



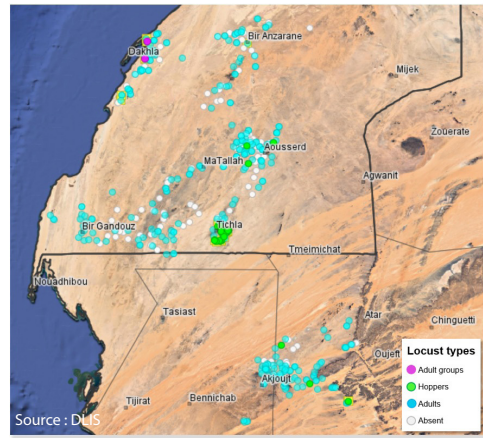
# Desert Locust Bulletin

## General situation during January 2023 Forecast until mid-March 2023

### WESTERN REGION: CALM

**SITUATION.** Hopper and small groups of adults in **Western Sahara** (457 ha treated); low numbers of adults in northwest **Mauritania** (35 ha); isolated adults in central Sahara of **Algeria**.

**FORECAST.** While some adults may stay in parts of southern **Western Sahara** and breed, most are likely to move further north to Wadi Draa in **Morocco**; a few locusts may occur in central and southern **Algeria** and southwest **Libya** in March. Temperatures will increase in March and light rainfall for spring breeding may start.



### WINTER BREEDING WILL DECLINE

The Desert Locust situation continued to remain calm during January. In northwest Africa, scattered hoppers and adults with a few adult groups were present in the southern Western Sahara while, in nearby Mauritania, locust numbers declined. Ground teams treated 467 ha in Morocco and 35 ha in Mauritania. On the Red Sea coast, hoppers and adults were present in Sudan where a few hopper groups started to form, and 204 ha were treated. Low numbers of adults were present on the coast of Yemen, and a few adults were seen in Saudi Arabia, Eritrea, and northwest Somalia. In the Eastern Region, very good rain fell on the coast of Iran. During the forecast, temperature and some rainfall are expected to increase in the spring breeding areas in Morocco, interior Saudi Arabia, and the coast of southeast Iran and southwest Pakistan. Consequently, low numbers of locusts are likely to move from Western Sahara to Morocco while scattered adults may appear and start to breed in the interior of Saudi Arabia and the coast of Iran and Pakistan in March.

### CENTRAL REGION: CALM

**SITUATION.** Small adults and groups of hoppers on the Red Sea coast of **Sudan** (204 ha treated); low numbers of adults on the Red Sea and Gulf of Aden in **Yemen**; isolated adults on the coast of **Eritrea** and **Saudi Arabia** and in northwest **Somalia**.

**FORECAST.** Low numbers of locusts will decline on the Red Sea coast in **Sudan**, **Eritrea**, and **Saudi Arabia** in March; but breeding may continue on the Red Sea coast of **Yemen**; a few adults may move from the coast to the interior of Saudi Arabia where additional rain may occur about middle of March.

### EASTERN REGION: CALM

**SITUATION.** No locusts present.

**FORECAST.** A few locusts may occur on the coast of southeast **Iran** and southwest **Pakistan** and start breeding on a small scale in March when more rain is expected.

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.

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## Weather & Ecological Conditions in January 2022

Good rains fell on the south coast of Iran.

### WESTERN REGION

Only small light rain fell in some of the interior parts of the Western Sahara and northern Mauritania during the first dekad of January and near Wadi Draa and Tan-Tan in Morocco during the second dekad. Small areas of annual vegetation were still green in parts of the southern Western Sahara. In Algeria, annual vegetation was still green in the irrigated areas in Adrar Valley in the central Sahara and near to Tamanrasset in the southern Sahara. In Mauritania, vegetation dried out in most areas in Inchiri and Adrar.

### CENTRAL REGION

Light rainfall occurred in parts of the Red Sea coastal areas during January. In Saudi Arabia, light rains fell on the coast from Lith to Yenbo while moderate rainfall occurred in the interior from the Hijaz Mountains to the Persian Gulf during the first dekad. In Sudan, light rain fell in a few places during the first half of the month in Sudan and during the second dekad in northern and central coast of Eritrea. Annual vegetation was green in most of the coastal areas on both sides of the Red Sea but was starting to dry out along the southeast area of Egypt, southern coastal area of Saudi Arabia, and the Gulf of Aden in Yemen. Light to moderate rain fell during the first dekad in northwest Somalia and Djibouti. Annual vegetation became green in parts of the coast, escarpment, and the plateau of northwest Somalia and in a few places of the coast and interior of Djibouti.

