



# Desert Locust Bulletin

## General situation during November 2020 Forecast until mid-January 2021

### WESTERN REGION: CALM

**SITUATION.** Control operations against groups that formed from breeding in **Mauritania** (258 ha treated), **Niger** (1 398 ha), and **Algeria** (167 ha); isolated hoppers and adults in **Chad**; isolated adults in **Mali** and **Morocco**.  
**FORECAST.** More hopper and adult groups in **Mauritania** and **Niger**; possible breeding in Mauritania; scattered adults to persist in **Morocco** and northern **Mali**.

### CENTRAL REGION: THREAT

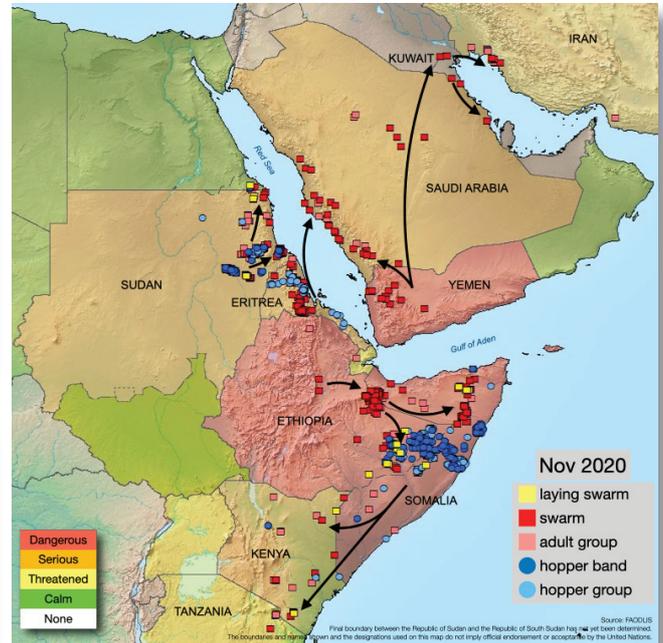
**SITUATION.** Swarms move into eastern **Ethiopia** (85 382 ha treated) with widespread breeding and numerous hopper bands there and in central **Somalia** (30 323 ha), and mature swarms lay in northeast; local breeding in northwest **Kenya** (167 ha) as mature swarms arrive and lay in the east; swarmlet in northeast **Tanzania**; swarms arrive in **Eritrea** (8 986 ha) and breed on coast; swarms in **Sudan** (66 488 ha) move to coast and breed; swarms move from **Yemen** (335 ha) to **Kuwait**; swarms arrive on Red Sea coast of **Saudi Arabia** (5 190 ha); swarm laying in southeast **Egypt** (1 225 ha).

**FORECAST.** Local breeding in **Kenya**; numerous swarms to form in eastern **Ethiopia** and central **Somalia** and invade northern Kenya from mid-December; hatching and hopper bands to form in northern Somalia; breeding and hopper bands along both sides of Red Sea in **Sudan, Eritrea, Yemen, Saudi Arabia**, and perhaps **Egypt**.

### EASTERN REGION: CALM

**SITUATION.** Few immature swarms arrive from Arabia on southwest coast of **Iran** (79 ha treated).

**FORECAST.** Breeding and hopper bands likely on southwest coast of **Iran**; low numbers prevail in southeast **Iran** and southwest **Pakistan**.



### Intense swarm invasion of Kenya likely from mid-December onwards

Substantial breeding caused large numbers of hopper bands to develop within a vast area of eastern Ethiopia and central Somalia during November. Numerous immature swarms will start to form in early December and increase until January. This will cause increasing waves of immature swarms to invade northeast Kenya from mid-December onwards and spread to other counties. Intensive survey and control operations should be maintained in Ethiopia and Somalia while extreme vigilance and preparedness are required in Kenya. Breeding is likely in northern Somalia where heavy rains fell from cyclone Gati and mature swarms are present. Unusually strong winds carried a few older swarms from central Somalia to eastern Kenya and northeast Tanzania. In the Central Region, immature swarms migrated from Yemen to Kuwait and southwest Iran. Swarms moved from eastern Sudan to the Red Sea coast, and immature swarms arrived on the Saudi Arabia coast. Breeding will cause locust numbers to increase along both sides of the Red Sea. In the Western Region, locusts formed groups in western Mauritania, northern Niger, and southern Algeria and limited control was done.

