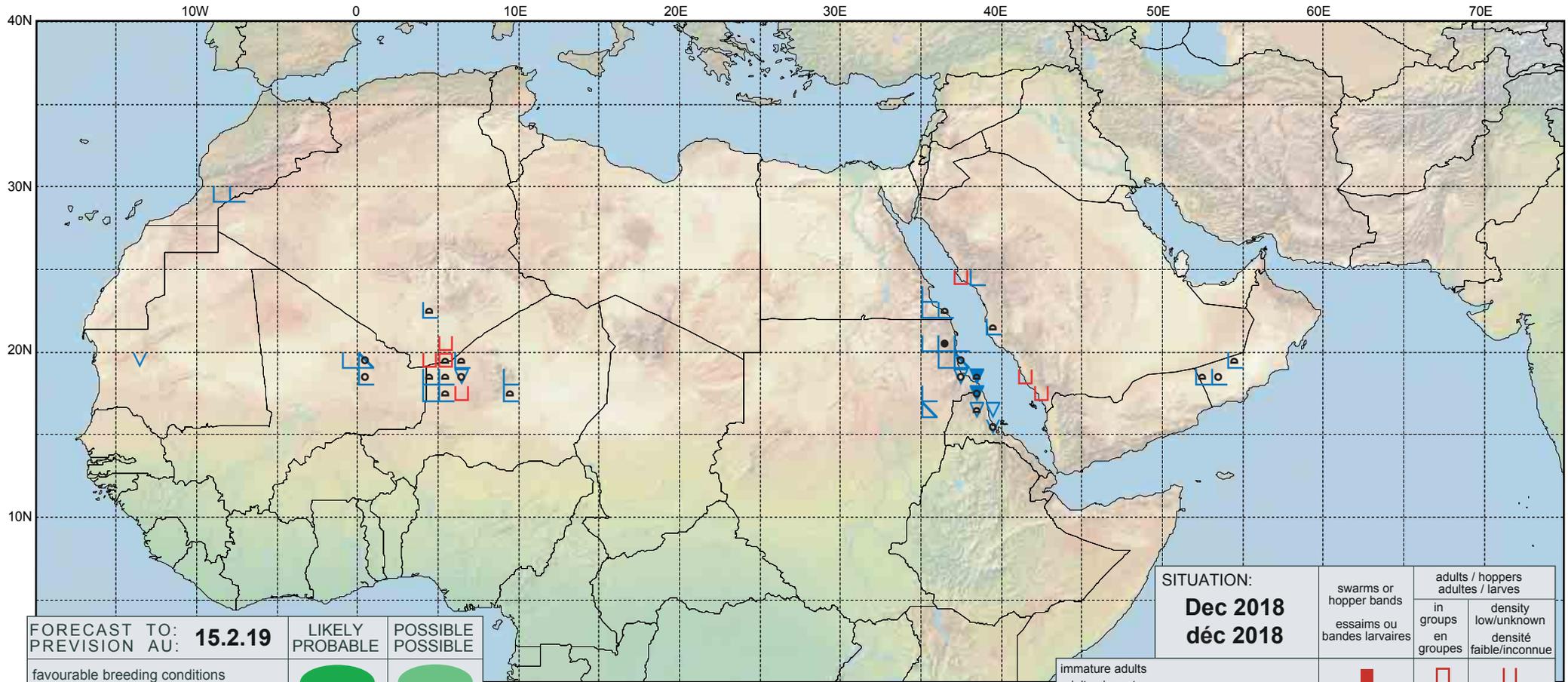
**eLERT.** Online database of resources and technical specifications for locust emergencies  
<http://sites.google.com/site/elertsite>



# Desert Locust Summary

## Criquet pèlerin - Situation résumée

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FORECAST TO:  
PREVISION AU: **15.2.19**

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:

**Dec 2018**  
**déc 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)	◼	◼	◼