### EASTERN REGION

Good rains fell on the coast in Iran during January. Moderate rainfall occurred along the coast during the first dekad from Iraq to the Strait of Hormuz in southeast Iran and in the second dekad from the southwest to southeast of Bushehr. During the third dekad, only light rainfall in parts of the south coastal area. In southwest Pakistan, little rain fell on the coast near Iran. In both countries, annual vegetation may start to become green in some parts of southeast Iran and southwest Pakistan.



### Area Treated

Control operations were carried out during January:

Mauritania	35 ha
Morocco	467 ha
Sudan	204 ha



## Desert Locust Situation and Forecast

### WESTERN REGION

#### ALGERIA

##### • SITUATION

During January, isolated immature solitarious adults continue to be present in a few places in the central Sahara near Adrar (2753N/0017W) while isolated mature adults were present to the west of Tamanrasset (2250N/0528E) in southern Sahara.

##### • FORECAST

*A few locusts may occur in the central and southern Sahara at the end of the forecast as temperatures increase in March and light rainfall for spring breeding.*

#### CHAD

##### • SITUATION

No locusts were reported during January.

##### • FORECAST

*No significant developments are likely.*

#### LIBYA

##### • SITUATION

No locusts were reported during January.

##### • FORECAST

*A few locusts may occur in the southwest at the end of the forecast as temperatures increase in March and light rainfall for spring breeding.*

#### MALI

##### • SITUATION

No locusts were reported during January.

##### • FORECAST

*No significant developments are likely.*

#### MAURITANIA

##### • SITUATION

During January, locust numbers continued to decrease, and only isolated and scattered immature solitarious adults were present between Akjoujt (1945N/1421W) and Atar (2032N/1308W) in the northwest. During the last dekad, isolated four and fifth instar solitarious hoppers were seen at one place north of Akjoujt. Ground teams treated 35 ha southwest of Oujft (2003N/1301W).

##### • FORECAST

*A few locusts are likely to be present in Akjoujt to Atar as well as further north in Tiris-Zemmour.*

#### MOROCCO

##### • SITUATION

During January, no locusts were reported south of the Atlas Mountains.

##### • FORECAST

*Low numbers of adults will remain in parts of Draa Valley where*

others may arrive from the south. Temperatures will increase in March and light rainfall for spring breeding is local to occur.

## **NIGER**

### • SITUATION

No locusts were reported during January.

### • FORECAST

A few numbers of solitary adults may remain in the Air Mountains. No significant developments are likely.

## **SENEGAL**

### • SITUATION

No locusts were reported during January.

### • FORECAST

No significant developments are likely.

## **TUNISIA**

### • SITUATION

No locusts were reported during January.

### • FORECAST

No significant developments are likely.

## **WESTERN SAHARA**

### • SITUATION

Scattered immature solitary adults were present from the south of Bir Gandouz (2136N/1628W) and Tichla (2138N/1453W) to Dakhla (2342N/1555W) and Bir Anzarane (2353N/1431W) in the north. From the second half of the month, some of the adults were mature near Aousserd (2233N/1419W), and copulating solitary and transiens groups of adults were seen in a few places near Dakhla. Third to fifth instar solitary hoppers were present near Tichla and Aousserd. Ground teams treated 467 ha near Dakhla and Tichla.

### • FORECAST

Some adults may stay in parts of the Adrar Settouf in Western Sahara and breed.

## **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.

## **CENTRAL REGION**

### **DJIBOUTI**

#### • SITUATION

No locust reports were received in January.

#### • FORECAST

No significant developments are likely.

### **EGYPT**

#### • SITUATION

During January, no locusts were seen in the southeast Red Sea coast from the Sudan border to Berenice (2359N/3524E), the subcoastal area of Abraç (2323N/3451E) and El Sheikh

El Shazly (2412N/3438E), and the Nile Valley near Abu Simbel (2219N/3138E) and Tushka (2247N/3126E).

#### • FORECAST

No significant developments are likely.

