Food and Agriculture Organization of the United Nations

No. 507 4 JANUARY 2021

Desert Locust Bulletin

General situation during December 2020
Forecast until mid-February 2021

WESTERN REGION: CALM

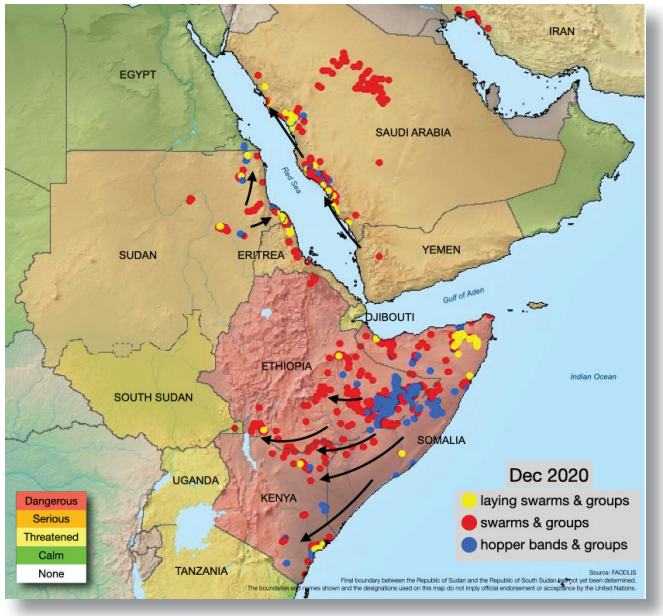
SITUATION. Control operations against groups that formed from previous breeding in **Mauritania** (485 ha treated), **Niger** (2 470 ha), and **Algeria** (43 ha); adult groups in **Mali**; isolated adults in **Chad** and **Morocco**.
FORECAST. Small infestations will persist in **Mauritania**, **Mali**, **Niger**, and **Morocco**; limited breeding in Mauritania and **Algeria**.

CENTRAL REGION: THREAT

SITUATION. Swarms form in eastern **Ethiopia** (85 382 ha treated) and central **Somalia** (39 101 ha) that move to southern Ethiopia and **Kenya** (1 336 ha) where local breeding in progress; hatching and bands in northern Somalia; swarms in **Saudi Arabia** (61 075 ha) with hatching and bands on Red Sea coast; groups and swarms on coast of **Sudan** (66 488 ha) and **Eritrea** (1 780 ha) for breeding; limited breeding in southeast **Egypt** (235 ha); scattered adults on Red Sea and Gulf of Aden coasts in **Yemen**.
FORECAST. More swarms to invade southern **Ethiopia** and **Kenya** where they will mature and lay, giving rise to hopper bands; more hatching and bands in northern **Somalia** and Red Sea coast of **Saudi Arabia** with new swarms to form late January onwards; limited breeding and hopper bands on Red Sea coast in **Sudan**, **Eritrea**, **Egypt**, and **Yemen**.

EASTERN REGION: CALM

SITUATION. Adult groups persist on southwest coast of **Iran**.
FORECAST. Eventual breeding and hopper bands likely on southwest coast of **Iran**; low numbers prevail in southeast Iran and southwest **Pakistan**.



Invasion of Kenya that will continue

Numerous immature swarms formed in eastern Ethiopia and central Somalia, which moved to southern Ethiopia, reaching northern Kenya on 21 December. More swarms will arrive during January and spread throughout southern Ethiopia and northern, central, and eastern counties of Kenya where they will mature and lay eggs that will hatch and give rise to hopper bands from late January onwards. Swarms bred and caused hopper bands to form in areas affected by Cyclone Gati in northern Somalia. Swarms appeared on the Red Sea coast of Saudi Arabia, perhaps from Yemen, and widespread breeding led to hopper bands; swarms also reached interior areas. Adult groups and a few swarms appeared on the coast of Sudan and Eritrea where continuing breeding, albeit on a smaller scale than Saudi Arabia, will cause hopper bands to form. Intensive control operations treated more than 336 000 ha during December, and efforts should be maintained. Control was not required in Yemen where locusts remained scattered along the coast. In the Western Region, locusts that concentrated and formed small groups were treated in Mauritania, Niger, and Algeria. In southwest Asia, adult groups in southwest Iran will eventually breed.

