



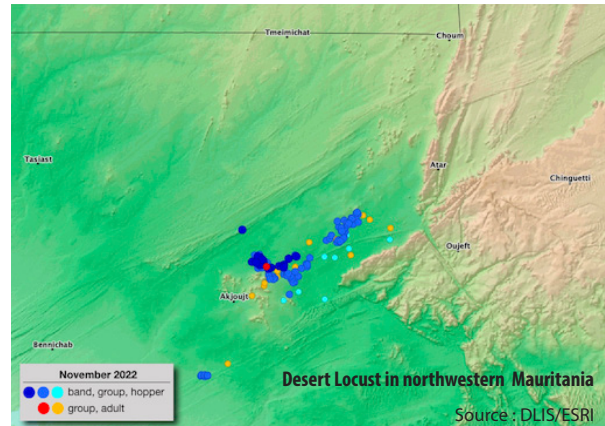
Desert Locust Bulletin

General situation during November 2022 Forecast until mid-January 2023

WESTERN REGION: CALM

SITUATION. A very small outbreak developed in northwestern **Mauritania** (2 298 ha treated) with hopper, groups, and bands. Low numbers of solitarious adults in **Morocco**, central **Algeria**, **Niger**, and northeast **Chad**.

FORECAST. The hopper groups and a few small bands will form adult groups in the outbreak of northwest **Mauritania** during December which should help teams to control. Locust numbers will decrease in **Niger** and **Chad**, and a few locusts will remain in **Morocco** and central **Algeria**.



SMALL OUTBREAK IN MAURITANIA

The Desert Locust situation continued to remain calm during November. A small outbreak developed in early November where hoppers, groups, and bands were seen in an area of about 100 km by 70 km in northwestern Mauritania. Ground teams treated 2 298 ha. In Sudan, low numbers of adults were first seen in the winter breeding areas this year along the Red Sea coast where a few copulating had started. Isolated adults were else seen in coastal areas of Eritrea, southeast Egypt, and northwest Somalia. In Yemen, low numbers of adults have been on the coast since September. In the Western Region, the summer breeding area has finished. During the forecast, December and January may have slightly above-normal rainfall in the northern parts of the Red Sea coast in northern Saudi Arabia, Egypt, and Sudan while southern areas from Eritrea, southern Saudi Arabia, Yemen, and northern Somalia will be drier than normal. As a result, a single generation of small-scale breeding is likely during the winter area. In northwest Mauritania, groups of adults are likely to form in December but should decrease due to control, vegetation that dries out, and rain which is not likely to occur. No significant development is likely.

CENTRAL REGION: CALM

SITUATION. Locust numbers decreased in the summer area of **Sudan** but increased slightly in the Red Sea coast where copulating started. Low number continues in the coast of **Yemen** and less in **Eritrea** and **Egypt**.

FORECAST. Small breeding will occur mainly in **Sudan** and **Yemen** with less in **Eritrea** and **Egypt**. Laying and hatching will occur in December. Low numbers of adults are likely to appear on the Red Sea coastal plains of **Saudi Arabia** and breed on a small scale. A few locusts may breed on a small scale if more rain falls in northwest coast of **Somalia**.

EASTERN REGION: CALM

SITUATION. No locusts present.

FORECAST. 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 November 2022

Good rains fell in northern part of the Red Sea coastal plains in Saudi Arabia.

WESTERN REGION

No significant rain fell during November. Vegetation was still green in northwest Mauritania near Akjoujt and Atar as well as in northeast Chad southeast of Fada. In Algeria, vegetation was green in a few places near irrigation perimeter in the Adrar Valley of the central and in the south near Tamanrasset. For all other areas, vegetation was drying or dry.

CENTRAL REGION

During November, rainfall occurred along the Red Sea coastal plain and northeast subcoastal areas of Sudan, Saudi Arabia, and a few places of northern Somalia. Vegetation was green on the Red Sea coast in Yemen and started to become green on the southern part of the Red Sea coast in Sudan and Saudi Arabia. In northern Saudi Arabia, vegetation was still dry but good rains fell in the third decade on the central and northern areas. Vegetation was also greening on the central areas of Eritrea, Djibouti, and parts of northern Somalia but was still dry in southeast Egypt, interior of Yemen, and in Oman.

EASTERN REGION

No significant rains fell in the region during November. Vegetation was drying out in both sides of the Indo-Pakistan border except for a few places in Nara of Pakistan and western parts of Jaisalmer and Barmer in Rajasthan, India.



Area Treated

Control operations were carried out during November:

Mauritania 2 298 ha



Desert Locust Situation and Forecast

WESTERN REGION

ALGERIA

• SITUATION

During November, isolated immature solitary adults were seen near irrigated perimeters in the Adrar Valley (2753N/0017W). No locusts were present in the south near Tamanrasset (2250N/0528E).

• FORECAST

No significant developments are likely.

CHAD

• SITUATION

During November, isolated mature solitary adults were seen at a few places near Arada (1501N/2040E) and Amdjarass (1604N/2250E) in the northeast. No locusts were present from Kanem to Fada.

• FORECAST

Isolated solitary adults will decrease and no significant developments are likely.

LIBYA

• SITUATION

No locusts were reported during November.

• FORECAST

No significant developments are likely.

MALI

• SITUATION

No surveys were carried out and no locusts were reported during November.

• FORECAST

Low numbers of solitary hoppers and adults will decrease in Timetrine, Adrar des Iforas, and Tamesna. No significant developments are likely.