## **ERITREA**

### • SITUATION

During January, scattered fifth instar solitary hoppers and immature adults were present at one place in the north coast of the Red Sea near Mehimet (1723N/3833E) while a few isolated immature solitary adults were seen south of Massawa (1537N/3928E) near Buri Peninsula. No locusts were seen from Mersa Fatma (1454N/4018E) in the central to the Sudan border in the north.

### • FORECAST

Small-scale breeding may occur in central and northern Red Sea coastal plains during February but will likely decline thereafter as conditions become dry.

## **ETHIOPIA**

### • SITUATION

No locusts were seen or reported during January.

### • FORECAST

No significant developments are likely.

## **OMAN**

### • SITUATION

During January, no locusts were seen near Musandam Peninsula, on the Batinah coast, the northern interior, Al Wusta in the central, and Dhofar in the south.

### • FORECAST

No significant developments are likely.

## **SAUDI ARABIA**

### • SITUATION

During January, no locusts were seen on the Red Sea coast from Yenbo (2405N/3802E) in the north to Jizan (1656N/4233E) in the south as well as in the southwest interior near Najran (1729N/4408E).

### • FORECAST

Low numbers of adults are likely to appear on the Red Sea coastal plains and breed on a small scale.

## **SOMALIA**

### • SITUATION

During January, a few isolated immature solitary adults were seen at one place of the plateau northwest of Hargeisa (0931N/4402E). Elsewhere, no locusts were seen by surveys in the Somaliland from the northwest coast, escarpment, and the plateau from Boroma (0956N/4313E) to Burco (0931N/4533E). Similarly, no locusts were seen in the northeast near Gardo (0930N/4905E) and Las Anod (0828N/4721E) as well as in the central near Dusa Mareb (0532N/4623E).

### • FORECAST

Small-scale breeding may occur in parts of the northwest coast.

## SUDAN

### • SITUATION

During January, scattered late instar solitary hoppers were present on the Red Sea coast between Suakin (1906N/3719E) and Port Sudan (1938N/3713E), a few near Tokar (1827N/3741E) and Karora (1745N/3820E) in the south, and north of Tomala (2002N/3551E) in the northeast subcoastal areas. Hopper groups started to form after mid-month near Tomala and Suakin. Scattered immature and mature solitary adults were present in the same areas. Ground teams treated 204 ha.

### • FORECAST

*Locust numbers will decline in March along the Red Sea coastal plain and subcoastal areas as conditions become dry.*

## YEMEN

### • SITUATION

During January, scattered immature and mature solitary adults were present in the Red Sea coast from Zabid (1410N/4318E) to Suq Abs (1600N/4312E). Only a few isolated immature and mature solitary adults were seen in the southern coast near Am Rija (1302N/4434E), Zinjibar (1306N/4523E) and Ahwar (1333N/4644E).

### • FORECAST

*Low numbers of breeding may occur on the Red Sea coast but will decline in the Gulf of Aden unless further rain occurs.*

## BAHRAIN, D.R. CONGO, IRAQ, ISRAEL, JORDAN, KUWAIT, LEBANON, PALESTINE, QATAR, SOUTH SUDAN, SYRIA, TANZANIA, TURKEY, UGANDA, AND UAE

### • FORECAST

*No significant developments are likely.*

## EASTERN REGION

### AFGHANISTAN

#### • SITUATION

No locust reports were received in January.

#### • FORECAST

*No significant developments are likely.*

### INDIA

#### • SITUATION

No locusts were seen by surveys in Rajasthan and Gujarat during January.

#### • FORECAST

*No significant developments are likely.*

### IRAN

#### • SITUATION

No locusts were seen by surveys in the south and northeast during January.

#### • FORECAST

*A few locusts may occur on the southeast coast in February as temperature and rain increase which could allow breeding on a small scale to start at the end of the forecast period.*

## PAKISTAN

### • SITUATION

No locust surveys were carried out and no locusts were reported during January.

### • FORECAST

*A few locusts may occur on the southwest coast of Baluchistan in February as temperature and rain increase which could allow breeding on a small scale to start at the end of the forecast period.*



## Announcements

### Locust warning levels

A colour-coded scheme indicates the alert level, perceived risk, or threat of current Desert Locust infestations to crops, and appropriate response:

- **Green** – calm situation (low alert); no threat to crops (*maintain regular monitoring*)
- **Yellow** – cautious situation (moderate alert); potential threat to crops (*increased vigilance, control may be needed*)
- **Orange** – serious situation (high alert); threat to crops (*survey and control must be undertaken*)
- **Red** – dangerous situation (very high alert); significant threat to crops (*intensive survey and control operations must be conducted*)

The scheme is applied to the Locust Watch web page and to the monthly bulletins and updates.