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 December 2020

Despite little rain, breeding conditions remained favourable in northern Somalia and along both sides of the Red Sea.

WESTERN REGION

No significant rain fell in the region during December for the second consecutive month. Consequently, vegetation dried out except in a few low-lying areas where locusts concentrated in small pockets of vegetation that remained green in west and northwest Mauritania (Trarza, Inchiri and southwest Adrar), northern Mali (Tilemsi Valley), northern Niger (northern Tamesna), and southern Algeria. Annual vegetation also remained green in a few places of northeast Chad near Kalait, in the Adrar Settouf region in southern Western Sahara, in the Draa Valley along the southern side of the Atlas Mountains in Morocco, and near irrigated areas in the Adrar Valley of the central Sahara in Algeria.

CENTRAL REGION

Very little rain fell in the region during December. Vegetation continued to dry out in the summer breeding areas in the interior of Sudan, but conditions remained favourable for breeding in the northeast subcoastal areas as well as on the Red Sea coast in Sudan, Eritrea, Saudi Arabia, and Yemen. Light rain fell on the Red Sea coast of Yemen during the second week while light to moderate showers fell on the Tihama and Gulf of Aden on 19–20 December, causing some wadis to flood in Lahij and Abyan provinces of the south where conditions were generally dry along coast. In the Horn of Africa, light rains fell during the first and third decades in southwest Ethiopia, northwest Kenya, parts of eastern Kenya along the Somalia border, and in southern Somalia where breeding conditions should improve. In eastern Ethiopia and central Somalia, vegetation was starting to dry out in some places because of little rainfall. Conditions remained favourable on the plateau and in coastal areas of northern Somalia from the heavy rains that fell in late November with Cyclone Gati.

EASTERN REGION

Light to moderate rains fell during the first decade of December in coastal and subcoastal areas of Bushehr in southwest Iran where good rains had fallen during the second half of November. Although this is likely to cause ecological conditions to become suitable for locust survival and breeding, cool temperatures will delay locust maturation. Elsewhere in the region, conditions remained dry and unfavourable for breeding.

Area Treated

Control operations during December treated nearly 336 071 ha compared to 200 165 ha in November.

Algeria	43 ha
Egypt	235 ha
Eritrea	1 780 ha
Ethiopia	210 673 ha
Kenya	1 336 ha
Mauritania	485 ha
Niger	2 470 ha
Saud Arabia	61 075 ha
Somalia	39 101 ha
Sudan	18 873 ha

Desert Locust Situation and Forecast

WESTERN REGION

Mauritania

• **SITUATION**

During December, a few groups of mature adults persisted in Trarza to the northeast of Aguilal Faye (1827N/1444W) where hatching continued in the first decade. Mainly late instar solitarious and *transiens* hoppers concentrated to form small groups and a few limited bands that fledged and gave rise to a few groups of immature adults near Aguilal Faye and northeast of Nouakchott (1809N/1558W). Low numbers of immature and mature solitarious adults were scattered throughout Trarza and Inchiri. Ground teams treated 485 ha of which 325 ha were with biopesticide.

• **FORECAST**

Small groups of adults are likely to persist in Trarza and Inchiri, extending to southwest Adrar, where small-scale breeding could occur in any favourable areas.

Mali

• **SITUATION**

During December, groups of immature and mature adults formed in areas of previous breeding in the Tilemsi Valley of the northeast between Aguelhoc (1927N/0052E) and Ti-n-kar (1926N/0022W).

• **FORECAST**

Low numbers of adults are likely to persist in parts of the Adrar des Iforas.