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 2020

**Heavy rains from cyclone Gati will extend favourable breeding conditions in eastern Ethiopia and central Somalia northwards to northern Somalia. Breeding conditions were improving along parts of the Red Sea coast.**

### WESTERN REGION

No significant rain fell in the region during November. Nevertheless, ecological conditions were still favourable for locust breeding and survival in west and northwest Mauritania (Trarza, Inchiri and southwest Adrar) that extended to Bir Anzarane in southern Western Sahara, Morocco. In northern Niger, vegetation was drying out but remained green in a few places in the southeast Air Mountains and on the northern Tamesna Plains near the border of Algeria, which extended across the border to In Guezzam, Algeria. Vegetation was also green near irrigated perimeters in the Adrar Valley of the central Algerian Sahara. In Chad, vegetation was drying out in west (Kanem) and central (Batha) areas but remained green in the east (Ouaddai), in southern Borkou, and in the northeast near Fada. In Northwest Africa, vegetation was mainly dry along the Draa Valley south of the Atlas Mountains in Morocco and in Wadi Sakia El Hamra of northern Western Sahara.

### CENTRAL REGION

Vegetation dried out in the summer breeding areas of Sudan west of the Nile while breeding conditions remained favourable along the Nile Valley in the north and from the Atbara River to the Red Sea Hills in the east. In the winter breeding areas, light rains fell during the first decade in northeast Sudan and near Mecca, Saudi Arabia. Rainfall improved during the third decade when light to moderate rains fell along the coast from Tokar Delta, Sudan to Foro, Eritrea and from Lith, Saudi Arabia to Suq Abs, Yemen with the heaviest showers near Qunfidah. Vegetation was becoming green and breeding conditions were already favourable in many coastal areas from southeast Egypt to central Eritrea as well as on the Tihama in Yemen. Conditions were less favourable on the coast of Saudi Arabia and on the southern coast of Yemen. At mid-month, strong southerly winds occurred over the Arabian Peninsula from Yemen to Kuwait. In the Horn of Africa, prevailing northeasterly winds became established over the entire region early in the month from northern Somalia to Kenya. Shortly after mid-month, these winds reached northeast Tanzania. During the first and third decades, light to moderate rain fell in the Somali region of eastern Ethiopia and in parts of northern Kenya while heavier rains fell in southern Somalia and eastern Kenya. As a result, breeding conditions were favourable within a large area

of eastern Ethiopia, central and southern Somalia, and along both sides of the Kenya–Somalia border, extending 100 km inside Kenya. On 17–21 November, Cyclone Gati formed in the Indian Ocean and made landfall on the 22<sup>nd</sup> near Xaafuun and the northern tip of northeast Somalia with sustained winds of 165 km/h. It was the strongest storm on record in Somalia. Twice the annual average of rain fell in two days in some places. Bosaso reported 128 mm in 24 hours and extensive damage was reported in Bari region. Gati crossed northeast Somalia to the Gulf of Aden near Lasqoray on the 23<sup>rd</sup>. Unusually heavy rains extended along the entire north coast as well as inland on the plateau east of Burco to Iskushuban, which is expected to cause ecological conditions to become favourable for breeding.

### EASTERN REGION

Light to moderate rains fell in coastal and subcoastal areas of Bushehr in southwest Iran during the second and third decades, which is likely to cause ecological conditions to become suitable for locust survival and breeding. In southwest Pakistan, light rains may have fallen at times during the third decade in Baluchistan between Omara and Lasbela. Nevertheless, generally dry conditions prevailed throughout the spring breeding areas.



### Area Treated

Control operations during November treated nearly 200 000 ha compared to 263 297 ha in October.

Algeria	167 ha
Egypt	1 225 ha
Eritrea	8 986 ha
Ethiopia	160 580 ha (October, revised) 85 382 ha
Iran	79 ha
Kenya	167 ha
Mauritania	258 ha
Niger	1 398 ha
Saud Arabia	5 190 ha
Somalia	30 323 ha
Sudan	66 488 ha
Yemen	335 ha



## Desert Locust Situation and Forecast

### WESTERN REGION

#### MAURITANIA

• SITUATION

During November, egg-laying continued until shortly after mid-month in Trarza and Inchiri where solitary and *transiens* hoppers were present and forming very small groups between Nouakchott (1809N/1558W), Aguilal Faye (1827N/1444W), and Akjoujt (1945N/1421W). Immature and mature solitary adults were scattered within this area and in southwest Adrar towards Atar (2032N/1308W). At the end of the month, groups of mature adults were seen northeast of Aguilal Faye. Ground teams treated 258 ha with biopesticide.

