Food and Agriculture Organization of the United Nations

No. 515 3 SEPTEMBER 2021

Desert Locust Bulletin

General situation during August 2021
Forecast until mid-October 2021

WESTERN REGION: CALM

SITUATION. Scattered adults and small-scale breeding in **Chad**.

FORECAST. Small-scale breeding in the northern Sahel of **Mauritania**, **Mali**, **Niger,** and **Chad**.

CENTRAL REGION: THREAT

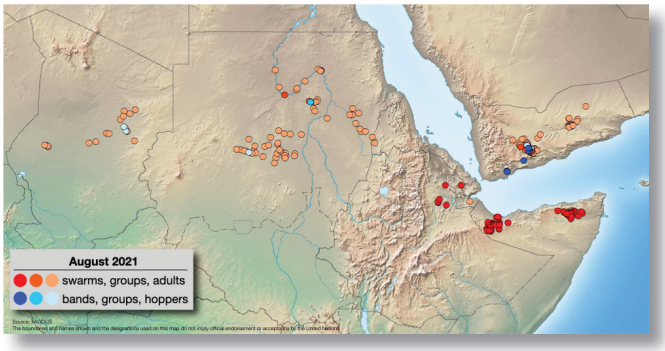
SITUATION. Control operations declined against a few remaining immature swarms in northern **Somalia** (11 985 ha treated); no access in northeast **Ethiopia** (Afar) where laying, hatching and band formation likely, a few bands form in the north; scattered adults in **Djibouti**. Scattered adults and small-scale breeding in **Sudan** with a few groups; scattered adults in western **Eritrea**. Breeding in **Yemen** interior and southern coast with few hopper bands forming; scattered adults elsewhere. Isolated adults in **Egypt**.

FORECAST. A few immature swarms likely to persist in northern **Somalia**. Band and swarm formation expected in northeast **Ethiopia** and perhaps southern **Djibouti** with swarms moving to **Eritrea**, eastern Ethiopia, and northern Somalia for maturation and breeding in October. New swarms could form in **Yemen** interior with eventual migration to coastal areas for winter breeding. Small groups may form in **Sudan** as vegetation dries out.

EASTERN REGION: CALM

SITUATION. No locusts present.

FORECAST. Small-scale breeding along both sides of the **Indo-Pakistan** border will decline as the monsoon retreats.



Bands likely in inaccessible areas of NE Ethiopia

A few small immature swarms persisted in northern Somalia where control operations declined. Although small-scale breeding was underway in Sudan, Chad and Yemen, no breeding was detected in other summer breeding areas in West Africa and along the Indo-Pakistan border despite good rains. The primary concern remains in northeast Ethiopia where hopper bands are likely to be forming but breeding areas cannot be accessed by ground and aerial teams due to insecurity. Similarly, limited breeding is likely to be underway in parts of northern Ethiopia, but limited access has hampered widespread field operations. Consequently, swarms are likely to start forming in northeast Ethiopia at the end of September and continue into October. As vegetation dries out, the swarms are expected to migrate north to winter breeding areas along the coast of Eritrea and eastwards to eastern Ethiopia and northern Somalia where they are expected to join any remaining immature swarms in northern Somalia, mature, and lay eggs with the onset of seasonal rains in October. Given the complete absence of data and information from the Afar region in northeast Ethiopia, it is nearly impossible to predict with precision the scale of the breeding and subsequent migration. Therefore, preparatory steps will need to be taken in advance to respond once swarms appear in adjacent areas. Elsewhere, breeding occurred in the interior of Yemen, giving rise to some hopper bands. New swarms could form from late September onwards and eventually move to winter breeding areas along the Red Sea in Yemen and southwest Saudi Arabia.

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 August 2021

Breeding conditions remained favourable in northeast Ethiopia as well as in the Sahel of West Africa and Sudan.