Niger

• **SITUATION**

During December, groups of immature and mature adults, including an immature swarm, formed in areas of earlier

breeding on the northern Tamesna Plains northwest of Arlit (1843N/0721E). A few solitarious hoppers and scattered immature and mature solitarious adults were also present. Ground teams treated 2 470 ha.

• **FORECAST**

Locusts will decline on the Tamesna Plains while low numbers of adults are likely to persist in parts of the Air Mountains.

Chad

• **SITUATION**

During December, scattered immature and mature solitarious adults persisted in the northeast near Kalait (1550N/2054E) and Amdjarass (1604N/2250E).

• **FORECAST**

No significant developments are likely.

Senegal

• **SITUATION**

No locusts were reported during December.

• **FORECAST**

No significant developments are likely.

Benin, Burkina Faso, Cameroon, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Nigeria, Sierra Leone, and Togo

• **FORECAST**

No significant developments are likely.

Algeria

• **SITUATION**

During December, groups of immature adults from earlier breeding were present in the extreme south on the border of Niger southwest of In Guezzam (1934N/0546E). Other immature groups were seen in the southeast near Djanet (2434N/0930E) while scattered mature solitarious adults were present west of Tamanrasset (2250N/0528E), in the Adrar Valley (2753N/0017W) of the Central Sahara, and in the west between Tindouf (2741N/0811W) and the Mauritania border. Ground teams treated 43 ha.

• **FORECAST**

Small-scale breeding could occur near Tindouf and in the Central Sahara once temperatures warm up and if rains occur.

Morocco

• **SITUATION**

During December, scattered mature solitarious adults were present in the southern part of the Western Sahara between Aousserd (2233N/1419W) and the Mauritania border. Immature and mature solitarious adults were seen along the southern side of the Atlas Mountains in the Draa Valley near Assa (2836N/0926W) and Tata (2944N/0758W).

• **FORECAST**

Low numbers of adults are likely to persist in parts of the Western Sahara and the Draa Valley.

Libya

• **SITUATION**

No reports were received during December.

• **FORECAST**

No significant developments are likely.

Tunisia

• **SITUATION**

No locusts were reported during December.

• **FORECAST**

No significant developments are likely.

CENTRAL REGION

Sudan

• **SITUATION**

During December, only a few hopper groups remained along the Atbara River as most had fledged and formed groups of immature and mature adults, of which a few were copulating. Several mature swarms were present on the western side of the Red Sea Hills between Haiya (1820N/3621E) and Sinkat (1855N/3648E). In Tokar Delta (1827N/3741E), a few mature adult groups and a first instar band were present in the first week. After mid-month, immature and mature adult groups and a few swarms were seen on the southern coast near Aqiq (1813/N3811E) and Karora (1745N/3820E). In the northeast, a few swarms were copulating at the beginning of the month in Wadi Diib near Sufiya (2119N/3613E) while groups of immature and mature adults were present further south in Wadi Oko near Tomala (2002N/3551E). A mature adult group was seen on the northern coast near Oseif (2146N/3651E). Scattered mature solitarious adults were present on the central coast. Ground teams treated 18 873 ha of which 14 465 ha were by air.

• **FORECAST**

As breeding continues on the Red Sea coast and in subcoastal areas of the northeast, locust numbers will increase with further hatching that is expected to give rise to hopper groups and, in the south, a few hopper bands.

Eritrea

• **SITUATION**

In early December, locally bred immature swarms were present on the Red Sea coast near Sheib (1551N/3903E) and further north between Mehimet (1723N/3833E) and the Sudan border where mature swarms were also seen. Immature swarms were also reported near Ghelaelo (1507N/4004E). Thereafter, adult groups and at least one swarm were seen laying eggs from the Sudan border to about 60 km south of Mehimet. By the last week of the month, some of these eggs hatched and early instar hopper groups were forming. Scattered solitarious adults were

present near Sheib. On the 24th, an immature swarm was seen along the Zula Gulf southeast of Foro (1515N/3937E) and other immature swarms were seen on the southern coast near Tio (1441N/4057E) at the end of the month. Ground teams treated 1 780 ha.

