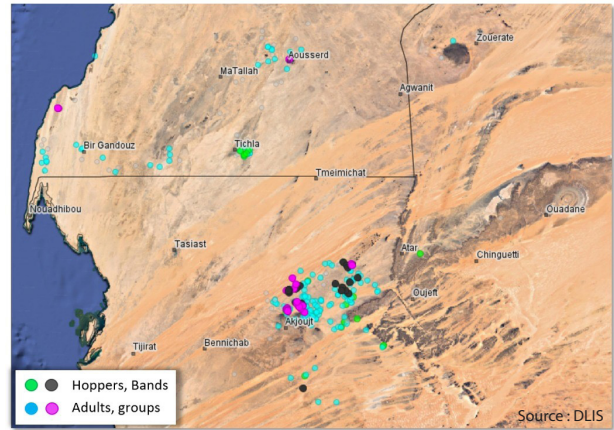


Desert Locust Bulletin

General situation during December 2022 Forecast until mid-February 2023

WESTERN REGION: CALM

SITUATION. Small groups of adults in a very small outbreak in northwest **Mauritania** (2 264 ha treated); scattered adults in southern part of Western Sahara in **Morocco** (562 ha), the central and southern Sahara of **Algeria**, and in **Niger**.
FORECAST. Locust should decrease in northwest **Mauritania** where only small numbers remains; low numbers of adults are likely to remain in northern Mauritania, Western Sahara of **Morocco**, and a few in central and southern **Algeria**. No significant rainfall or vegetation are expected in the next six weeks except in a few parts in northern Mauritania.



CENTRAL REGION: CALM

SITUATION. Low numbers of hoppers and adults in the Red Sea coast of **Sudan**, Red Sea and Gulf of Aden in **Yemen**; and isolated adults in southeast **Egypt**.
FORECAST. Low numbers of locusts will remain in a few areas of the Red Sea coast in **Sudan** and **Egypt**, the Red Sea and Gulf of Aden in **Yemen**, and could appear on the Red Sea coast of **Saudi Arabia** and breed. A few locusts may occur in **Eritrea** and **Somalia** if more rains fall. However, no significant rainfall is expected except for central Red Sea coast in Saudi Arabia and perhaps southern Sudan in January.

SMALL OUTBREAK CONTINUES IN MAURITANIA

The Desert Locust situation continued to remain calm during December. The very small outbreak continues in northwest Mauritania where hoppers completed development after the first dekad and only groups of immature adults were present. In Morocco, low numbers of adults were observed in the southern Western Sahara. Ground teams treated 2 264 and 562 ha in Mauritania and Morocco respectively. Low numbers of adults were seen in Niger, Algeria and Egypt. In Sudan and Yemen, low numbers of hoppers and adults were observed along the Red Sea coast and the Gulf of Aden. During the forecast, locusts will decrease in northwest Mauritania due to control and only low numbers will remain. Similar, locusts should decrease in northern Mauritania and Western Sahara of Morocco. No significant rainfall or vegetation is expected in the next six weeks except perhaps in northern Mauritania and the central Red Sea coast of Saudi Arabia and maybe Sudan. Low numbers of hoppers and adults are likely to continue in the Red Sea coast of Sudan, Yemen, and perhaps Egypt. In Saudi Arabia, low numbers of adults may occur on the Red Sea coast and breed on a small scale. No significant development is likely.

EASTERN REGION: CALM

SITUATION. No locusts present.
FORECAST. No significant developments are likely.



Weather & Ecological Conditions in December 2022

Only limited rains were seen in Western Sahara of Morocco, northern Mauritania, and parts of the Red Sea coastal areas in Saudi Arabia and Sudan.

WESTERN REGION

Vegetation was nearly dry in most areas of the northern Sahel and further north in the desert. Nevertheless, small areas of vegetation were still green in a few places near Inchiri and Adrar of Mauritania and parts of the southern Western Sahara. In Algeria, light rain fell in parts of the central Sahara near the first dekad and vegetation was green near irrigation perimeters in the Adrar Valley. On 28–31 December, some rain fell in places of Western Sahara near the coast and interior as well as parts of Adrar and Tiris-Zemmour in Mauritania.

CENTRAL REGION

Light rainfall occurred in the Red Sea coastal areas of Saudi Arabia through the month and during the second dekad in Sudan. Small areas of vegetation were green in a few places of the Red Sea and Gulf of Aden coast in Yemen as well as the coast and subcoastal area of Sudan. It was starting to become green on parts of the Red Sea coast of Saudi Arabia but remained mostly dry on the coast of Egypt, Eritrea, and northwest Somalia.

EASTERN REGION

Light to moderate rains fell in the southwest coastal area of Iran. Fortunately, this does not affect locusts since there is not an upsurge now.



Area Treated

Control operations were carried out during December:

Mauritania	2 264 ha
Morocco	562 ha



Desert Locust Situation and Forecast

WESTERN REGION

ALGERIA

• SITUATION

During December, isolated immature solitary adults were seen in a few places in the central near Adrar (2753N/0017W)

while isolated mature adults were present further south near Tamanrasset (2250N/0528E).

