Food and Agriculture Organization of the United Nations

No. 544 5 February 2024

Desert Locust Bulletin

General situation during January 2024
Forecast until mid-March 2024

WESTERN REGION: CALM

SITUATION. Isolated adults in **Algeria** and in **Morocco**.

FORECAST. Light rainfall may allow spring breeding to start on a small scale in **Algeria** and **Morocco**.

CENTRAL REGION: CAUTION

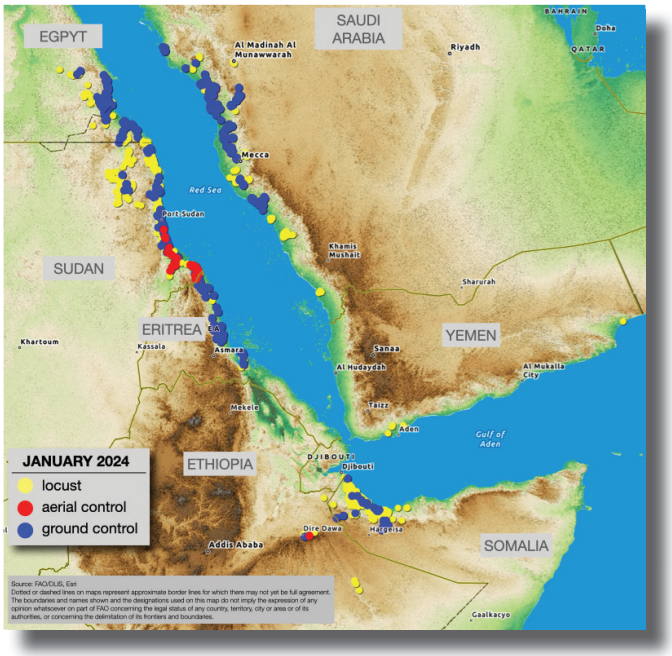
SITUATION. The first winter generation continued on the Red Sea coast with hopper groups, bands, adult groups, and small swarms in **Sudan** (38 736 ha treated), **Eritrea** (14 594 ha), **Saudi Arabia** (13 703 ha), **Egypt** (8 657 ha), as well as the Gulf of Aden in northwest **Somalia** (2 087 ha). A few small swarms appeared in **Ethiopia** (340 ha). Adult groups copulated in southeast **Yemen**. The second generation occurred during the first half of the month in Eritrea and Sudan and the second half in Saudi Arabia and Somalia.

FORECAST. The second generation will continue with hopper groups and bands along the Red Sea and the southern Gulf of Aden coasts. Fledgling will start during the second half of February, followed by new immature adults and groups that can become mature after mid-March in **Egypt**, **Eritrea**, **Saudi Arabia**, **Somalia**, and **Sudan**. Locusts are then likely to decrease because of control operations, diminished rainfall, and drying vegetation, and small groups will remain. Some locusts are likely to migrate from Somalia to **Ethiopia**. In **Yemen**, some groups and bands on the southeast coast and scattered locusts or groups on the Red Sea coast.

EASTERN REGION: CALM

SITUATION. No locusts are present.

FORECAST. No significant developments are likely.



FIVE OUTBREAKS IN CENTRAL REGION

There are five Desert Locust outbreaks along the coast of the Red Sea and Gulf of Aden in the Central Region during January. The first winter generation continued with hopper groups, bands, adult groups, and small swarms that were treated by Sudan, Eritrea, Saudi Arabia, Egypt, and northwest Somalia as well as a few small swarms that appeared in Ethiopia. Aerial control was also done in Sudan and Ethiopia while Somalia used only biopesticides. In Yemen, adult groups copulated on the southeast coast while the situation along the Red Sea coast is unknown. The second generation occurred during the first half of January in Eritrea and Sudan and the second half in Saudi Arabia and Somalia. During the forecast, second-generation population will continue along the Red Sea and Gulf of Aden coasts with new adults starting at the end of February. The weather models indicate that locusts are likely to decrease because of control operations, diminished rainfall, and drying vegetation in March. All countries must maintain survey and control efforts. No significant developments are likely in the Western and Eastern Regions.

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 2024

Very little rain fell during the last two months in the winter season along the Red Sea and Gulf of Aden coasts, but annual vegetation was still green.

WESTERN REGION

During January, there was no rain in the northern Sahel of West Africa, throughout the Sahara, and south of the Atlas Mountains from Morocco to Tunisia. Annual vegetation was dry except for a few irrigated areas in the central and southern Sahara of Algeria.