• **FORECAST**

More hatching is expected to occur on the northern coast, causing an increasing number of hopper groups and perhaps a few small bands to form. Fledgling should start by the end of January, giving rise to immature adult groups and perhaps a few small swarms.

Ethiopia

• **SITUATION**

During December, widespread breeding occurred in Warder and Kebri Dehar zones of the eastern part of Somali region where hatching finished by the end of the first week. Most of the hopper groups and bands were late instar and, as they fledged, there was an increasing number of immature swarms that formed as the month progressed. The swarms began moving south to the Shebelle River at mid-month, continuing to Afder zone and, by the 25th, reaching the Juba River, Dolo (0410N/4203E), and Liben and Dawa zones near the Kenya border. Some swarms moved west to Fike zone and Bale zone (Oromia), and southwest to Borena zone and the Kenya border. Swarms also reached the southern Rift Valley to the south and west of Teltele (0504N/3723E) and in South Omo of SNNP where a few swarms were seen copulating earlier in the month while other mature swarms were reported after mid-month. During the last week, immature and mature swarms appeared in the highlands near Harar (0919N/4206E) where one swarm was seen copulating while groups and swarms were maturing in eastern Somali region. In the northeast, a few immature swarms appeared from Eritrea in the extreme north of Afar on the 8th and were seen flying southwards. Control operations treated 210 673 ha of which 130 780 ha were by air.

• **FORECAST**

The remaining hopper bands will fledge in the Somali region and form immature swarms. While most of the swarms will move south and southwest during January, some could stay and breed in limited areas that remain favourable. Swarms in the south, the southern Rift Valley, and the Harar Highlands will mature and breed with hatching and band formation commencing from mid-January onwards. Consequently, intensive survey and control operations should be maintained in current areas and increase in areas where breeding is expected.

Djibouti

• **SITUATION**

No locusts were reported during December.

• **FORECAST**

Small infestations may be present or appear in the south. Small-scale breeding may occur on the coastal plains east of the capital.

Somalia

• **SITUATION**

During December, hatching and band formation continued in central areas between Galkayo (0646N/4725E) and Belet Weyne (0444N/4512E) until about mid-month. Thereafter, an increasing number of hopper bands fledged and formed immature swarms that moved southwards. In the north, mature swarms were present and laying eggs in areas that received late November rains from Cyclone Gati on the plateau between Hargeisa (0931N/4402E), Erigavo (1040N/4720E), Iskushuban (1017N/5014E), and east of Gardo (0930N/4905E) as well as in coastal areas of the northwest near Bulhar (1023N/4425E) and the northeast near Bosaso (1118N/4910E). During the last week, hatching occurred and an increasing number of first instar hopper bands formed. Control operations treated 39 101 ha of which 18 464 ha were by air.

• **FORECAST**

More hatching is expected to occur on the northern plateau and along the northwest and northeast coastal plains until at least mid-January, which will cause an increasing number of hopper bands to form, leading to the formation of immature swarms from early February onwards. A few more late swarms could form in central areas and move south to Kenya.

Kenya

• **SITUATION**

During December, mature swarms from southern Somalia arrived on the coast and laid eggs during the second week, giving rise to early instar hopper bands between Lamu (0216S/4054E) and Mombasa (0402S/3939E). Other mature swarms arrived during the second week in Mandera county of the northeast and near the Ethiopian border in Marsabit county. Hopper groups and bands formed from earlier swarm laying during November in a few sporadic areas of Taita-Taveta, along the Tana River, near the Somalia border in Garissa county, and in Wajir county near Buna (0247N/3930E). From 21 December onwards, the first wave of immature swarms from eastern Ethiopia and central Somalia arrived in Mandera county where several swarms were seen along the Dawa River on the Ethiopian border west of Rhamu (0356N/4113E). While some crossed backed to Ethiopia, other swarms spread to Wajir, Marsabit, Garissa, Tana River, and Kitui counties. By the end of the month, some of the swarms were becoming mature. Ground teams treated 1 336 ha.