MAURITANIA

• SITUATION

During November, groups of 1st to 3rd instars transiens hoppers were seen in the first half of the month between Akjoujt (1945N/1421W) and Atar (2032N/1308W). During the second half of the month, 4th and 5th instar transiens and a few small gregarious bands were seen. Very few isolated immature and mature adults were present, including a few copulating and one mature group. Most of the locusts are within an area of about 100 km by 70 km northeast of Akjoujt. There is also a smaller area of about 20 km southwest of Akjoujt. No surveys were carried out in other parts of the northwest. Ground teams treated 2 298 ha.

• FORECAST

Hopper groups and a few small bands will continue in northeast from Akjoujt to Atar as groups of adults are likely to form. These should decrease due to control, vegetation that starts to dry out, and rain which is not likely to occur.

MOROCCO

• SITUATION

During November, scattered mature solitary adults were present in the Adrar Settouf of the Western Sahara between Ma'Tallah (2223N/1502W) and the coast. Further north, isolated immature solitary were seen south of the Wadi Sakia El Hamra near Smara (2644N/1140W) and in the Draa Valley between Assa (2836N/0926W) and Fom El Hassan (2901N/0853W).

• FORECAST

Low numbers of adults will remain in parts of Adrar Settouf, Sakia El Hamra, and Draa Valley. No significant developments are likely.

NIGER

• SITUATION

During November, a few scattered immature solitary adults and one small group were present between Tanout (1458N/0852E) and Tasker (1507N/1041E).

• FORECAST

No significant developments are likely.

SENEGAL

• SITUATION

No locusts were reported during November.

• FORECAST

No significant developments are likely.

TUNISIA

• SITUATION

No locusts were reported during November.

• 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

During November, no locusts were seen in the northern, southern and southeast interior as well as the northern coastal.

• FORECAST

No significant developments are likely.

EGYPT

• SITUATION

During November, only isolated immature adults were seen at one site near Halaib (2213N/3638E). No locusts were seen during the surveys conducted between Shalatyn (2308N/3535E) and Halaib, near Lake Nasser between Abu Simbel and Tushka (2247N/3126E), and in the northwest near Siwa oasis (2912N/2531E).

• FORECAST

A few locusts may appear on the Red Sea coast in the southeast and breed on a small scale if more rainfall appears.

ERITREA

• SITUATION

During November, a few isolated immature solitary adults were present in the central area on the Red Sea coast near Sheib (1551N/3903E) and Akbanazouf Plain (1555N/3910E).

• FORECAST

Small-scale breeding is likely to occur on the central and northern coastal plains if more rainfall appears.

ETHIOPIA

• SITUATION

No reports were received and no locusts were reported in November.

• FORECAST

No significant developments are likely.

KENYA

• SITUATION

No locust reports were received and no locusts were reported in October.

• FORECAST

No significant developments are likely.

OMAN

• SITUATION

During November, no locusts were seen near Musandam Peninsula, on the Batinah coast, and in a few places in the northern interior.

• FORECAST

No significant developments are likely.

SAUDI ARABIA

• SITUATION

During November, no locusts were seen in Red Sea coast from Yenbo (2405N/3802E) to Jizan (1656N/4233E), and 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 November, a few immature solitary adults were seen at one place in the northwest coast southeast of Lughaye (1041N/4356E). No locusts were seen in the coast, escarpment, and plateau of Somaliland, in Puntland near Erigavo (1040N/4720E), Gardo (0930N/4905E), Garowe (0824N/4829E), and in central areas near Galkayo (0646N/4725E).

• FORECAST

A few locusts may breed on a small scale if more rainfall appears.

SUDAN

• SITUATION

During November, scattered immature and mature solitary adults were seen in the winter areas along the Red Sea coast near Tokar (1827N/3741E) and further south near Aiterba (1753N/3819E) and Eritrea. A few copulating adults were found in both areas during the last decade. In the summer breeding area, low numbers of solitary adults were seen on the west of the Red Sea Hills near Haiya (1820N/3621E), the Atbara River and a few near the Bayuda Desert.

• FORECAST

Low numbers of solitary adults will increase slightly with copulating and laying in central and southern Red Sea coastal plain. Hatching should start by the first week of December and fledging from about the second week of January. Breeding may also occur in the northern Red Sea coast and subcoastal area.

YEMEN

• SITUATION

During November, scattered immature and mature solitary adults were seen on the central and north Red Sea coast from Hodeidah (1450N/4258E) to Suq Abs (1600N/4312E). Elsewhere, no locusts were seen in the interior near Bayhan (1452N/4545E), Nisab (1430N/4629E), AlAbr (1608N/4714E), Sayun (1559N/4844E), Thamud (1717N/4955E), and Hat (1719N/5205E).

• FORECAST

Low numbers of solitary adults may increase slightly on the Red Sea coastal plains where breeding can occur if more rains fall.

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 November.

• FORECAST

No significant developments are likely.

INDIA

• SITUATION

During November, no locusts were seen by surveys in Rajasthan and Gujarat.

• FORECAST

No significant developments are likely.

IRAN

• SITUATION

During November, no locusts were seen by surveys in the south and southeast.

• FORECAST

No significant developments are likely.

PAKISTAN

• SITUATION

During November, no locusts were seen by surveys in Tharparkar, Nara, and Cholistan in the summer breeding area as well as the Uthal area near the coastal area in Baluchistan.

• FORECAST

Low numbers of locust will decrease in Tharparkar, Nara, Cholistan, and Uthal.



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 (14-17 March, 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 : 15.01.23	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: Nov 2022 nov 2022	swarms or hopper bands	adults / hoppers adultes / larves	
	essaims ou bandes larvaires	in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures			
mature or partially mature adults adultes matures ou partiellement matures			
adults, maturity unknown adultes, maturité inconnue			
egg laying or eggs pontes ou œufs			
hoppers larves			
hoppers & adults (combined example) larves et adultes (symboles combinés)			