### Locust reporting

**RAMSES data.** Countries should connect to the Internet and backup the RAMSES database whenever data are added or changed; do not wait until the end of the month.

**Bulletins.** Affected countries are encouraged to prepare decadal, fortnightly, or monthly bulletins that summarize and analyze the situation, and share them with other countries.

**Reporting.** All information should be sent by e-mail to the FAO Desert Locust Information Service ([eclo@fao.org](mailto:eclo@fao.org) and [faodlislocust@gmail.com](mailto:faodlislocust@gmail.com)). Reports received by the first day of the new month will be included in the FAO Desert Locust Bulletin; 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.

### eLocust3 digital tools

In addition to the original eLocust3 tablet, FAO has three free tools for data collection in the field:

- eLocust3m – a smartphone app for survey and control data, developed with PlantVillage (download: <http://tiny.cc/eL3m>; how-to-use videos: <http://tiny.cc/eL3mVideos>)
- eLocust3g – a GPS app for emergencies, developed with Garmin (<http://tiny.cc/eLocust3g>)
- eLocust3w – an Internet form for emergencies, developed

in Kobo (<http://tiny.cc/eLocust3w>)

The geo-referenced data collected by these tools feed into FAO's global early warning system and are critical for real-time monitoring, near instant analysis, and planning field operations in each country.

[\[http://www.fao.org/ag/locusts/en/activ/2573/eL3suite/index.html\]](http://www.fao.org/ag/locusts/en/activ/2573/eL3suite/index.html)

## Standard Operating Procedures (SOPs)

FAO has developed pocket-sized SOPs for use in the field on Desert Locust biology, survey, and control, including instructions on how to use eLocust3 tools, that are available in different languages.

[\[http://www.fao.org/ag/locusts/en/publicat/gl/sops/index.html\]](http://www.fao.org/ag/locusts/en/publicat/gl/sops/index.html)

## Community awareness

As communities have an important role to play in Desert Locust management, FAO has developed:

- Posters – six simple, easy to understand posters, providing basic messaging on pesticide containers, safety measures, pesticide exposure, farmer advice, Desert Locust, and following instructions, which can be edited (<http://www.fao.org/ag/locusts/en/publicat/2581/index.html>)
- Animation – a simple SWABO animation for all readers that clearly explains about the dangers of Desert Locust (<https://www.youtube.com/watch?v=3TOhuA-v1m4>)

## Publicly available locust data

Desert Locust survey and control data are available for research and other non-commercial purposes:

- FAO Locust Hub (<https://locust-hub-hqfao.hub.arcgis.com>)
- FAO Hand-in-Hand (<https://data.apps.fao.org>)

## Real-time evaluation report

The full report of the *2020–2021 Desert Locust upsurge real-time evaluation* is available: <http://tiny.cc/RTE2022>

## 2023 calendar

- DLCC. 42<sup>nd</sup> session (13–17 March, Nairobi, Kenya)



## 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*. Low alert. No threat to crops; maintain regular surveys and monitoring

### **Yellow**

- *Caution*. Moderate alert. Potential threat to crops; increased vigilance is required; control operations may be needed

### **Orange**

- *Serious*. High alert. Threat to crops; survey and control operations must be undertaken

### **Red**

- *Danger*. Very high alert. 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 upsurges and 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 upsurges and plagues only: Bahrain, D.R. Congo, 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.



## Useful tools and resources

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

**FAO/ESRI Locust Hub.** Desert Locust maps and data download, and emergency response progress  
<https://locust-hub-hqfao.hub.arcgis.com>

**FAO 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 suite.** Digital tools for data collection in the field (mobile app, web form, GPS)  
<http://www.fao.org/ag/locusts/en/activ/DLIS/eL3suite/index.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.** 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>