• **FORECAST**

Immature swarms will form from ongoing local breeding and mix with other immature swarms arriving from the north. A substantial number of swarms are expected to spread throughout northern and central counties during January.

The swarms will mature and lay eggs in sandy, moist areas mainly in the north and east, and perhaps in the centre. Hatching and band formation is expected to commence from late January onwards. Intensive survey and control operations are required in all areas.

South Sudan

• **SITUATION**

No locusts were reported during December.

• **FORECAST**

There is a low risk that a few small swarms from adjacent areas of Kenya and southwest Ethiopia could reach Eastern Equatoria.

Uganda

• **SITUATION**

No locusts were reported during December.

• **FORECAST**

There is a low risk that a few small swarms from adjacent areas of Kenya could reach Karamoja.

Tanzania

• **SITUATION**

No locusts were reported during December.

• **FORECAST**

There is a low risk that a few small swarms from adjacent areas of Kenya could appear in border areas of the northeastern regions of Kilimanjaro, Manyara, and Tanga.

Egypt

• **SITUATION**

During the last week of December, a few groups of late instar hoppers, immature and mature adults from earlier breeding persisted in subcoastal areas of the Red Sea along some places in Wadi Diib to the west of Abu Ramad (2224N/3624E). Limited laying was in progress. Isolated immature solitarious adults were present south of Halaib (2213N/3638E) while isolated mature solitarious adults were seen further north to the west of Shalatyn (2308N/3535E). No locusts were seen elsewhere on the Red Sea coast to Berenice (2359N/3524E) and near Lake Nasser in the Tushka (2247N/3126E) and Abu Simbel (2219N/3138E) areas. Ground teams treated 235 ha.

• **FORECAST**

Locust numbers are likely to increase slightly on the Red Sea coast in the southeast as breeding continues, which could give rise to a few hopper groups and bands.

Saudi Arabia

• **SITUATION**

During the first week of December, numerous immature adult groups and swarms were reported on the central Red Sea coast between Qunfidah (1909N/4107E) and Mecca (2125N/3949E), and in the north near Umm Lajj (2501N/3716E) that quickly matured and laid eggs between Jizan (1656N/4233E) and Jeddah (2130N/3910E) and on the north coast from Masturah (2309N/3851E) to north of Umm Lajj. Hatching started on about the 20th and early instar hopper groups and bands formed between Qunfidah and Lith (2008N/4016E), and near Bader (2346N/3847E). An increasing number of immature adult groups and swarms were reported in the interior during the second and third weeks near Gassim (2621N/4358E) and Hail (2731N/4141E) where at least one group began to mature. Control operations treated 61 075 ha of which 6 850 ha were by air.

• **FORECAST**

More hatching will cause additional hopper groups and bands to form on the Red Sea coast from Jizan to nearly Duba. Fledging and the formation of immature adult groups and swarms should start by the end of January and continue during February when they could move to spring breeding areas in the interior where current groups and swarms will slowly mature and eventually breed once temperatures warm up in areas that receive rainfall.

Yemen

• **SITUATION**

During December, scattered immature and mature solitarious adults were present at numerous places along a 200 km stretch of the Red Sea coast between Suq Abs (1600N/4312E) and Zabid (1410N/4318E). Late instar solitarious hoppers were seen at a few places near Bajil (1458N/4314E) and south of Hodeidah (1450N/4258E), indicating that laying occurred in late October. On the 8th, a maturing swarm was seen near Sana'a (1521N/4412E) coming from the west. On the southern coast, low numbers of immature and mature solitarious adults persisted between Am Rija (1302N/4434E) and Ahwar (1333N/4644E) during the last week.