• FORECAST

*Small groups of hoppers and adults are likely to continue forming in Trarza and Inchiri, extending to southwest Adrar. If conditions remain favourable, another generation of breeding could occur with egg-laying starting in the last week of December and hatching from mid-January onwards.*

#### MALI

• SITUATION

During November, isolated immature and mature solitary adults were seen on the 23<sup>rd</sup> in the north on the western side of the Adrar des Iforas northwest of Aguelhoc (1927N/0052E).

• FORECAST

*Low numbers of adults may persist in parts of the Adrar des Iforas.*

#### NIGER

• SITUATION

During November, breeding continued and solitary and *transiens* hoppers formed small groups on the northern Tamesna Plains between Arlit (1843N/0721E) and Assamakka (1920N/0546E) near the Algeria border, and in the southeast Air Mountains. During the last decade, fledging occurred, giving rise to groups of solitary and *transiens* immature and maturing adults at densities up to 2 500 adults/ha. On the 29<sup>th</sup>, a mature group of adults was seen laying in the southeast Air Mountains. Ground teams treated 1 398 ha.

• FORECAST

*Hatching will occur up to mid-December in southeast Air Mountains that could give rise to hopper groups. Current hopper infestations will fledge throughout the forecast period, which could cause small groups of adults to form.*

#### CHAD

• SITUATION

During November, breeding declined in central and eastern

areas where only isolated solitary hoppers of all instars were seen in a few places to the northeast of Beurkia (1523N/1800E) and south of Fada (1714N/2132E). Low numbers of immature and mature solitary adults were scattered throughout the central and northern Sahel from Nokou (1435N/1446E) in the west to Fada in the northeast.

• FORECAST

*Locust numbers will decline as conditions dry out in central and northeastern areas.*

#### SENEGAL

• 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.*

#### ALGERIA

• SITUATION

During November, small-scale breeding continued and solitary hoppers and groups of hoppers and immature adults were present in the extreme south on the border of Niger southwest of In Guezzam (1934N/0546E). Some of the adults were maturing. Isolated immature solitary adults persisted west of Tamanrasset (2250N/0528E). No locusts were seen in the Adrar Valley (2753N/0017W) of the Central Sahara. Ground teams treated 167 ha.

• FORECAST

*Locust numbers will decline in the extreme south as vegetation dries out. No significant developments are likely.*

#### MOROCCO

• SITUATION

During November, isolated solitary adults appeared and were maturing in southern Western Sahara between Aousserd (2233N/1419W) and Bir Anzarane (2353N/1431W), in Wadi Sakia El Hamra east of Haouza (2707N/1112W), near Zag (2800N/0920W), and in the Draa Valley south of the Atlas Mountains between Fom El Hassan (2901N/0853W) and Zagora (3019N/0550W).

• 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 November.

• FORECAST

*No significant developments are likely.*

## TUNISIA

### • SITUATION

No locusts were reported during November.

### • FORECAST

*No significant developments are likely.*

## CENTRAL REGION

### SUDAN

#### • SITUATION

During November, adult groups continued to lay eggs until mid-month along the Atbara River while a few swarms laid thereafter southwest of Derudeb (1731N/3607E). Consequently, hopper groups and bands were present between the Atbara River and the Red Sea Hills near Haiya (1820N/3621E), causing groups and swarms of immature and mature adults to form, some of which moved northeast during the last week to Wadi Oko/Diib between Tomala (2002N/3551E) and Sufiya (2119N/3613E) where a few hoppers and groups were present, and to the northern Red Sea coast near Oseif (2146N/3651E). During the first week, late instar hopper bands were present further south on the Red Sea coast in Tokar Delta (1827N/3741E) and immature groups and swarms formed that were rapidly maturing. Scattered mature solitarious adults were present along the coast from Eritrea to Egypt, and a mature swarm was seen on the central coast near Eit (2009N/3706E). In the summer breeding areas, isolated mature solitarious adults persisted west of Khartoum (1533N/3235E) and in the Nile Valley near Dongola (1910N/3027E), and hopper groups were present north of Abu Hamed (1932N/3320E). Control operations treated 66 488 ha, of which 53 880 were by air.