• FORECAST

No significant developments are likely.

CHAD

• SITUATION

No locusts were reported during December.

• FORECAST

No significant developments are likely.

LIBYA

• SITUATION

No locusts were reported during December.

• FORECAST

No significant developments are likely.

MALI

• SITUATION

No locusts were reported during December.

• FORECAST

No significant developments are likely.

MAURITANIA

• SITUATION

During December, small solitary and transiens, groups and a few very small bands of fourth and fifth instar hoppers were seen north and east of Akjoujt (1945N/1421W) towards Atar (2032N/1308W) in the first dekad only followed by a few solitary third to fifth instar hoppers during the last dekad. As a result, groups of immature adults increased during the first two dekad and then decrease thereafter. A few mature solitary adults were seen during the last week. Ground teams treated 2 264 ha. Elsewhere, a few isolated solitary mature adults were seen further north near Zouerate (2244N/1221W) and Bir Moghrein (2510N/1135W).

• FORECAST

Adults are likely to continue to decrease in the northeast from Akjoujt to Atar due to control, drying vegetation, and no further rainfall. Low numbers of small adults are likely to be present further north in Tiris-Zemmour.

MOROCCO

• SITUATION

During December, isolated immature solitary adults were present in the Adrar Settouf of Western Sahara during the second half of the months near Aousserd (2233N/1419W), Tichla (2138N/1453W), close to the coast near Bir Gandouz (2136N/1628W), and a few near Bir Anzarane (2353N/1431W). Small groups of immature adults were seen near Bir Anzarane and at the coast. Scattered third to fifth instar solitary hoppers were seen near Tichla during the third dekad. They had hatched from the last week of November to mid-December and fledging will finish about mid-January. Ground teams treated 562 ha. Further north, isolated immature solitary adults were seen

in Wadi Sakia El Hamra near Haouza (2707N/1112W).

• FORECAST

Low numbers of solitary adults are likely to remain in parts of the Adrar Settouf of Western Sahara.

NIGER

• SITUATION

During December, isolated third and fourth solitary hoppers and immature and mature solitary adults were present at a few places in the Air Mountains to the northwest and southeast of Iferouane (1905N/0824E). A few immature solitary and transiens adults were seen on the 1st of December in the central pasture northwest of Tasker (1507N/1041E).

• 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 December.

• FORECAST

No significant developments are likely.

TUNISIA

• SITUATION

No locusts were 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.

CENTRAL REGION

DJIBOUTI

• SITUATION

No locusts were seen or reported during December.

• FORECAST

No significant developments are likely.

EGYPT

• SITUATION

During December, isolated mature solitary adults were present at a few places near the Red Sea coast in the southeast between Abu Ramad (2224N/3624E) and the subcoastal area near Wadi Diib as well as south and north of Abraç (2323N/3451E). No locusts were seen in the Nile Valley near Abu Simbel (2219N/3138E), Tushka (2247N/3126E), and north of Aswan (2405N/3256E).

• FORECAST

Local breeding may occur on a small scale along the southeast Red Sea coast if more rain fall.

ERITREA

• SITUATION

No locusts were seen or reported during December.

• FORECAST

Small-scale breeding may occur on the central and northern coastal plains if more rain fall.

ETHIOPIA

• SITUATION

During December, no locusts were seen by surveys conducted in the Somali and Oromia regions.

• FORECAST

No significant developments are likely.

OMAN

• SITUATION

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

• FORECAST

No significant developments are likely.

SAUDI ARABIA

• SITUATION

During December, 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 December, 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 coast from Bosaso (1118N/4910E) to the interior near Las Anod (0828N/4721E) and Galkayo (0646N/4725E).

• FORECAST

A few locusts may occur in the northwest but more rain is needed before breeding can occur. No significant developments are likely.

SUDAN

• SITUATION

During December, isolated late solitary hoppers and a few isolated immature solitary adults were seen in a few places in the Tokar Delta (1827N/3741E) during the second half of the month. In the last week, scattered two to fourth solitary hoppers were at one place in the south near Karora (1745N/3820E) while isolated first instar hoppers were seen on the coast in the north. Elsewhere, scattered solitary mature adults were present in the northeast subcoastal areas

from Wadi Oko near Tomala (2002N/3551E) to Wadi Diib and the Egypt border, and on the coast from north of Port Sudan (1938N/3713E) to the Eritrea border.

• FORECAST

Low numbers of solitary hoppers and adults will remain in a few areas in the Red Sea coastal plain of north, central and south as well as the subcoastal areas in the northeast.

YEMEN

• SITUATION

During December, scattered immature and mature solitary adults were present in the Red Sea coast from Zabid (1410N/4318E) to Suq Abs (1600N/4312E) and a few places in the Gulf of Aden coast near Am Rija (1302N/4434E) and Zinjibar (1306N/4523E) and farther north near Mayfa'a (1416N/4735E). Scattered fifth instar solitary hoppers were seen in a few places in northern Red Sea and Aden coasts during the second half of the month where hatching had started during the second half of November.