WESTERN REGION

In the Sahel of West Africa, the Inter-Tropical Convergence Zone (ITCZ) continued its seasonal movement northwards during August, reaching its peak northward position about mid-month over Mauritania (Ouadane), the Mali/Niger/Algeria border, and northeast Chad (Fada). In Mauritania, the ITCZ was about 115 km further north than usual during the second decade while it was slightly further south than normal over northeast Mali and northwest Niger. Nevertheless, good rains fell in all the summer breeding areas of the northern Sahel from western Mauritania to eastern Chad, especially during the first two decades of the month. Thereafter, rains started to decline in some areas as the ITCZ began its southerly retreat. Consequently, ecological conditions were favourable for breeding throughout southern Mauritania, northern Mali and Niger, and in Chad. In northwest Africa, mainly dry conditions prevailed.

CENTRAL REGION

In the Horn of Africa, above-normal rains continued to fall at times in the Afar region of northeast Ethiopia that extended to the railway area north of Dire Dawa, Djibouti, northwest Somalia, and southern Eritrea. A few showers were reported in northeast Somalia. Consequently, breeding conditions remained favourable in Afar and low-lying valleys in Amhara while sufficient vegetation was present for locust survival on the Somali plateau. In Sudan, the Inter-Tropical Convergence Zone (ITCZ) continued its seasonal movement northwards, reaching Dongola during the first decade, which was some 130 km further north than usual. However, it retreated more than 200 km further south than usual during the second decade, lying near Abu Uruq in North Kordofan. Consequently, good rains fell from North Kordofan to the Red Sea Hills during the first decade, but thereafter rainfall declined and mainly occurred in the southern portion of the summer breeding area. Good rains extended into the western lowlands of Eritrea. As a result, breeding conditions remained favourable within a large area between Chad and Eritrea. In the Arabian Peninsula, good rains fell during the first decade in coastal and interior areas of southwest Saudi Arabia between Jizan and Najran, and in Yemen on the Red Sea and Gulf of Aden coast, highlands, and southern interior areas between Marib and Shabwah. Good rains continued during the second decade in Yemen in coastal and highland areas. Ecological conditions were favourable for breeding along the coastal plains from Jizan, Saudi Arabia to Aden, Yemen as well as in parts of the interior in southern Yemen.

EASTERN REGION

The monsoon performed poorly during August in the summer breeding areas along both sides of the Indo-Pakistan border, resulting in little rainfall except for some showers in northern areas of Rajasthan and adjacent Cholistan, Pakistan. From the second decade onwards, there was a substantial deficit of rainfall in Rajasthan. Consequently, green vegetation and favourable breeding conditions were limited.

Area Treated

Control operations declined substantially in August to 12 165 ha compared to 31 610 ha in July.

Somalia	11 985 ha
Sudan	180 ha

Desert Locust Situation and Forecast

WESTERN REGION

ALGERIA

• **SITUATION**

During August, no locusts were seen in the Adrar Valley (2753N/0017W) of the central Sahara and near Tamanrasset (2250N/0528E) in the south.

• **FORECAST**

Scattered adults may remain in the Adrar Valley where limited breeding could occur on the edges of irrigated fields. Small-scale may occur in areas of recent rainfall in the extreme south near the borders of Mali and Niger.

CHAD

• **SITUATION**

During August, isolated immature and mature solitarious adults were present in a few places in Kanem, Batha, and in the northeast between Kalait (1550N/2054E) and Fada (1714N/2132E). Small-scale breeding occurred near Kalait where isolated third and fourth instar hoppers were seen during the last decade.

• forecast

Small-scale breeding is likely to occur in areas of recent rainfall from Kanem to the northeast, causing locust numbers to increase slightly. Once vegetation begins to dry out, a few small groups may form in some areas.

Libya

• **SITUATION**

No locusts were reported during August.

• **FORECAST**

No significant developments are likely.

Mali

• **SITUATION**

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

• **FORECAST**

Small-scale breeding will cause locust to numbers to increase slightly in areas of rainfall in the Adrar des Iforas, Tilemsi Valley, Timetrine and Tamesna.