CENTRAL REGION

During January, only a light rain fell in a few places on the Red Sea coasts from central Sudan to central Eritrea, and from central to northern Saudi Arabia. In the Gulf of Aden, there were some clouds along the coast and the foothills in southern Yemen and northern Somalia, but very little rain. Nevertheless, annual vegetation was still green in the Red Sea coast of Saudi Arabia as well as from southeast Egypt to central Eritrea, and on the Gulf of Aden coast of northwest Somalia. During the last dekad of the month, some vegetation was starting to dry out in parts of the central coast of Saudi Arabia and the northwest coast of Somalia. Mainly dry vegetation was on the Gulf of Aden coast in southern Yemen, northeast Somalia, and the escarpment and plateau of northern Somalia and the Somali region in Ethiopia except near Dire Dawa where it was green.

EASTERN REGION

During January, light rain fell in parts of southwest Iran during a few days and vegetation was dry.

Area Treated

Control operations increased during January to 78 097 compared to 64 126 ha in December.

Egypt	8 657 ha
Eritrea	14 594 ha
Ethiopia	340 ha
Saudi Arabia	13 703 ha
Somalia	2 087 ha
Sudan	38 736 ha

Desert Locust Situation and Forecast

WESTERN REGION

During the spring, seasonal models suggest increase temperature and slightly wetter rains may allow breeding on a small scale to start in the Northwest Africa during March.

Algeria

• **SITUATION**

During January, a few isolated immature solitarious adults were seen in the central Sahara near Adrar (2753N/0017W) and west of In Salah (2712N/0229E) while mature solitarious adults were present in the southern Sahara west of Tamanrasset (2250N/0528E) near Oued Amded (2249N/0427E).

• **FORECAST**

During March, light rainfall may allow spring breeding to start on a small scale in the central Sahara.

Burkina Faso

• **SITUATION**

No locusts were reported during January.

• **FORECAST**

No significant developments are likely.

Chad

• **SITUATION**

No locusts were reported during January.

• **FORECAST**

No significant developments are likely.

Libya

• **SITUATION**

No locusts were reported during January.

• **FORECAST**

No significant developments are likely.

Mali

• **SITUATION**

No locusts were reported during January.

• **FORECAST**

Low numbers of solitarious locusts are likely to be present in a few parts of the Adrar des Iforas.

Mauritania

• **SITUATION**

No locusts were reported during January.

• **FORECAST**

No significant developments are likely.

Morocco

• **SITUATION**

During January, isolated maturing and mature solitarious adults were present in a few places in the south near Bir Gandouz (2136N/1628W)

and the centre near Oum Dreyga (2406N/1316W). No locusts were seen south of the Atlas Mountains in Wadi Draa as well as further south.

• **FORECAST**

During March, light rainfall may allow spring breeding to start on a small scale south of the Atlas Mountains.

Niger

• **SITUATION**

No locusts were reported during January.

• **FORECAST**

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.

Benin, Cabo Verde, Cameroon, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Nigeria, Sierra Leone, and Togo

• **FORECAST**

No significant developments are likely.

CENTRAL REGION

The second-generation population will continue along the Red Sea and Gulf of Aden coasts with new adults starting at the end of February. The weather models and forecast indicate that locusts are likely to decrease because of control operations, diminished rainfall, and drying vegetation in March. All countries must maintain survey and control efforts.

Djibouti

• **SITUATION**

No locust reports were received in January.

• **FORECAST**

There is a low possibility that a few small groups or swarm could move around both sides of the border in eastern Djibouti and northwestern Somalia.

Egypt

• **SITUATION**

During January, the first winter generation continued along the southeast Red Sea coast and subcoastal area. Groups and some swarms of immature and mature adults from El Sheikh El Shazly (2412N/3438E) in the north Halaib (2213N/3638E) and the Sudan border. Late instar hopper, groups and bands had fledged at the end of the third week. Copulating and laying of the second generation starting at mid-month and continued through the end of the month. Control operations treated 8 657 ha.

• **FORECAST**

The second generation along the southeastern Red Sea coast should hatch in the first days of February, followed by hopper, groups and bands for the rest of the month. Fledgling and new immature adults are likely to start about mid-March.

