Food and Agriculture Organization of the United Nations

No. 537 3 July 2023

Desert Locust Bulletin

General situation during June 2023
Forecast until mid-August 2023

WESTERN REGION: CALM

SITUATION. Groups of adults south of the Atlas Mountains in **Morocco** and **Western Sahara** present (523 ha). Adult groups and a few hoppers in central Sahara of **Algeria** (798 ha). Scattered adults and a few small groups crossed into the northern border of **Mauritania** (62 ha).

FORECAST. Any adult groups that are not controlled in the northwest will move south to the northern Sahel in **Mauritania** and perhaps southern **Algeria**, northern **Mali**, and **Niger** where they are likely to disperse. More summer rains and small-scale breeding can occur from mid-July onwards in southern Mauritania, northern Mali, Niger, **Chad**, and perhaps southern Algeria.

CENTRAL REGION: CALM

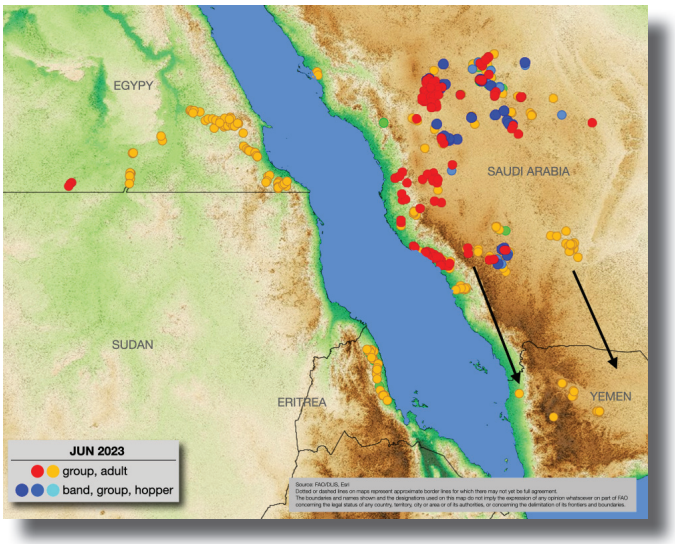
SITUATION. Groups of hoppers and adults as well as bands on the Red Sea coast and interior in **Saudi Arabia** (19 735 ha treated). Scattered hoppers and adults on the Red Sea coast of **Eritrea**; scattered adults in southeast Red Sea coast and southern Nile Valley in **Egypt** (396 ha) with a few groups; isolated adults in the interior, highland and Red Sea coast of **Yemen** and in northeast **Oman**.

FORECAST. Adult groups should decrease in the Red Sea coast and interior of **Saudi Arabia** due to high temperature and no rainfall. Small-scale breeding may occur in the interior and Red Sea coast of **Yemen**. Locust will decline in the Red Sea coast of **Eritrea** but may appear in the western lowlands and breed as well as in the interior of **Sudan**. Isolated adults may remain near the southern Nile Valley in **Egypt**.

EASTERN REGION: CALM

SITUATION. Isolated mature adults seen at one place in Rajasthan, **India**.

FORECAST. Although drier than normal is expected along both sides of the Indo-Pakistan border, some breeding may occur in July near southeast **Pakistan** and southern Rajasthan, **India** due to the Cyclone Biparjoy in mid-June.



SUMMER RAINS STARTED EARLY

The Desert Locust situation was mainly calm during June. Control operations continued in Saudi Arabia where late instar hoppers, groups, and bands became groups of immature adults in the interior and parts of the Red Sea coastal area. In Yemen, scattered adults were seen in the interior as well as in parts of the highland and northern Red Sea coastal areas. Hoppers and solitarious adults were on the Red Sea coast of Eritrea while control operations occurred in a few places on the southeast Red Sea coast and Nile Valley in Egypt. In Northwest and Western Africa, a few control operations occurred in Morocco and Algeria where groups of immature adults were present. In Mauritania, small groups of immature adults arrive in the northwest from further north and some control was done. There was a cyclone on the coast of southeast Pakistan and nearby India. During the forecast, locusts will decline in Saudi Arabia, Morocco, and Algeria due to increasing temperatures and very little or no rainfall. However, locust numbers should increase slightly in the summer breeding area in the northern Sahel from Mauritania to western Eritrea. Small-scale breeding could occur in parts of Yemen and the Indo-Pakistan border if more rains fall.