Mauritania

• **SITUATION**

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

• **FORECAST**

Small-scale breeding will cause locust numbers to increase slightly in areas of rainfall in the south and southeast during September and decline thereafter.

Morocco

• **SITUATION**

No locusts were reported during August.

• **FORECAST**

No significant developments are likely.

Niger

• **SITUATION**

During August, no locusts were seen on the Tamesna Plains between In Abangharit (1754N/0559E) and Arlit (1843N/0721E) and in the Air Mountains.

• **FORECAST**

Small-scale breeding is likely to occur in areas of recent rainfall on the Tamesna Plains and in the Air Mountains, causing locust numbers to increase slightly. Once vegetation begins to dry out, a few small groups may form in some areas.

Senegal

• **SITUATION**

No locusts were reported during August.

• **FORECAST**

No significant developments are likely.

Tunisia

• **SITUATION**

No locusts were reported during August.

• **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**

On 19 August, scattered immature and mature solitarious adults were seen south of Arta (1131N/4251E) near Petit Bara. No locusts were seen in the south or north.

• **FORECAST**

Small-scale breeding is likely to occur in areas of recent rainfall in the south that could cause adults to form a few small immature groups and swarms from late September onwards.

Egypt

• **SITUATION**

During August, a few isolated immature solitarious adults were seen near farms west of Al Minya (2805N/3045E) mixed with African Migratory Locusts. No locusts were seen near Lake Nasser and on the Red Sea coast in the southeast.

• **FORECAST**

No significant developments are likely.

Eritrea

• **SITUATION**

On 5 August, scattered mature solitarious adults were seen at one place in the southern part of the western lowlands near Teseney (1506N/3639E). No locusts were reported thereafter.

• **FORECAST**

Small-scale breeding will cause locust numbers to increase slightly in areas of rainfall in the western lowlands. At the end of the forecast period, a few small immature swarms from Afar in northeast Ethiopia may appear in the highlands moving towards the Red Sea coast.

Ethiopia

• **SITUATION**

During August, several mature swarms were reported in the Afar region near Semera and close to the Djibouti/Eritrea border up to the 17th. As ecological conditions were favourable, the swarms almost certainly laid eggs and hatching and band formation are likely to have occurred by the end of the month. However, this could not be confirmed as all ground and aerial operations were suspended due to insecurity. Elsewhere, no locusts were seen during surveys carried out in the Somali region from Dire Dawa (0935N/4150E) and Ayasha (1045N/4234E) to Jijiga (0922N/4250E) and Degeh Bur (0813N/4333E) and in

the southeast between El Kere (0550N/4205E) and Dolo (0410N/4203E).

• **FORECAST**

Hatching and band formation are likely to continue during early September in the Afar region where immature swarms could start to form at the end of September and continue during October. As conditions dry out, the swarms are expected to move north to Eritrea and southeast to the Somali region where breeding could occur if rains fall.

Kenya

• **SITUATION**

During August, surveys continued in northern and central counties, and no locusts were reported.

• **FORECAST**

No significant developments are likely.

Oman

• **SITUATION**

During August, no locusts were seen in the northern interior between Ibra (2243N/5831E) and Buraimi (2415N/5547E), on the Musandam Peninsula, the Batinah coast, in the northeast near Sur (2234N/5930E), and on the interior plateau in the south near Thumrait (1736N/5401E).

• **FORECAST**

No significant developments are likely.

Saudi Arabia

• **SITUATION**

During August, no locusts were seen in the southwest close to the Yemen border on the Red Sea coast near Jizan (1656N/4233E) and in the interior near Najran (1729N/4408E).

• **FORECAST**

Low numbers of locusts could appear along the southern coastal plains near Jizan and breed on a small scale in areas of recent rainfall.

