



# Desert Locust Bulletin

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

### WESTERN REGION: CALM

**SITUATION.** Low numbers of adults south of the Atlas Mountains in **Morocco** (857 ha treated) while a few small mature groups in **Western Sahara** (741 ha). Isolated adults in central **Algeria** and northwest **Mauritania**.

**FORECAST.** Small-scale spring breeding will occur south of the Atlas Mountains in **Morocco**. Scattered locusts and perhaps a few small groups may remain in southern **Western Sahara**. A few locusts may occur in central and southern **Algeria** and southwest **Libya** if light rainfall occurs for spring breeding. No significant developments are likely.

### CENTRAL REGION: CALM

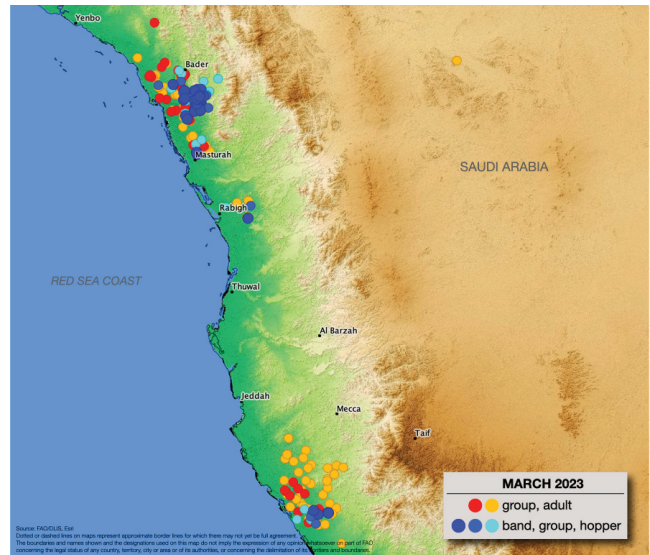
**SITUATION.** Small adult groups lay and new hopper groups and bands on the northern coast of the Red Sea in **Saudi Arabia** (2 155 ha treated) while other adults moved to the interior. Few groups of adults in the northeast subcoastal of **Sudan** (130 ha) and adults were on the coast. Low numbers of hoppers and adults in southeast **Egypt** (70 ha) and adults on the Red Sea coast in **Yemen**.

**FORECAST.** Locusts will continue to decline on the Red Sea coast in **Sudan** and **Egypt** but may continue during April on the coast of **Saudi Arabia** and increase slightly in the interior as well as in **Yemen** where small-scale breeding is likely to occur in both countries. Low numbers of locusts may appear in the northern interior and coastal areas of **Oman** where spring breeding may occur on a small scale. No significant developments are likely.

### EASTERN REGION: CALM

**SITUATION.** No locusts present.

**FORECAST.** A few locusts may occur on the coast of southeast **Iran** and southwest **Pakistan** where good rains and small-scale spring breeding is likely to occur. No significant developments are likely.



### BREEDING OCCURS IN SAUDI ARABIA

The Desert Locust situation continued to remain calm during March. Low numbers of solitary adults and a few groups were present at the end of the winter season in the southern Western Sahara, south of the Atlas Mountains in Morocco, and the Red Sea coasts of Sudan and southeast Egypt. In Saudi Arabia, adult groups laid since the end of February in two small areas of the northern coast, and new hoppers hatched in March and formed small groups and some bands. In Yemen, only small adults were present on the Red Sea and Gulf of Aden coast. During the forecast period, unusually good rains are expected on the coast and interior of Saudi Arabia in April which will allow a generation of spring breeding. Hopper groups and small bands will continue on the coast from April to mid-May, fledglings to start in early April, and adults could form groups and go to the interior. Elsewhere, small-scale is likely to occur south of the Atlas Mountains in Morocco, the interior of Yemen, in southeast Iran and southwest Pakistan, and perhaps in central Algeria, southwest Libya, and northern Oman if more rain falls. 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.

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## Weather & Ecological Conditions in March 2023

**Good rains fell in the interior of Saudi Arabia and Yemen.**

### WESTERN REGION

No significant rain fell in the region. Light rain fell in a few parts of the central Sahara of Algeria on 20 March and in the southern Western Sahara on 22-23 March. Although most of the annual vegetation continued to dry out, small areas were still green in parts of the southern Western Sahara near the coast and in the interior. South of Atlas Mountain, annual vegetation was greening in parts of the Wadi Draa. In the central Sahara of Algeria, annual vegetation was green in the irrigated areas near the Adrar Valley.

