



Desert Locust Bulletin

General situation during January 2020
Forecast until mid-March 2020

WESTERN REGION: CALM

SITUATION. Scattered locusts in **Mauritania** (32 ha treated), northern **Mali** and southern **Algeria**.

FORECAST. Limited breeding possible in **Mauritania**, **Morocco**, **Algeria** and **Libya**.

CENTRAL REGION: THREAT

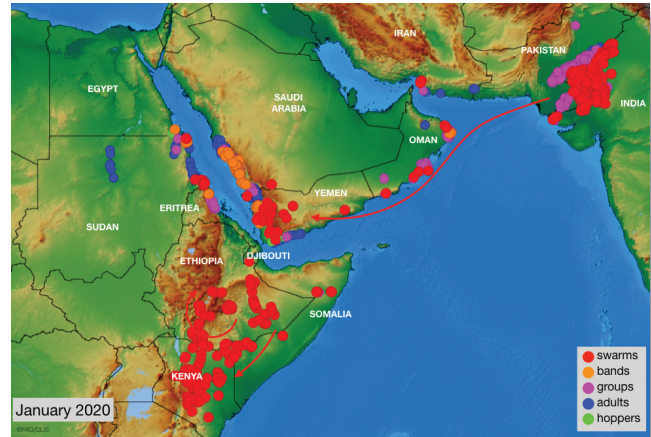
SITUATION. Control operations against hopper groups, bands and adult groups in **Oman** (2 128 ha) and on Red Sea coast of **Saudi Arabia** (44 311 ha), **Sudan** (18 714 ha), **Yemen** (15 465 ha), **Eritrea**, (15 068 ha), and **Egypt** (1 425 ha). Swarm laying in Sudan; immature swarms arrive in Oman, Yemen, **Djibouti** and Eritrea. Control operations against immature and maturing swarms in **Ethiopia** (22 550 ha), **Kenya** (20 000 ha estimated) and **Somalia** (15 000 ha estimated).

FORECAST. Swarm movement, maturation, egg-laying, hatching and band formation in **Ethiopia**, **Somalia** and **Kenya** with invasion threat to **South Sudan** and **Uganda**. Breeding to cause more groups, bands and swarms to form along both sides of the Red Sea with movements to interior of **Sudan**, **Saudi Arabia** and **Yemen**.

EASTERN REGION: THREAT

SITUATION. Control continued against residual groups and swarms in **India** (61 178 ha) and **Pakistan** (62 295 ha), and swarms that laid eggs in southern **Iran** (2 041 ha).

FORECAST. Hatching and band formation in southern **Iran**; breeding will start in southwest **Pakistan**.



Three hot-spots of threatening locust activity

The current situation remains extremely alarming in three main areas: (1) In the Horn of Africa, the worst affected area, there is an unprecedented threat to food security and livelihoods as swarms increased in Ethiopia and Somalia and continued to move south to Kenya where they spread to 14 northern, central and southwest counties, reaching within 200 km of northeast Uganda and southeast South Sudan. Some swarms have already laid eggs and hatching is almost certainly underway. Swarms also entered the Rift Valley in Ethiopia. Aerial and ground operations were in progress but remained insufficient. Breeding during February will cause a further increase with numerous hopper bands in all three countries. Some swarms may still reach Uganda and South Sudan. (2) Locust infestations continued to grow along both sides of the Red Sea where numerous hopper groups, bands and adult groups formed. A swarm formed on the coast near the Sudan/Egypt border, swarms laid near the Sudan/Eritrea border, and formed on the coast of Yemen, some of which moved into the central highlands and to adjacent areas in southwest Saudi Arabia. At least one swarm appeared on the southern coast of Eritrea. Several swarms, presumably from the Indo-Pakistan border area, arrived on the eastern coast of Oman and moved south to Yemen. (3) In southwest Asia, heavy rains fell on the southern coast of Iran where swarms were laying eggs, which should allow favourable conditions for two generations of breeding that could cause a considerable increase in locust numbers.

The FAO Desert Locust Bulletin is issued every month by the Desert Locust Information Service (DLIS) at FAO HQ in Rome, Italy. DLIS continuously monitors the global Desert Locust situation, weather and ecology to provide early warning based on survey and control results from affected countries, combined with remote sensing, historical data and models. The bulletin is supplemented by Alerts and Updates during periods of increased Desert Locust activity.