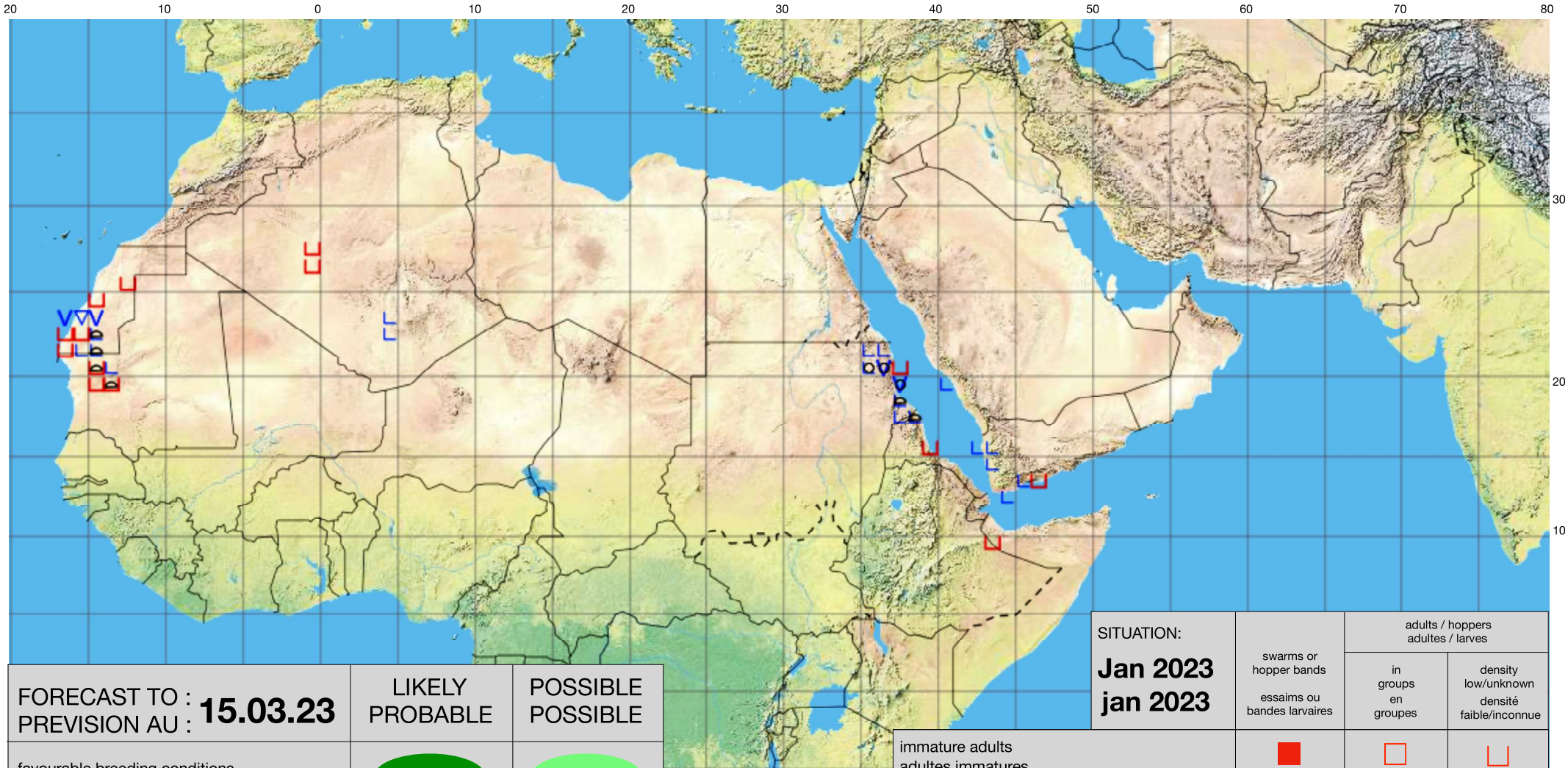
**FAOLocust Slideshare.** Locust presentations and photos  
<http://www.slideshare.net/faolocust>

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



# Desert Locust Summary

## Criquet pèlerin – Situation résumée



FORECAST TO : PREVISION AU : <b>15.03.23</b>	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favorables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarms(s) essaim(s) limité(s)		
non swarming adults adults non essaimant		

SITUATION: <b>Jan 2023</b> <b>jan 2023</b>	swarms or hopper bands	adults / hoppers adultes / larves	
	essaims ou bandes larvaires	in groups en groupes	density low/unknown densité faible/inconnue

immature adults adultes immatures			
mature or partially 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 example) larves et adultes (symboles combinés)			