### CENTRAL REGION

During March, good rains fell in the interior of Saudi Arabia in the northeast near Hali during the first dekad. In the second dekad and parts of the third dekad, good rains fell from Riyadh south to the interior of Yemen. In terms of vegetation, annual vegetation in Sudan was drying out in the northeast subcoastal area and on the coast except for a few places in the south where it was still green. In southeast Egypt, vegetation continued to dry out except for parts of the subcoastal area near Abraq and El Sheikh El Shazly. On the east side of the Red Sea, annual vegetation remained green along the coast from the central coast of Yemen to the northern coast of Saudi Arabia near Al Wajh but was starting to dry out in some places. In the interior, vegetation was starting to become green in some places west of Riyadh and Gassim. On the southern coast of Yemen, vegetation remains mostly dry. In northwest Somalia, light rain fell at times during the second and third dekad. Annual vegetation was green in a few parts of the coast, escarpment, and the plateau but was dry east of Hargeisa to Las Anod. New annual vegetation was seen in the interior of Puntland northwest of Gardo.

### EASTERN REGION

During the beginning of the spring season, good rains fell during the first dekad of March on the coast in southwest and southeast Iran as well as the interior of Baluchistan in Pakistan. This continued during the second dekad in both interior and coastal areas of Baluchistan as well as at the end of the month in parts of the southeast of Iran and parts of Baluchistan in Pakistan. Annual vegetation is starting to become green in a few places on the coast of southeast Iran and southwest Pakistan.



## Area Treated

Control operations were carried out during March:

Egypt	70 ha
Morocco	857 ha
Saudi Arabia	2 155 ha
Sudan	130 ha
Western Sahara	741 ha



## Desert Locust Situation and Forecast

### Desert Locust Situation and Forecast WESTERN REGION

#### ALGERIA

• SITUATION

During March, isolated mature solitarious adults were present in a few places in the central Sahara near Adrar (2753N/0017W). No locusts were seen west of Tamanrasset (2250N/0528E) in southern Sahara.

• FORECAST

*A few locusts may occur in the central and southern Sahara if light rainfall occurs for spring breeding.*

#### BURKINA FASO

• SITUATION

No locusts were reported during March.

• FORECAST

*No significant developments are likely.*

#### CHAD

• SITUATION

No locusts were reported during March.

• forecast

*No significant developments are likely.*

#### LIBYA

• SITUATION

No locusts were reported during March.

• FORECAST

*A few locusts may occur in the southwest if light rainfall occurs for spring breeding.*

#### MALI

• SITUATION

No locusts were reported during March.

• FORECAST

*No significant developments are likely.*

## MAURITANIA

### • SITUATION

During March, a few isolated immature and mature solitary adults were present in the northwest east of Akjoujt (1945N/1421W).

### • FORECAST

*No significant developments are likely.*

## MOROCCO

### • SITUATION

During March, scattered immature and mature adults were seen in Wadi Draa from Assa (2836N/0926W) to southeast Tata (2944N/0758W) in the spring breeding area south of the Atlas Mountains. Some of the adults were copulating during the second half of the month. Ground teams treated 857 ha.

### • FORECAST

*Small-scale breeding will occur in the Draa and Ziz-Ghris valleys south of the Atlas Mountains where hatching will start in early April and hoppers will increase slightly.*

## NIGER

### • SITUATION

No locusts were reported during March.

### • FORECAST

*No significant developments are likely.*

## SENEGAL

### • SITUATION

No locusts were reported during March.

### • FORECAST

*No significant developments are likely.*

## TUNISIA

### • SITUATION

No locusts were reported during March.

### • FORECAST

*No significant developments are likely.*

## WESTERN SAHARA

### • SITUATION

During March, scattered immature and mature adults remain in the southern part near Tichla (2138N/1453W) while a few small mature groups were copulating further north near Aousserd (2233N/1419W) and isolated mature adults were seen near Oum Dreyga (2406N/1316W). During the last dekad, first instar transiens hoppers were hatching at one place west of Tichla while third to fifth instar solitary hoppers were seen south of Tichla. Ground teams treated 741 ha. Further north, isolated mature solitary adults were seen in Wadi Sakia El Hamra near Haouza (2707N/1112W).

### • FORECAST

*Scattered hoppers and adults and a few groups will remain in parts of the Adrar Settouf.*

## BENIN, 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 March.

### • FORECAST

*No significant developments are likely.*

### EGYPT

### • SITUATION

During the first half of the month, scattered fourth and fifth instar hoppers and immature solitary adults were seen at a few places in Wadi Diib on the southeast coast west of Halaib (2213N/3638E). A few mature adults were seen west of Shalatyn (2308N/3535E). No locusts were seen in the subcoastal area of Abraq (2323N/3451E) and El Sheikh El Shazly (2412N/3438E), and the Nile Valley near Garf Husein (2317N/3252E), Abu Simbel (2219N/3138E) and Tushka (2247N/3126E). Ground teams treated 70 ha.