#### • FORECAST

*Locust infestations will decline west of the Red Sea Hills as adults migrate to the Red Sea coast where breeding will cause a further increase in locust numbers. This will cause hatching and the formation of hopper groups and bands in the Tokar Delta and on the coast near Oseif, that could extend to the central and southern plains during December and January.*

### ERITREA

#### • SITUATION

In early November, immature swarms from northeast Ethiopia continued to arrive in the southern highlands where they dispersed as far as north of Nakfa (1640N/3828E). During the rest of the month, breeding continued and hopper groups of all instars formed on the southern Red Sea coast between Idd (1357N/4138E) and Tio (1441N/4057E), on the central coast between Sheib (1551N/3903E) and Mersa Cuba (1616N/3911E), in subcoastal areas near Naro (1626N/3840E), parts of the highlands north and west of Nakfa, and in southern areas of the western lowlands. Fledging occurred near Sheib and Naro, giving rise to immature adult groups. Ground teams treated 8 986 ha.

#### • FORECAST

*Fledging and the formation of immature adult groups are expected to continue to mid-December on the Red Sea coast. Another generation of breeding is likely to occur in favourable areas along the coast with laying, hatching and the possibility of hoppers forming groups and small bands.*

### ETHIOPIA

#### • SITUATION

On 2 November, a few immature swarms were last reported in the northeast to the south of Dese (1108N/3938E) and immature groups were seen in Tigray near Mekele (1329N/3928E). Most of the immature swarms had previously moved north to Eritrea and southeast to the Somali region where they persisted near Jijiga (0922N/4250E). From mid-month onwards, swarms declined in Jijiga as they moved southeast to the Ogaden where they matured and laid. Substantial breeding was already in progress where numerous hopper groups and bands were forming within a vast area of about 400 km by 200 km from the Shebelle River in the south to the Somali border in the north, encompassing Warder, Korahe, and Gode zones. By the end of the month, some hoppers had reached fourth instar. Mature swarms were seen after mid-month in the Shebelle Valley between Gode (0557N/4333E) and the Somali border, and one swarm was seen laying about 125 km to the south on the 24<sup>th</sup>. Control operations treated 85 382 ha of which 37 219 ha were by air.

#### • FORECAST

*Hatching and band formation will continue in the Somali region. Fledging will commence at the beginning of December and continue to mid-January. From mid-December onwards, numerous immature swarms are likely to form, increase, and move south across the Shebelle River to the southeast, continuing to Kenya. If conditions remain favourable, another generation of laying could start during January in eastern and southern Somali region. Consequently, intensive survey and control operations should be maintained.*

### DJIBOUTI

#### • SITUATION

During November, isolated first instar solitarious hoppers were reported in the south near Ali Sabieh (1109N/4242E). Immature and mature solitarious and *transiens* adults and one immature group were seen during the last week in western Tadjourah near the Ethiopia border between Balho (1203N/4212E) and Bouyya (1223N/4422E).

#### • FORECAST

*No significant developments are likely.*

### SOMALIA

#### • SITUATION

During November, widespread and substantial breeding continued in the central regions of Nugal, Mudug, and

Galguduud, giving rise to number hopper groups and bands scattered within a vast area of 600 km by 200 km. By the end of the month, some of the bands had reached fifth instar. Swarms were seen laying in this area until mid-month. In the northwest, immature and a few mature swarms were present between Boroma (0956N/4313E), Hargeisa (0931N/4402E) and the Ethiopia border until just after mid-month. During the last decade, cyclone Gati winds carried the swarms east on the plateau towards Burco (0931N/4533E) and Erigavo (1040N/4720E), southeast to the Ogaden in Ethiopia, and to the northwest coast near Bulhar (1023N/4425E) where a swarm was reported. Rains associated with the cyclone allowed the swarms to mature, including numerous swarms in the northeast between Garowe (0824N/4829E) and the north coast. At the end of the month, swarms were laying between Gardo (0930N/4905E) and Erigavo. In the south, surveys could not be conducted but there were reports of breeding south of the Shebelle River and along the Juba River. Several mature swarms were reported during the month near the border of Kenya in Gedo and Lower Juba regions between Garbahare (0320N/4213E) and the coast. Control operations using biopesticides treated 30 323 ha of which 21 387 ha were by air.