Eritrea

• **SITUATION**

During January, the first winter generation continued along the central and northern Red Sea coast. Groups and some swarms of immature and mature adults from Wekiro (1548N/3918E) to Karora (1745N/3820E) and the Sudan border during the first two weeks. Late instar hopper, groups and bands had fledged by mid-month. The second generation of hatching started around the 8th. During the second half of the month, more early instar hopper groups and a few bands appeared as the first generation had finished, except for mature adult groups that moved south to the Zula Gulf near Ghelaelo (1507N/4004E) and copulated. By the end of the month, some of the hopper groups were 3rd instar. Control operations treated 14 594 ha.

• **FORECAST**

The second generation will continue with hopper groups and some bands on the central and northern Red Sea coast. Fledgling will start after mid-February, followed by new immature adults and groups that can become mature about mid-March. Locusts are then likely to decrease because of control operations, diminished rainfall, and drying vegetation, and small groups will remain.

Ethiopia

• **SITUATION**

During January, at least one very small immature swarm appeared close to Dire Dawa (0935N/4150E) on the 11th and then separated in the mountains for the next two weeks. Scattered immature transiens adults were seen near Ayasha (1045N/4234E) south of Djibouti on the 12th. In the Somali region, one very small immature swarm were seen on the plateau near Degeh Bur (0813N/4333E) on the 16th followed by a few scattered and groups of adults. No locusts were seen in the Afar region near Semera (1148N/4100E). Control operations treated 340 ha of which 280 ha were by air.

• **FORECAST**

There is a possibility that a few more groups and small swarms are likely to arrive in the Somali region plateau where they could move back and forward along the border with northwest Somalia. If rain occurs, adult groups and swarms will mature and breed between Jijiga and Somalia.

Oman

• **SITUATION**

During January, no locusts were seen in the Musandam Peninsula, north along the Batinah coast, the northern interior between Buraimi (2415N/5547E) and Adam (2223N/5731E), and in the southern interior north of Thumrait (1736N/5401E).

• **FORECAST**

No significant developments are likely.

Saudi Arabia

• **SITUATION**

During January, the first winter generation continued along the Red Sea coast. Hopper groups and bands were present on the central coast from north of Thuwal (2215N/3906E) to Jeddah (2130N/3910E), while immature and mature adult groups were seen along a large area from Yenbo (2405N/3802E) in the north to Lith (2008N/4016E) in the central. An immature swarm was seen south of Lith on the 6th. Fledging was completed at the end of the second dekad, while mature adult groups were nearly finished at the end of the month. Elsewhere, scattered adults were on the south coast near Qunfidah (1909N/4107E) and Jizan (1656N/4233E) during the second week. The second generation laid mainly from Rabigh (2247N/3901E) to Bader with a few places further north near Umm Lajj (2501N/3716E) and further south near Jeddah. Hatching started about the 20th and, by the end of the month, some of the hoppers, groups and bands were 2nd instar. Control operations treated 13 703 ha.

• **FORECAST**

The second generation will continue with hopper groups and some bands, mainly on the central and northern Red Sea coast. Fledgling will start at the end of February, followed by new immature adults and groups during March. Locusts are then likely to decrease because of control operations, diminished rainfall, and drying vegetation, and small groups will remain on the coast or move to the interior for spring breeding.

Somalia

• **SITUATION**

During January, the first winter generation continued along the northwest coast from Berbera (1028N/4502E) west to Zeylac (1121N/4328E) and the Djibouti border. Late instar hopper groups and bands as well as groups and a few swarms of immature and mature adults were present during the first two dekads. A few small immature groups and swarms moved during the second dekad from the coast to the escarpment and plateau into Ethiopia while others went back to Somalia. During the third dekad, the second-generation hatching started about the 21st on the coast while mainly only scattered adults and a few small groups were still left in the first generation. By the end of the month, some of the hopper groups were 2nd instar. Control operations treated 2 087 ha using biopesticides.

• **FORECAST**

The second generation will continue with hopper groups and some bands on the northwest coast. Fledgling will start at the end of February, followed by new immature adults and groups during March. Locusts are then likely to decrease because of control operations, diminished rainfall, and drying vegetation, and remaining groups will eventually move to the plateau.