### • FORECAST

*Locusts will decline in the southeast and no significant developments are likely.*

### ERITREA

### • SITUATION

During March, no locusts were seen on the central Red Sea coast near Sheib (1551N/3903E).

### • FORECAST

*No significant developments are likely.*

### ETHIOPIA

### • SITUATION

During March, no locusts were seen in Somali region near Kebri Dehar (0644N/4416E) and Gode (0557N/4333E) and in Afar region near Semera (1148N/4100E) and east of Mekele (1329N/3928E).

### • FORECAST

*No significant developments are likely.*

### OMAN

### • SITUATION

No locust reports were received in March.

### • FORECAST

*Some rain may fall, and isolated locusts could be found in the northern interior and coast areas where spring breeding may occur on a small scale. No significant developments are likely.*

## SAUDI ARABIA

### • SITUATION

During March, scattered mature solitary adults and groups were seen on the northern coast of the Red Sea between Masturah (2309N/3851E) and Bader (2346N/3847E). Many of the adults were copulating and laying. Hatching started at the end of February and continued in March when many of the hoppers were transients and gregarious in groups and small bands. Some of the hoppers had become fourth instar by the end of the month. A few adults were seen further north on the coast near Umm Lajj (2501N/3716E) and in the interior near Medinah (2430N/3935E) as well as further east. On the coast south of Jeddah (2130N/3910E), mainly immature solitary adults and a few mature adults with some groups copulating were present. Ground teams treated 2 155 ha. Elsewhere, no locusts were seen on the northern coast up to Al Wajh (2615N/3627E) and in the interior from west of Riyadh (2439N/4642E) to Gassim (2621N/4358E).

### • FORECAST

*Above-normal rain is likely to occur on the northern coast and in the interior. Hopper groups and small bands will continue on the coast from April to mid-May with fledglings starting in early April and continuing in May with groups of adults. In the interior, low number of adults are likely to reach the spring area between Hail and Riyadh where small-scale breeding is expected to start during the second half of April.*

## SOMALIA

### • SITUATION

During March, no locusts were seen by surveys on the coast, escarpment, and the plateau of the northwest as well as in the northeast near Gardo (0930N/4905E) and Las Anod (0828N/4721E).

### • FORECAST

*No significant developments are likely.*

## SUDAN

### • SITUATION

During March, immature and mature solitary adults and a few groups of immature adults were in the northeast subcoastal coast from Tomala (2002N/3551E) to the border of Egypt. On the coast, immature and mature solitary adults were present in the south near Aqiq (1813N/3811E), near Tokar Delta (1827N/3741E), and from Suakin (1906N/3719E) to Port Sudan (1938N/3713E). Ground teams treated 130 ha in the northeast.

### • FORECAST

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

## YEMEN

### • SITUATION

During March, mainly scattered immature and limited mature solitary adults were present in a few places on the Red Sea coast from Zabid (1410N/4318E) in the south to Suq Abs

(1600N/4312E) in the north. In the Gulf of Aden, a few mature locusts were seen near Aden (1250N/4503E) and one place further east towards Bir Ali (1401N/4820E).

### • FORECAST

*Locust adults should become mature on the Red Sea coast and breeding may occur where rain is expected. Low numbers of locusts may occur on the southern coast of the Gulf of Aden and in the interior between Al Hazm, Marib and Shabwah where spring breeding could start on a small scale.*

## BAHRAIN, D.R. CONGO, IRAQ, ISRAEL, JORDAN, KENYA, 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 March.

#### • FORECAST

*No significant developments are likely.*

### INDIA

#### • SITUATION

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

#### • FORECAST

*No significant developments are likely.*

### IRAN

#### • SITUATION

During March, no locusts were seen in coastal and interior areas of the southeast and the interior of Fars region in the south.

#### • FORECAST

*A few locusts may occur on the southeast coast and interior areas where spring breeding should occur on a small scale.*

### PAKISTAN

#### • SITUATION

No locust reports were received in March.