• FORECAST

*In central and southern regions, a new generation of immature swarms will start to form in early December and increase substantially from mid-month onwards. Most of the swarms are likely to move southwards while some may remain in favourable areas to mature. In the north, hatching, and band formation will occur on the plateau between Hargeisa, Erigavo, and Garowe. Fledging and the formation of new immature swarms are likely to start after mid-January. Consequently, intensive survey and control operations should be maintained.*

**KENYA**

• SITUATION

During November, local breeding was underway in northern Samburu county where mid to late instar hopper bands were seen at a few places. Breeding is most likely in progress elsewhere in Turkana, Samburu, and Marsabit counties as mature groups of adults were seen in Marsabit. Shortly after mid-month during strong northeasterly winds, several small mature swarms from southern Somalia arrived in Mandera, Wajir, and Garissa counties. Some swarms continued south to Taita-Taveta county and the Tanzania border where they were seen near Voi (0324S/3833E) on 18–25 November. Mature adult groups were present in Kitui and Machakos counties. Laying was reported near the Tana River. On the 29th, an immature swarm was seen north of Wajir (0145N/4003E). Ground teams treated 167 ha.

• FORECAST

*More hopper bands are likely to be present in the northwest that could cause an increasing number of immature swarms*

*to form in December. Hatching and band formation are likely along the Tana River. A few more small mature swarms from southern areas of Ethiopia and Somalia are likely to appear between Moyale, Mandera, Lamu, and Mombasa in early December and lay. However, the primary threat will start in mid-December and increase thereafter when several much larger waves of numerous immature swarms from Ethiopia and Somalia will arrive and spread to northern and central counties. Extreme vigilance and preparedness are required.*

**UGANDA**

• SITUATION

During November, no locusts were reported in the northeast between Mbale (0105N/3411E) and Abim (0242N/3339E).

• FORECAST

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

**TANZANIA**

• SITUATION

During the last week of November, several small groups of mature adults arrived in the northeast from southeast Kenya. A mature swarmlet was seen west of Mt. Kilimanjaro on the 23<sup>rd</sup> in Lushoto district of Manyara region. On 24–26 November, small groups of mature gregarious adults were seen near the Kenya border and Moshi (0321S/3720E).

• 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

On 4 November, a mature swarm was laying in Wadi Diib to the west of Halaib (2213N/3638E) near the Red Sea coast in the southeast where hoppers, groups, and a band were already present. By mid-month, the hoppers were late instar and fledging to form an immature adult group. Scattered immature and mature solitary adults were seen nearby, extending nearly to the coast. During the last week, a few more immature adult groups were seen in the same area as well as an immature swarm on the 27<sup>th</sup>. Ground teams treated 1 225 ha. No locusts were seen elsewhere on the Red Sea coast between Shalatyn (2308N/3535E) and Marsa Alam (2504N/3454E), near Lake Nasser in the Tushka (2247N/3126E) and Abu Simbel (2219N/3138E) areas, and in the northwest near Salum (3131N/2509E).

• FORECAST

*Locust numbers are likely to increase further 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 second week of November, a few immature swarms were present in the southern Asir Mountains near Abha (1813N/4230E). Thereafter, two separate swarm invasions took place. Strong southerly winds carried several immature swarms northwards from Yemen to Najran (1729N/4408E) on the 12<sup>th</sup> when a few continued to the Asir Mountains while others reached Riyadh (2439N/4642E) on the 17<sup>th</sup>, and the Iraq/Kuwait border on the 21<sup>st</sup>. The swarms then moved from Kuwait to the eastern coast on the 24<sup>th</sup> and continued southeast to Dammam (2625N/5003E). On the Red Sea coast, no breeding was reported; however, immature swarms from across the Red Sea arrived near Jeddah (2130N/3910E) on the 21<sup>st</sup>, spreading to Mecca (2125N/3949E) and Bader (2346N/3847E). Swarms were seen in the Asir Mountains near Taif (2115N/4021E) on the 25<sup>th</sup> and east of Masturah (2309N/3851E) on the 26<sup>th</sup>. During the remainder of the month, swarms were seen on the coast south of Jeddah to Qunfidah (1909N/4107E). Ground teams treated 5 190 ha.