Sudan

• **SITUATION**

During January, the first winter generation continued on the Red Sea coast from Eritrea to Egypt. Immature and mature groups and many small swarms were present in the central and southern coast from Port Sudan (1938N/3713E) to Karora (1745N/3820E) and the Eritrea border while scattered adults, groups and a few swarms were seen on the northern Red Sea coast and subcoastal area in the northeast. Laying of the second generation occurred from the end of December and during January along the southern and central coast with hatching from about the 10th of January and, by the end of the month, some of the hoppers were 3rd instar in the south. In the northern subcoastal areas, adult groups laid during the second half of the month in Wadi Diib near Sufiya (2119N/3613E) to the Egypt border. Control operations treated 38 736 ha of which 18 650 ha were by air.

• **FORECAST**

The second generation will continue with hopper groups and bands along the Red Sea coast and subcoastal areas in the northeast. Fledgling will start after mid-February, followed by new immature adults and groups that can become mature about mid-March. Locusts are then likely to decrease because of control operations, diminished rainfall, and drying vegetation, and small groups will remain.

Yemen

• **SITUATION**

During January, small groups of mature transiens and gregarious adults copulated in the southeast coast east of Al Ghaydah (1612N/5210E) in the Al Maharah province on the 20th. During the last week, a few immature and mature solitarious adults were seen on the southwest coast between Am Rija (1302N/4434E) and Zinjibar (1306N/4523E). The situation along the Red Sea coast is unknown due to no surveys.

• **FORECAST**

Scattered locusts and perhaps small groups may be present and breeding along parts of the Red Sea coast and the Gulf of Aden, especially if more rain falls in February or March. Small groups and bands along the southeast coast near Al Ghaydah and perhaps in the sub-coastal and interior areas should hatch in the first week of February with fledgling around mid-March.

Bahrain, Democratic Republic of the Congo, Iraq, Israel, Jordan, Kenya, Kuwait, Lebanon, Palestine, Qatar, South Sudan, Syrian Arab Republic, Türkiye, Uganda, United Arab Emirates, and United Republic of Tanzania

• **FORECAST**

No significant developments are likely.

EASTERN REGION

During the spring, seasonal models suggest increase temperature and slightly wetter rains may allow breeding on a small scale to start in south Iran and southwest Pakistan during February and March.

Afghanistan

• SITUATION

No locust reports were received in January.

• FORECAST

No significant developments are likely.

India

• SITUATION

During January, no locusts were seen in Rajasthan and Gujarat.

• FORECAST

No significant developments are likely.

Islamic Republic of Iran

• SITUATION

During January, no locusts were seen in the interior of the southeast near Pishin (2605N/6145E) and Jaz Murian Basis, northeast near Birjand (3252N/5913E), and east of Shiraz (2936N/5234E) as well as the southwest coast near Abadan (3021N/4817E).

• FORECAST

Low numbers of solitarious adults may occur on the south coast in February as temperature and rain increase which could allow breeding on a small scale to start.

Pakistan

• SITUATION

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.

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 (Android: play.google.com; iOS: appl.apple.com; how-to-use videos: tiny.cc/eL3mVideos)
- eLocust3g – a GPS app for emergencies, developed with Garmin (tiny.cc/eLocust3g)
- eLocust3w – an Internet form for emergencies, developed in Kobo (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.

[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.

[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 (www.fao.org/ag/locusts/en/publicat/2581/index.html)
- Animation – a simple SWABO animation for all readers to learn about the world's most dangerous migratory pest (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 (locust-hub-hqfao.hub.arcgis.com/)
- FAO Hand-in-Hand (data.apps.fao.org/)

2024 calendar

- **CRC.** Drone for control field trial, Jeddah, Saudi Arabia (3–7 March)

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^2
- band: 1–25 m^2

Small

- swarm: 1–10 km^2
- band: 25–2,500 m^2

Medium

- swarm: 10–100 km^2
- band: 2,500 m^2 – 10 ha

Large

- swarm: 100–500 km^2
- band: 10–50 ha

Very large

- swarm: 500+ km^2
- 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

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/DLIS Locust Watch. Information, maps, activities, publications, archives, FAQs, links
http://www.fao.org/ag/locusts

IRI RFE. Rainfall estimates every day, dekad and month
http://iridl.ldeo.columbia.edu/maproom/.Food_Security/.Locusts/index.html

JRC Greenness maps. Dynamic maps of green vegetation evolution every dekad
https://locust.cgls.dev/s/6ddC96njJcRxZy7

Lobelia Soil moisture maps. Dynamic maps of soil moisture detected every dekad
https://fao-locust.lobelia.earth

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

NOAA. HYSPLIT locust forecast trajectory model
https://locusts.arl.noaa.gov

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

Zoom Earth. Real time rainfall, winds and temperatures for locust migration
https://zoom.earth