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.

Telephone: +39 06 570 52420 (7 days/week, 24 hr)
E-mail: eclo@fao.org / faodlislocust@gmail.com
Internet: www.fao.org/ag/locusts
Facebook/Twitter: faolocust

Weather & Ecological Conditions in June 2023

Summer rain started early than normal from Mali to western Eritrea.

WESTERN REGION

In June, light rain fell during the first dekad in northern Niger, central and northern Chad, and southeast Libya. During the second dekad, the rain continued in northern Niger, northwest and northeast Chad, and started in Mali from Kayes in the west to the northeast near Adrar des Iforas and Tamesna, and in southeast Mauritania. Vegetation is probably still mostly dry but is likely to start to become green in some places. In Northwest Africa, there was no rain and vegetation were green in parts of the irrigated areas near the Adrar in the central Sahara of Algeria.

CENTRAL REGION

During June, light rain fell during the first dekad in parts of the interior and a few parts of the central and southern Red Sea coast in Saudi Arabia. During the second dekad, light rains fell in parts of the southern Red Sea coast in Saudi Arabia and Yemen. In the summer area, light rains start to fall in the interior of Sudan and the western lowland of Eritrea during the first two dekads. In Egypt, light rains may have occurred in the southern part of the Western Desert between Sh. Oweinat and Darb Al-Arbain. As a result, annual vegetation was drying out in the interior of Saudi Arabia but was starting to green in the interior of Sudan and western Eritrea. A few showers and small vegetation occurred along parts of the interior of northwest Somalia and the Somali areas of Ethiopia.

EASTERN REGION

During June, light rain fell in parts of the interior areas of Sistan-Baluchistan in southeast Iran and Baluchistan in southwest Pakistan. Vegetation was dry in nearly all spring breeding areas. During the summer area on both sides of the Indo-Pakistan border, moderate and heavy rain fell in the Tharparkar desert of southeast Sindh and in Gujarat and southern Rajasthan where Cyclone Biparjoy with 160 kph made landfall on 15 June near Rann of Kutch. As a result, annual vegetation was starting to become slightly green in some places.

Area Treated

Control operations declined in June to 21 514 ha compared to 47 932 ha in May.

Algeria	798 ha
Egypt	396 ha
Mauritania	62 ha
Morocco	523 ha
Saudi Arabia	19 735 ha

Desert Locust Situation and Forecast

WESTERN REGION

Algeria

• SITUATION

During June, scattered and groups of immature solitarious, transiens, and gregarious adults were present in the central Sahara near Timimoun (2916N/0014E), from Adrar (2753N/0017W) to Reggane (2643N/0010E), and near In Salah (2712N/0229E) as well as a few places in the west to the south of Beni Abbes (3011N/0214W). At mid-month, scattered solitarious hoppers were seen in one place. No locusts were seen in the west near Tindouf (2741N/0811W) and Bechar (3135N/0217W). Ground teams treated 798 ha.

• FORECAST

Some scattered adults and a few small groups in the central Sahara will move south to the southern Sahara near northern Mali and Niger. Summer rains and breeding could occur from mid-July onwards.

Burkina Faso

• SITUATION

No locusts were reported during June.

• FORECAST

No significant developments are likely.

Chad

• SITUATION

No locusts were reported during June.

• forecast

Low numbers of adults are likely to appear in the northern Sahel between Kanem and Fada where some rains occurred in mid-June. Breeding on a small scale could occur July and August if more rain falls.