Somalia

• **SITUATION**

During August, locust infestations continued to decline in the northwest (Somaliland) where several small immature swarms persisted on the plateau north of Hargeisa (0931N/4402E). At times, a few small immature swarms were seen on the coast near Bulhar (1023N/4425E). After mid-month, a few adults were maturing. In the northeast (Puntland), a few immature swarms were seen at times between Erigavo (1040N/4720E) and Iskushuban (1017N/5014E), which are likely to have come from Somaliland. By the end of the month, the number of sightings had increased in Puntland and decreased in Somaliland. No locusts were seen in central areas as far south as Galkayo (0646N/4725E). Control operations treated 11 985 ha of which 11 498 ha were by air.

• **FORECAST**

A few small swarms are likely to persist on the plateau and concentrate in areas of recent rainfall in the northwest and northeast. The swarms are expected to remain immature until seasonal rains occur in October that could allow for a generation of breeding.

Sudan

• **SITUATION**

During August, low numbers of mature solitarious adults were scattered throughout the summer breeding areas in North Kordofan between Hamrat Esh Sheikh (1438N/2756E), Umm Saiyala (1426N/3112E), and Abu Uruq (1554N/3027E), in the Bayuda Desert, and near the Atbara River between Ed Damer (1734N/3358E) and Kassala (1527N/3623E). In the Nile Valley, scattered immature and mature solitarious adults were present between Dongola (1910N/3027E) and Abu Hamed (1932N/3320E), including a group of immature adults near Ed Debba (1803N/3057E). Small-scale breeding occurred in North Kordofan near Sodiri (1423N/2906E) where first to fourth instar solitarious hoppers were seen at the end of the month. Breeding also occurred in the Bayuda Desert where a few groups of hoppers and adults were present. No locusts were seen in West and North Darfur, West Kordofan, Khartoum, Gezira, Blue Nile, Sennar, Gedaref, and Red Sea states. Ground teams treated 180 ha on 3 August.

• **FORECAST**

Small-scale breeding will cause locust numbers to increase slightly within a large area between North Darfur and the Red Sea Hills. Once vegetation dries out, a few small groups may form.

Yemen

• **SITUATION**

During August, small-scale breeding occurred in the interior between Bayhan (1452N/4545E) and Ataq (1435N/4649E) where mainly scattered solitarious adults and a few groups were seen laying eggs. Hatching started during the second week, giving rise to hoppers and bands. A few bands were also detected at the base of the foothills in coastal and subcoastal areas north of Aden (1250N/4503E) and south of Al Baydha (1405N/4542E). Elsewhere in the interior, scattered mature solitarious adults were seen near Shabwah (1522N/4700E), near Sayun (1559N/4844E) in Wadi Hadhramaut, and on the plateau towards Thamud (1717N/4955E). No locusts were seen in Marib and Al-Mahra governorates.

• **FORECAST**

Locust numbers will continue to increase due to breeding and more band formation in southern areas of the interior where a few small swarms are likely to form from mid-September onwards, especially if vegetation begins to dry out. Any swarms that do form are likely to eventually reach the Red Sea and Gulf of Aden coast for winter breeding.

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 during August.

• FORECAST

No significant developments are likely.

India

• SITUATION

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

• FORECAST

Small-scale breeding may occur in parts of Rajasthan and Gujarat. No significant developments are likely.

Iran

• SITUATION

During August, no locusts were seen or reported in coastal and interior areas of the south, and in the northeast.

• FORECAST

No significant developments are likely.

Pakistan

• SITUATION

During August, no locusts were seen or reported in the summer breeding areas in Tharparkar, Nara and Cholistan deserts as well as west of Karachi in the Lasbela (2614N/6619E) area.

• FORECAST

Small-scale breeding may occur in parts of Cholistan, Nara and Tharparkar. No significant developments are likely.