• FORECAST

Low numbers of breeding will occur in a few areas of the Red Sea and Gulf of Aden. No significant developments are likely.

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 December.

• FORECAST

No significant developments are likely.

INDIA

• SITUATION

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

• FORECAST

No significant developments are likely.

IRAN

• SITUATION

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

• FORECAST

No significant developments are likely.

PAKISTAN

• SITUATION

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

• FORECAST

No significant developments are likely.



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 and 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>)

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.** 42nd 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 km²
- band: 1–25 m²

Small

- swarm: 1–10 km²
- band: 25–2,500 m²

Medium

- swarm: 10–100 km²
- band: 2,500 m² – 10 ha

Large

- swarm: 100–500 km²
- band: 10–50 ha

Very large

- swarm: 500+ km²
- 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

IRI Greenness maps. Dynamic maps of green vegetation evolution every decade
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>

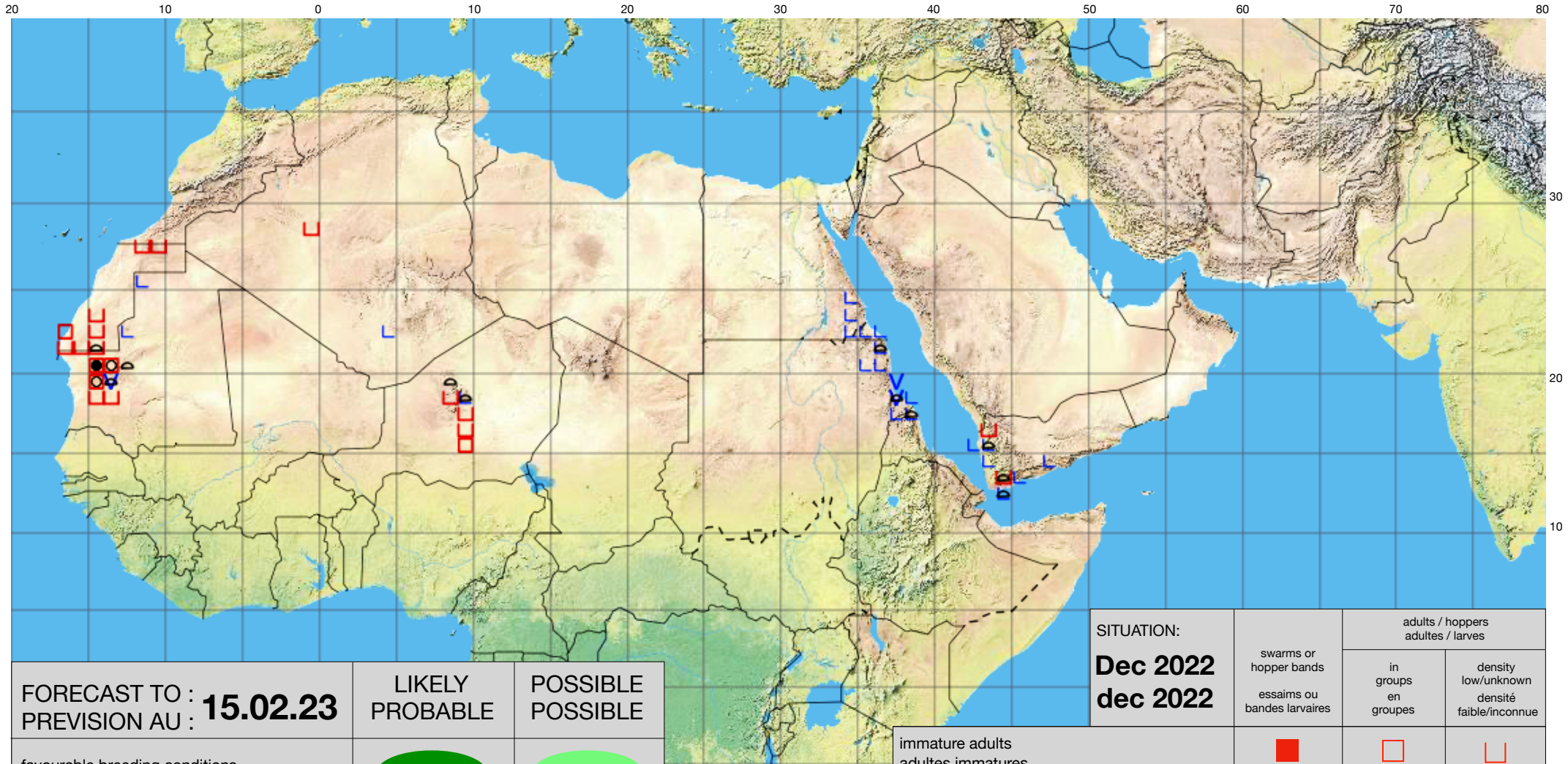
eLERT. Online database of resources and technical specifications for locust emergencies
<http://sites.google.com/site/elertsite>



Desert Locust Summary

Criquet pèlerin – Situation résumée

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FORECAST TO : PREVISION AU : 15.02.23	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:
Dec 2022
dec 2022

	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)			