Telephone: +39 06 570 52420 (7 days/week, 24 hr)
E-mail: eclou@fao.org / faodlislocust@gmail.com

Internet: www.fao.org/ag/locusts
Facebook/Twitter: faolocust



Weather & Ecological Conditions in January 2020

Breeding conditions remained favourable along both sides of the Red Sea and the Horn of Africa. Heavy rains fell in southern Iran. Dry conditions prevailed in the Western Region.

WESTERN REGION

Although no significant rain fell in the region during January, ecological conditions remained favourable for limited breeding in parts of northwest Mauritania (Inchiri and southwest Adrar), in some areas of central, eastern and southern Algeria (Adrar, Illizi, Djanet, Tamanrasset), and in southwest Libya (near Ghat). However, low temperatures will delay locust maturation. Elsewhere, annual vegetation remained sufficiently green for limited locust survival in parts of northern Mali (Timetrine and Adrar des Iforas), northern Niger (Air Mountains), and Morocco (Draa Valley).

CENTRAL REGION

Breeding conditions remained favourable in most coastal areas along both sides of the Red Sea where light to moderate rains fell at times. Conditions were also favourable on the southern coast of Yemen between Aden and Mukalla and on the eastern coast of Oman near Duqm and Sur. In the Horn of Africa, ecological conditions remained favourable for breeding in eastern Ethiopia and northeast Somalia due to heavy rains from cyclone Pawan in December. Light to moderate rains fell in southwest Ethiopia and in northern and central Kenya where conditions were also favourable for breeding.

EASTERN REGION

In southern Iran, breeding conditions were favourable some two months earlier than normal due to unusual winter rains, green vegetation and above-normal temperatures. This was supplemented by unusually heavy rains that fell along most of the southern coast during the first two decades of the month, including flooding in coastal and interior areas of Sistan-Baluchistan province in the southeast. Some areas received its entire annual rainfall in a single day. This should allow breeding conditions to remain favourable for two generations of breeding. Light showers fell in parts of Baluchistan in southwest Pakistan. Ecological conditions continued to dry out and temperatures were low, along the Indo-Pakistan border.



Area Treated

Control operations increased in January (246 477 ha) compared to December (187 943 ha).

Egypt	1 425 ha
Eritrea	15 068 ha
Ethiopia	22 550 ha
India	61 178 ha
Iran	2 041 ha
Kenya	20 000 ha (est.)
Mauritania	32 ha
Oman	2 128 ha
Pakistan	62 295 ha
Saudi Arabia	44 311 ha
Somalia	15 000 ha (est.)
Sudan	18 714 ha
Yemen	15 465 ha



Desert Locust Situation and Forecast

WESTERN REGION

MAURITANIA

• SITUATION

During the first half of January, scattered solitary hoppers, fledglings, and immature and mature solitary adults, including one immature adult group, persisted in the northwest between Bennichab (1928N/1525W) and Oujft (2003N/1301W). Ground teams treated 32 ha up to 11 January.

• FORECAST

Small-scale breeding is likely to continue in the northwest in areas that remain favourable, which could cause a few small groups to form; however, low temperatures will delay hatching and locust maturation.

MALI

• SITUATION

During January, scattered solitary immature and mature adults persisted on the western side of the Adrar des Iforas southwest of Tessalit (2011N/0102E) and in the Tilemsi Valley.

• FORECAST

Low numbers of adults will persist in a few places of the Adrar des Iforas, Tilemsi Valley and Timetrine.

NIGER

• SITUATION

No reports were received during January.

• FORECAST

Low numbers of locusts may be present and are likely to persist in parts of the Air Mountains.

CHAD

• SITUATION

No locusts were reported during January.

• FORECAST

No significant developments are likely.

BURKINA FASO

• SITUATION

No reports were received during January.

• FORECAST

No significant developments are likely.

SENEGAL

• SITUATION

No locusts were reported during January.

• FORECAST

No significant developments are likely.

BENIN, CAMEROON, CAPE VERDE, CÔTE D'IVOIRE, GAMBIA, GHANA, GUINEA, GUINEA BISSAU, LIBERIA, NIGERIA, SIERRA LEONE AND TOGO

• FORECAST

No significant developments are likely.