• **FORECAST**

Locust numbers will increase on the Red Sea coast as breeding continues, which could give rise to hopper groups and bands. Breeding is likely to occur in coastal areas of the south, especially in areas of recent rains and floods in Lahij and Abyan, which will cause an increase in locust numbers.

Oman

• **SITUATION**

During December, no locusts were seen during surveys carried out in the northern interior near Buraimi (2415N/5547E) and in southern province of Dhofar near the Yemen border.

• **FORECAST**

No significant developments are likely.

Bahrain, D.R. Congo, Iraq, Israel, Jordan, Kuwait, Lebanon, Palestine, Qatar, Syria, Turkey, and UAE

• FORECAST

No significant developments are likely.

EASTERN REGION

Iran

• SITUATION

During December, groups of immature adults were present along the southwest coast northwest of Bushehr (2854N/5050E), mixed with immature and mature solitarious adults.

• FORECAST

Adults will slowly mature along the southwest coast where they are expected to eventually lay in areas that receive rainfall and once temperatures warm up. Low numbers of adults may be present and will persist in parts of Hormozgan and Sistan-Baluchistan.

Pakistan

• SITUATION

No locusts were seen during surveys in the Lasbela Valley west of Karachi (2450N/6702E) in December.

• FORECAST

Low numbers of adults may be present and will persist in Baluchistan. No significant developments are likely.

India

• SITUATION

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

• FORECAST

No significant developments are likely.

Afghanistan

• SITUATION

No locust reports were received during December.

• FORECAST

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. See www.fao.org/locusts for more details.

New eLocust3 tools

FAO has developed three new free tools for improving Desert Locust survey and control reporting: eLocust3g, eLocust3m, eLocust3w (http://www.fao.org/ag/locusts/en/activ/DLIS/eL3suite/index.html). Each tool allows the recording of basic survey and control data in the field while offline that is shared within the country in real time.

Locust Hub

FAO in partnership with ESRI has developed 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).

Calendar

CRC. 32nd session (virtual), 22–25 February 2021

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 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 plagues only: Bahrain, Iraq, Israel,

Jordan, Kenya, Kuwait, Lebanon, Palestine, Qatar, South Sudan, Syria, Tanzania, Turkey, UAE and Uganda

Eastern

- Locust-affected countries in South-West Asia: Afghanistan, India, Iran and Pakistan.

Useful tools and resources

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

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

FAO regional commissions. Western Region (CLCPRO), Central Region (CRC), South-West Asia (SWAC)
http://www.fao.org/ag/locusts

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

IRI Greenness maps. Dynamic maps of green vegetation evolution every decade
http://iridl.ldeo.columbia.edu/maproom/Food_Security/Locusts/Regional/greenness.html

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

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

eLocust3 suite. Digital tools for data collection in the field (mobile app, web form, GPS)
http://www.fao.org/ag/locusts/en/activ/DLIS/eL3suite/index.html

eLocust3 training videos. A set of 15 introductory training videos are available on YouTube
https://www.youtube.com/playlist?list=PLf7Fc-oGpFHEdv1jAPaF02TCfpcnYoFQT

RAMSESv4 training videos. A set of basic training videos are available on YouTube
https://www.youtube.com/playlist?list=PLf7Fc-oGpFHGyzXqE22j8-mPDhhGNq5So

RAMSESv4 and eLocust3. Installer, updates, videos, inventory and support
https://sites.google.com/site/rv4elocust3updates/home