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 Facebook. Information exchange using social media
http://www.facebook.com/faolocust

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

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

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

Desert Locust Summary
Criquet pèlerin – Situation résumée

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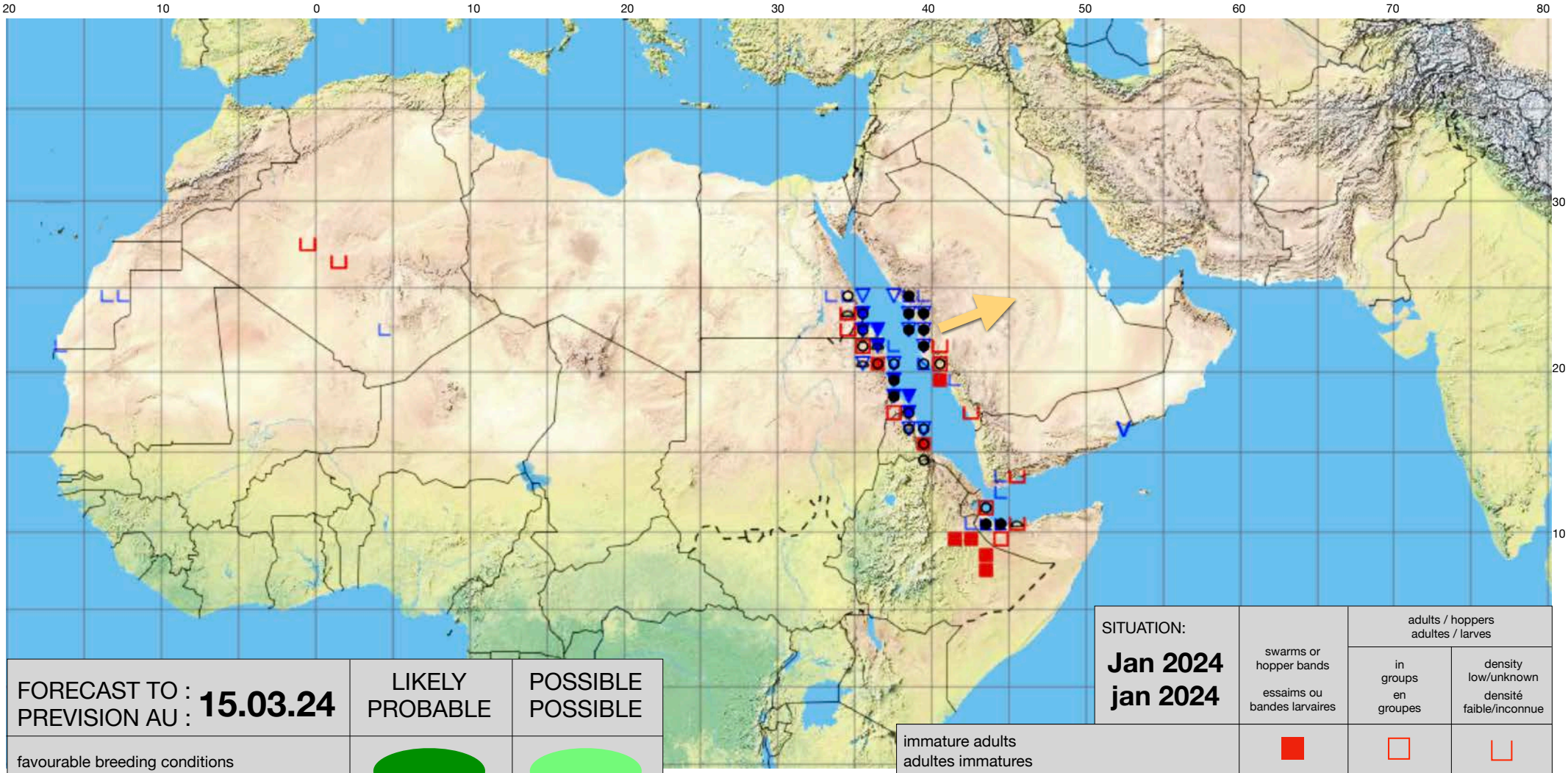

FORECAST TO : PREVISION AU : **15.03.24**	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favourables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarms(s) essaim(s) limité(s)		
non swarming adults adults non essaimant		

SITUATION: **Jan 2024** **jan 2024**	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)	●	○	◡