Libya

• SITUATION

No locusts were reported during June.

• FORECAST

No significant developments are likely.

Mali

• SITUATION

No locusts were reported during June.

• FORECAST

Low numbers of adults are likely to appear in the northern Sahel between Timetrine, Tilemsi Valley, Adrar des Iforas, and Tamesna where some rains occurred in mid-June. Breeding on a small scale could occur July and August if more rain falls.

Mauritania

• **SITUATION**

During June, isolated and scattered immature solitarious adults were seen in the northeast from Atar (2032N/1308W) south to nearly Boutilimit (1732N/1441W). Some of the adults were starting to become mature. During the first week, there were two groups of immature adults between Akjoujt (1945N/1421W) and Aguilal Faye (1827N/1444W). No locusts were seen west of Tasiast (2034N/1531W) and Nouadhibou (2056N/1702W). Ground teams treated 62 ha.

• **FORECAST**

Scattered adults and perhaps a few small groups from Western Sahara, Morocco, and western Algeria could still arrive in the northwest in July and continue south where they will disperse in the northern Sahel. More summer rains and breeding could occur from mid-July onwards between Trarza and Hodh Ech Chargui.

Morocco

• **SITUATION**

During June, scattered and a few small groups of immature solitarious and transiens adults were present during the first three days south of the Atlas Mountains in Draa valley southeast of near Foum El Hassan (2901N/0853W), Tata (2944N/0758W), southwest of Erfoud (3128N/0410W), and further south near Aousserd (2233N/1419W). Control operations treated 523 ha.

• **FORECAST**

Scattered adults and perhaps a few small groups will move south as vegetation becomes dry and temperatures increase. Consequently, no significant developments are likely after July.

Niger

• **SITUATION**

No locusts were reported during June.

• **FORECAST**

Low numbers of adults are likely to appear in the northern Sahel along the central pasture areas and on the Tamesna Plains where some rains occurred in mid-June. Breeding on a small scale could occur in July and August if more rain falls.

Senegal

• **SITUATION**

No locusts were reported during June.

• **FORECAST**

No significant developments are likely.

Tunisia

• **SITUATION**

No locusts were reported during June.

• **FORECAST**

No significant developments are likely.

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 locusts were reported during June.

• **FORECAST**

No significant developments are likely.

Egypt

• **SITUATION**

During June, isolated and scattered immature adults were present on the southeast Red Sea coast near Abu Ramad (2224N/3624E) and on the subcoastal areas near El Sheikh El Shazly (2412N/3438E) while mature adults and a few laying were seen near Abraq (2323N/3451E) as well as the Nile Valley near Aswan (2405N/3256E), Garf Husein (2317N/3252E), and farms near Abu Simbel (2219N/3138E) and Tushka (2247N/3126E). A few immature and mature adult groups were present east of Sh. Oweinat (2219N/2845E). No locusts were seen in the northwest near Siwa (2912N/2531E). Control operations treated 396 ha.

• **FORECAST**

Adults will continue to decline in the southeast Red Sea coastal area. Isolated adults may remain in a few places near the Nile Valley in the south and perhaps in the Western Desert. No significant developments are likely.

Eritrea

• **SITUATION**

During June, mainly fourth and fifth isolated hoppers and immature and mature solitarious adults were seen on the northern and central Red Sea coast between Mehimet (1723N/3833E) to Wekiro (1548N/3918E) due to breeding in May.

• **FORECAST**

Fledgling and solitarious adults will continue on the Red Sea coastal area during July but will decline as temperature increases. Low numbers of solitarious adults may appear in the western lowlands but breeding on a small-scale may not occur since very little rain is expected during July and August this year. No significant developments are likely.

Ethiopia

• **SITUATION**

No locusts were reported during June.

• **FORECAST**

No significant developments are likely.