### • FORECAST

*Any swarms remaining on the Red Sea coast are likely to mature and lay in areas of recent rainfall between Lith and Jizan, which would lead to hatching and hopper band formation during January. There remains a risk that additional swarms could arrive on the southern coast from adjacent areas in Yemen.*

## YEMEN

### • SITUATION

During November, scattered immature and mature solitary adults were present and breeding on the Red Sea coast between Suq Abs (1600N/4312E) and Zabid (1410N/4318E). Ground teams treated 335 ha of immature adult groups on the 1-4<sup>th</sup>. An immature swarm were seen near Suq Abs on the 10<sup>th</sup>, and mid-instar solitary hoppers were seen during the last week. In the central highlands, several mature swarms were seen near Sana'a (1521N/4412E) during the second week while an immature swarm was seen further north on the 27<sup>th</sup>. In the interior, immature swarms were reported near Al Hazm (1610N/4446E) and Bayhan (1452N/4545E) during the first week. On the southern coast, scattered immature and mature solitary adults were present between Am Rija (1302N/4434E) and Zinjibar (1306N/4523E), near Ahwar (1333N/4644E), and between Bir Ali (1401N/4820E) and Mayfa'a (1416N/4735E).

### • FORECAST

*Locust numbers will increase on the Red Sea coast as breeding continues, which could give rise to hopper groups and bands. Breeding will also occur on the southern coast between Aden and Bir Ali if rains fall.*

## OMAN

### • SITUATION

During November, isolated immature solitary adults were present on the central Batinah coast northwest of Jamma (2333N/5733E). No locusts were seen elsewhere on the coast, on the Musandam Peninsula, and in the northern interior between Buraimi (2415N/5547E) and Ibra (2243N/5831E).

### • FORECAST

*No significant developments are likely.*

## KUWAIT

### • SITUATION

On 21 November, an immature swarm was seen flying in the northwest near the Iraq border. On the 24<sup>th</sup>, an immature swarm was seen near Abdali (3004N/4742E) in the north flying eastwards and another one in the south near Al Wafra (2836N/4806E) flying south towards Saudi Arabia.

### • FORECAST

*No significant developments are likely.*

## BAHRAIN, D.R. CONGO, IRAQ, ISRAEL, JORDAN, LEBANON, PALESTINE, QATAR, SOUTH SUDAN, SYRIA, TURKEY, AND UAE

### • FORECAST

*No significant developments are likely.*

## EASTERN REGION

### IRAN

#### • SITUATION

During November, a group of immature adults persisted in the Bashagard Mountains north of Jask (2540N/5746E) near Gouharan (2636N/5753E) in Hormozgan province on the 2<sup>nd</sup>. Groups of immature adults and a few immature swarms from the Arabian Peninsula appeared on the southwest coast between the Iraq border and Bushehr (2854N/5050E) on the 27–30<sup>th</sup>. Scattered maturing adults were seen in several nearby places. Ground teams treated 79 ha.

#### • FORECAST

*A few small swarms are likely to persist and slowly mature on the southwest coast where they could eventually lay in areas that receive rainfall and if temperatures remain warm. Low numbers of adults may be present and will persist in parts of Hormozgan and Sistan-Baluchistan.*

### PAKISTAN

#### • SITUATION

During November, no locusts were seen during surveys in Sindh, Punjab, Baluchistan, and Khyber Pakhtunkhwa.

#### • FORECAST

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

## INDIA

### • SITUATION

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

### • FORECAST

*No significant developments are likely.*

## AFGHANISTAN

### • SITUATION

No locust reports were received during November.

### • 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](mailto:eclo@fao.org) and [faodislocust@gmail.com](mailto:faodislocust@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, 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](http://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

**SWAC.** 32<sup>nd</sup> session (virtual), 14–16 December 2020

**CRC.** 32<sup>nd</sup> 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<sup>2</sup>
- band: 1–25 m<sup>2</sup>

#### Small

- swarm: 1–10 km<sup>2</sup>
- band: 25–2,500 m<sup>2</sup>

#### Medium

- swarm: 10–100 km<sup>2</sup>
- band: 2,500 m<sup>2</sup> – 10 ha

#### Large

- swarm: 100–500 km<sup>2</sup>
- band: 10–50 ha

#### Very large

- swarm: 500+ km<sup>2</sup>
- 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, Sierra 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](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](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>