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

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

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

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

Desert Locust Summary
Criquet pèlerin – Situation résumée

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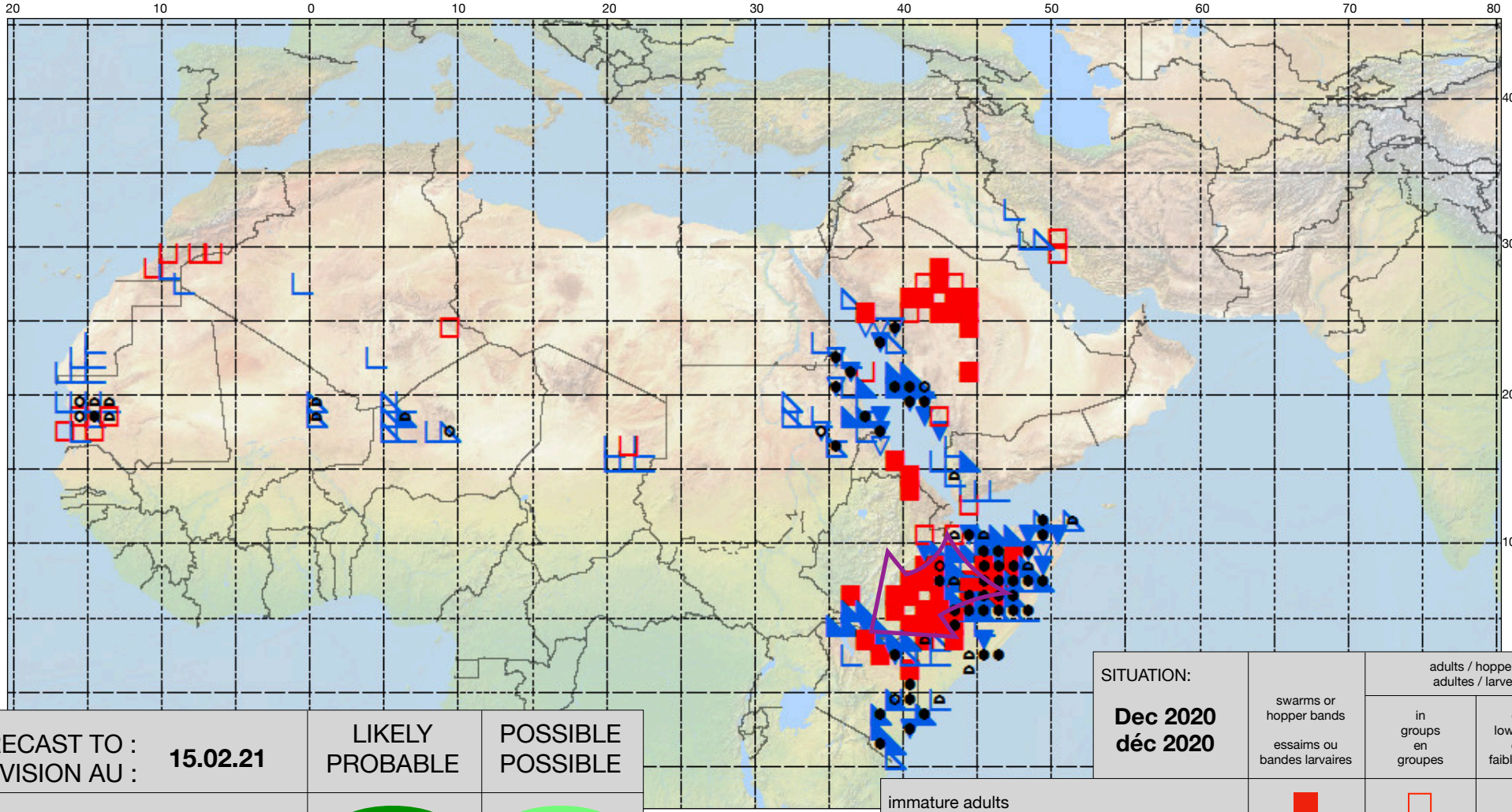

FORECAST TO : PREVISION AU : **15.02.21**	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favourables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarms(s) essaim(s) limité(s)		
non swarming adults adults non essaimant		

SITUATION: **Dec 2020 déc 2020**	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)	◘	◙	⌓