Oman

• **SITUATION**

During June, a few isolated immature and mature solitarious adults were seen near the northeast coast in a few places

from south of Sur (2234N/5930E) to Duqm (1939N/5743E). No locusts were seen on the Musandam Peninsula, Batinah coast, and in the interior from Buraimi (2415N/5547E) to Adam (2223N/5731E).

• **FORECAST**

No significant developments are likely.

Saudi Arabia

• **SITUATION**

During June, late instar hopper, groups and bands were in the interior from east of Medinah (2430N/3935E) to west of Gassim (2621N/4358E) as well as south towards Zalim (2248N/4210E) during the first two weeks while during the last two weeks, they were further south near Bisha (2000N/4236E) and the Asir Mountains. From mid-month, most of the locusts were fledgling and immature gregarious groups with some mature. On the central coast of the Red Sea between Thuwal (2215N/3906E) to Lith (2008N/4016E), there were scattered and groups of immature gregarious adults while mature adults were further south near Qunfidah (1909N/4107E). On the east side of the Hijaz Mountains, there were immature groups while further east in the interior there were mainly mature groups near Wadi Dawasir (2028N/4747E). A few groups were copulating during the last week south of Gassim. Control operations treated 19 735 ha. Elsewhere, no locusts were seen.

• **FORECAST**

Groups of gregarious adults should decrease on the Red Sea coast and in the interior due to increasing temperatures and very little or no rainfall expected during July and August. Some of the adults and groups may move south towards the northern Red Sea coast and interior of Yemen.

Somalia

• **SITUATION**

No locusts were reported during June.

• **FORECAST**

No significant developments are likely.

Sudan

• **SITUATION**

No locust reports were received in June.

• **FORECAST**

Low numbers of solitarious adults are likely to appear between West Darfur and Kassala states and breed on a small-scale in areas that receive summer rains.

Yemen

• **SITUATION**

During June, a few isolated and scattered immature and mature solitarious adults were seen in the interior near Al Hazm (1610N/4446E) and Marib (1527N/4519E), and at one place in the highlands east of Sana'a (1521N/4412E) and the northern Red Sea coast near Suq Abs (1600N/4312E).

• **FORECAST**

Low numbers of solitarious adults may breed on a small scale in parts of the interior near Al Hazm, Marib, Ataq, and the Hadhramaut Valley as well as parts of the northern Red Sea coast.

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 locusts were reported during June.

• **FORECAST**

No significant developments are likely.

India

• **SITUATION**

During June, isolated mature solitarious adults were seen at one place near Bikaner (2801N/7322E) at mid-month in Rajasthan. No locusts were seen elsewhere in Rajasthan and Gujarat.

• **FORECAST**

Although, drier-than-normal conditions are expected during the summer, vegetation from Cyclone Biparjoy may allow some breeding to occur in Gujarat and southern Rajasthan in July.

Iran

• **SITUATION**

During June, no locusts were seen in the interior of the southeast near Pishin (2605N/6145E) and in the Jaz Murian Basis, the interior of Fars region close to Shiraz (2936N/5234E), and in the southwest coast east of Abadan (3021N/4817E).

• **FORECAST**

No significant developments are likely.

Pakistan

• **SITUATION**

During June, no locusts were seen in the coastal and interior areas of Baluchistan from Gwadar (2508N/6219E) to Panjgur (2658N/6406E), near Uthal (2548N/6637E), and in the summer area near Tharparkar and Nara deserts.

• **FORECAST**

Although, drier-than-normal conditions are expected during the summer, vegetation from Cyclone Biparjoy may allow some breeding to occur in the Tharparkar desert in July.