Announcements

Locust warning levels

A colour-coded scheme indicates the seriousness of the current Desert Locust situation: **green** for *calm*, **yellow** for *caution*, **orange** for *threat*, and **red** for *danger*. The scheme is applied to the Locust Watch web page and to the monthly bulletins. The levels indicate the perceived risk or threat of current Desert Locust infestations to crops and appropriate actions are suggested for each level.

Locust reporting

Calm (green) periods. Countries should report at least once/month and send RAMSES data with a brief interpretation.

Caution (yellow), threat (orange) and danger (red) periods. During locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent regularly every three days.

Bulletins. Affected countries are encouraged to prepare decadal and monthly bulletins summarizing 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 two days 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.

Desert Locust upsurge and response

On 17 January 2020, the Director-General of FAO activated the L3 protocols, the highest emergency level in the United Nations system, in FAO to allow fast-tracking an effective response to the upsurge in the Horn of Africa.
[www.fao.org/locusts]

eLocust3 tools

In addition to the original eLocust3 tablet, FAO has developed three new free tools – a mobile app (eLocust3m), a GPS app (eLocust3g), and an Internet form (eLocust3w) – for improving survey and control reporting by field teams and communities. The data are critical for monitoring the situation and organizing control operations in each country, and feeds into FAO's global early warning system in near real time.
[http://www.fao.org/ag/locusts/en/activ/2573/eL3suite/index.html]

eLocust3mPRO

The eLocust3m mobile app now includes a PRO module to be used by well-trained locust teams for entering complete data on ecology, weather, locust, control, and safety. Teams that return to network coverage at the end of the day can use eLocust3mPRO while those teams that remain for several days in areas without coverage should continue to use the original eLocust3 tablet that sends data via satellite. The updated eLocust3m app will be available for Android smartphones on the Google Play Store.
[https://play.google.com/store/apps/details?id=plantvillage.locustsurvey&hl=en&gl=US]

Desert Locust Standard Operating Procedures (SOPs)

A new SOP on Biology as well as an updated Ground Survey SOP, including instructions on how to use eLocust3, eLocust3g and eLocust3m, are available on Locust Watch.

Amharic and Somali versions are available now while French and Arabic versions will be coming soon. The SOPs are pocket-sized and meant to be used in the field. [http://www.fao.org/ag/locusts/en/publicat/gl/sops/index.html]

Desert Locust posters

FAO in collaboration with OCHA has developed six simple, easy to understand posters for communities that may be affected by locusts. The purpose is to provide basic messaging on pesticide containers, safety measures, pesticide exposure, farmer advice, Desert Locust, and following instructions. The posters can be edited. [http://www.fao.org/ag/locusts/en/publicat/2581/index.html]

Desert Locust animation

FAO in collaboration with SWABO has produced a simple animation that explains the danger of Desert Locust. [https://www.youtube.com/watch?v=3TOhuA-v1m4]

Locust Hub

FAO in partnership with ESRI operates a centralized hub for the latest Desert Locust data and progress on the emergency response to the Desert Locust upsurge. [https://locust-hub-hqfao.hub.arcgis.com]

Hand-in-Hand geospatial platform

FAO has developed the Hand-in-Hand geospatial platform that also integrates Desert Locust data from the Locust Hub. [https://data.apps.fao.org]

Calendar

- **CLCPRO.** 10th session, Algiers, Algeria (tbc)
- **CRC.** 32nd session, Jeddah, Saudi Arabia (14–18 November)
- **DLCC.** 42nd session, Nairobi, Kenya (8–11 March 2022, tbc)

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*. No threat to crops; maintain regular surveys and monitoring

Yellow

- *Caution*. Potential threat to crops; increased vigilance is required; control operations may be needed