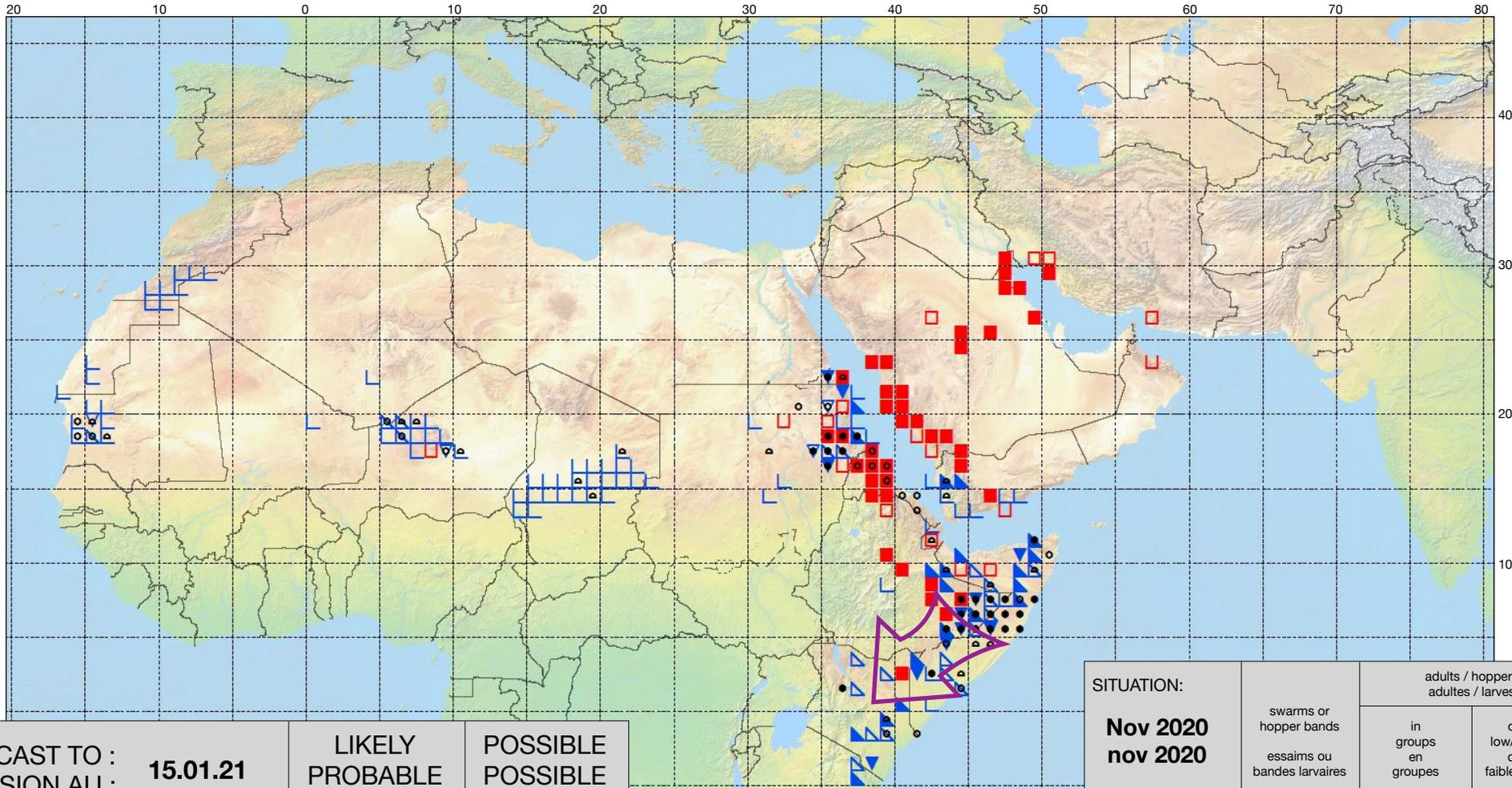
**FAOLocust Slideshare.** Locust presentations and photos  
<http://www.slideshare.net/faolocust>

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



# Desert Locust Summary

## Criquet pèlerin – Situation résumée



<b>FORECAST TO :</b> <b>PREVISION AU :</b>	<b>15.01.21</b>	<b>LIKELY PROBABLE</b>	<b>POSSIBLE POSSIBLE</b>
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			

<b>SITUATION:</b>  <b>Nov 2020</b> <b>nov 2020</b>	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)			