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)

2023 calendar

- **SWAC.** Desert Locust Information Officer workshop and 33rd session, Rome (18–22 December)

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

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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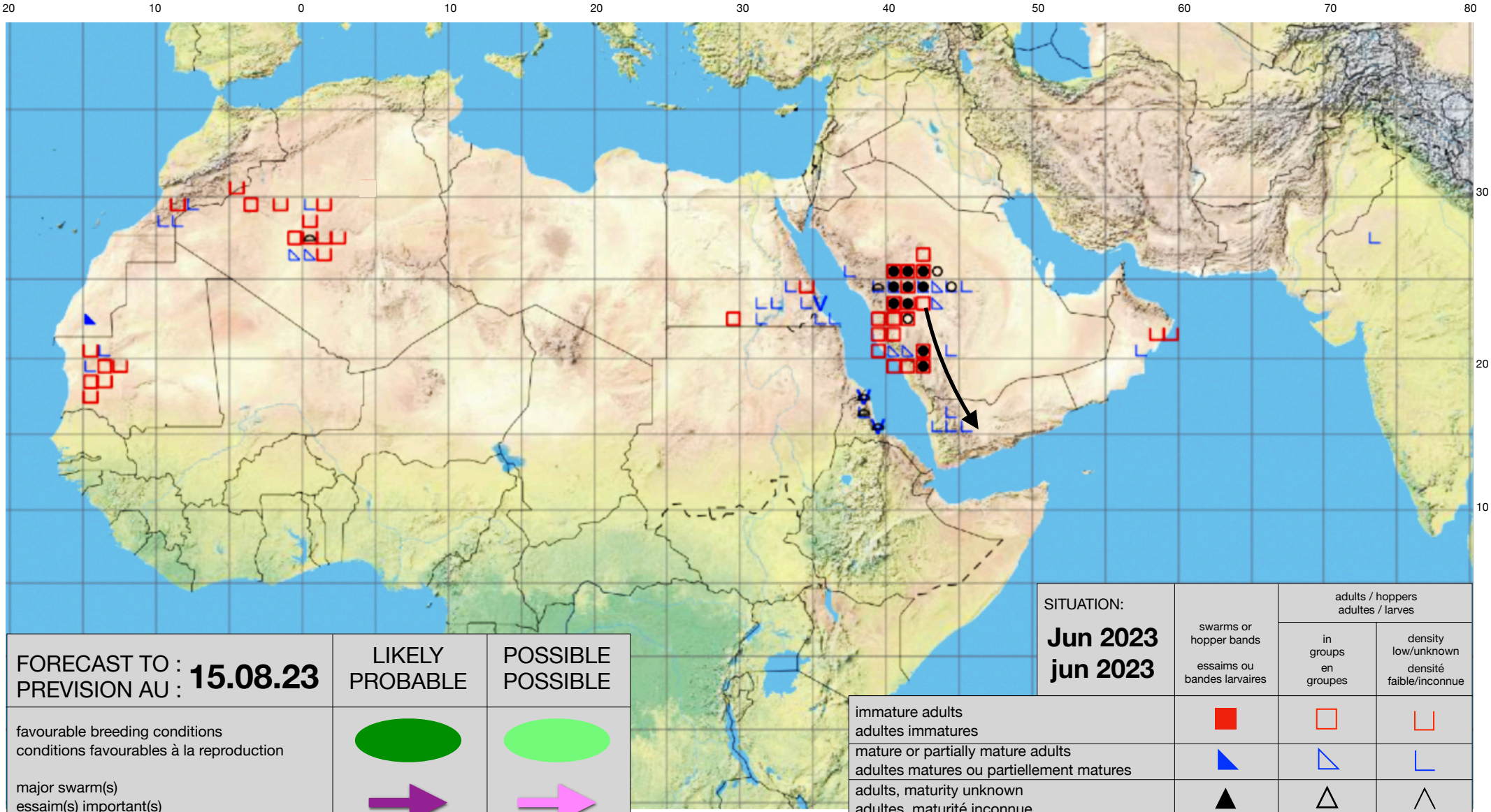

FORECAST TO : PREVISION AU : **15.08.23**	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favourables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarms(s) essaim(s) limité(s)		
non swarming adults adults non essaimant		

SITUATION: **Jun 2023** **jun 2023**	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)	●	○	◡