Orange

- *Threat*. Threat to crops; survey and control operations must be undertaken

Red

- *Danger*. 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

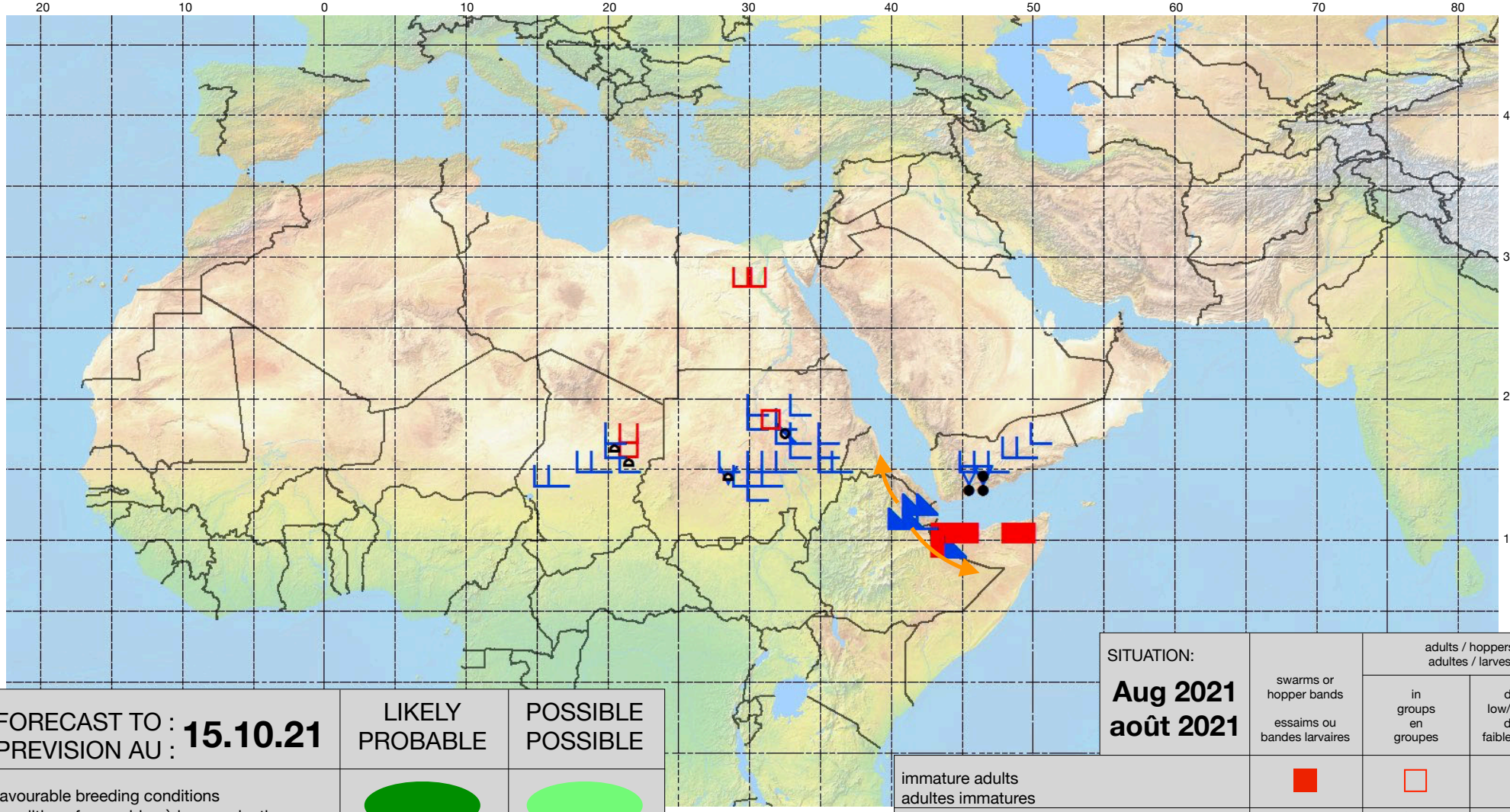
FAOLocust Facebook. Information exchange using social media
http://www.facebook.com/faolocust

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

515



FORECAST TO : PREVISION AU : **15.10.21**	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: **Aug 2021 août 2021**	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)	◘	◙	⊔