#### • FORECAST

*A few locusts may occur on the southwest coast of Baluchistan where spring breeding should occur on a small scale.*



## 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>]

## 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>]

## 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>)

## 2023 calendar

- **CLCPRO/CRC/SWAC.** Interregional Desert Locust Information Officer workshop, Sharm El Sheikh, Egypt (21–27 May)



## 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, Sierre 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>

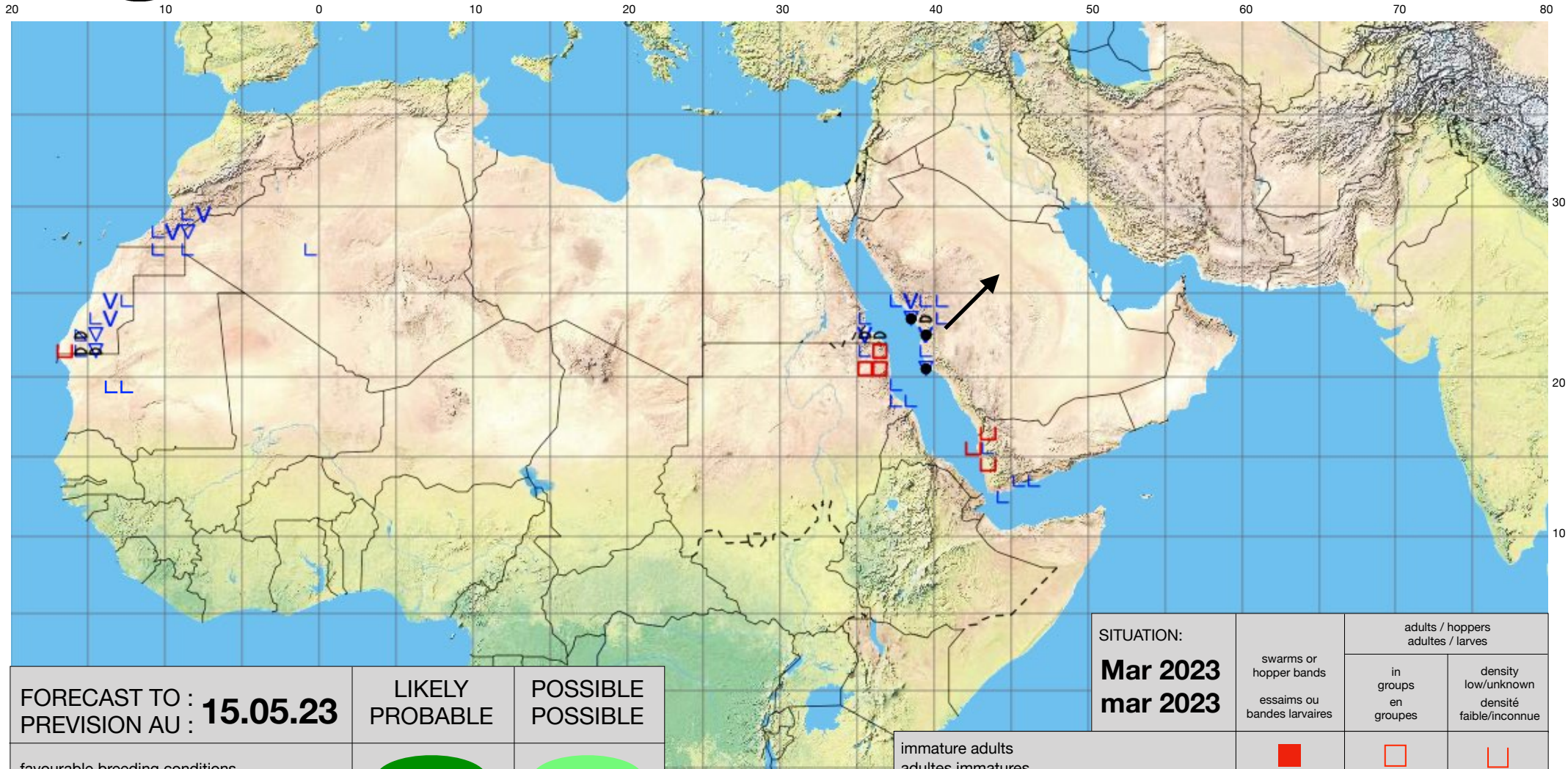
**FAOLocust Slideshare.** Locust presentations and photos  
<http://www.slideshare.net/faolocust>

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



# Desert Locust Summary

## Criquet pèlerin – Situation résumée



<b>FORECAST TO :</b> <b>PREVISION AU :</b> <b>15.05.23</b>	<b>LIKELY PROBABLE</b>	<b>POSSIBLE POSSIBLE</b>
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		

<b>SITUATION:</b> <b>Mar 2023</b> <b>mar 2023</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 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)			