ALGERIA

• SITUATION

During January, scattered immature solitarious adults were present west of Tamanrasset (2250N/0528E) where breeding had occurred earlier. No locusts were seen in the Adrar (2753N/0017W) valley.

• FORECAST

Low numbers of locusts are likely to persist along the edge of the Hoggar Mountains near Tamanrasset and may be present near Illizi, Djanet, and agricultural areas in the central Sahara. Limited breeding could commence once temperatures start to warm up towards the end of the forecast period.

MOROCCO

• SITUATION

No locusts were reported during January.

• FORECAST

Low numbers of adults may appear in March along the southern side of the Atlas Mountains and breed on a small scale once rains occur.

LIBYA

• SITUATION

No reports were received during January.

• FORECAST

Low numbers of adults may persist in the southwest near Ghat where small-scale breeding could commence once temperatures start to warm up towards the end of the forecast period.

TUNISIA

• SITUATION

No locusts were reported during January.

• FORECAST

No significant developments are likely.

CENTRAL REGION

SUDAN

• SITUATION

During January, hopper groups and bands continued to form on the northern coast of the Red Sea south of the Egyptian border near Fodukwan (2145N/3644E). Fledging occurred, giving rise to a few immature adult groups and at least one immature swarm at the end of the month. Smaller-scale breeding is in progress in advance subcoastal areas of Wadi Oko/Diib where groups of hoppers and immature and mature adults are present in a few places. Scattered mature solitarious adults are present in both areas. Swarms laid eggs in Tokar Delta (1827N/3741E) and on the coastal plain to Karora (1745N/3820E) and the Ertirean border, and hatching and band formation started in the last decade. Scattered solitarious adults were maturing along the coast from Port Sudan to Karora. In the northern Nile Valley, scattered immature and mature solitarious adults were present near Dongola (1910N/3027E). Control operations treated 18 714 ha of which 11 700 ha were by air.

• FORECAST

A few more groups and swarms will form on the northern coast, which are likely to move to the Nile Valley as vegetation dries out where breeding will occur with possible hatching and band formation starting about mid-March. More hatching and band formation will occur in Tokar and on the southern coast where new immature adult groups and swarms could start to form in early March.

ERITREA

• SITUATION

During January, first-generation late-instar hoppers and adults formed groups that were maturing on the Red Sea coast between Wekiro (1548N/3918E) and Embere (1628N/3856E), and laying was still occurring. A second-generation of hatching continued from Massawa (1537N/3928E) to south of Mehimet (1723N/3833E), giving rise to hopper groups and some bands. On the 20th, a swarm was seen near Assab (1301N/4247E) on the southern coast. Ground teams treated 15 068 ha up to 27 January.

• FORECAST

As second-generation breeding continues on the Red Sea coast, an increasing number of hopper groups and bands will form, giving rise to adult groups and swarms. A northwards movement along the coast can be expected if conditions start to dry out in March.

ETHIOPIA

• SITUATION

During January, numerous immature swarms were present within a large portion of the Somali region between Jijiga (0922N/4250E), Gode (0557N/4333E) and Warder (0658N/4520E). From the second week onwards, an increasing number of swarms moved towards the southwest to central and southern Oromiya region while other swarms remained in the Ogaden of the Somali region, some of which had matured. By mid-month, the swarms had extended as far south as the Kenya border from northwest of Moyale (Kenya) to the edge of the Rift Valley near Konso (0520N/3726E) and adjacent areas of eastern SNNPR region. There were also cross-border swarm movements. During the last week, swarms moved into the Rift Valley from the south to reach Awasa (0703N/3829E) and from the north to reach Nazreth (0831N/3915E). Aerial control operations treated 22 550 ha.

• FORECAST

Swarm movements are likely to occur in Somali, Oromiya and parts of SNNPR regions, especially in the Rift Valley and reaching parts of the central highlands. This will be supplemented by cross-border swarm movements along the Somali and Kenyan border. Substantial breeding is expected to occur in Somali and Oromiya and, to a lesser extent in the Rift Valley, which will cause hopper bands to form.

DJIBOUTI

• SITUATION

On 18–20 January, immature swarms were seen in the southeast interior near the Ethiopian border and Ali Sabieh (1109N/4242E) and on the coast south of Tadjourah (1147N/4253E).

• FORECAST

There is a low risk that a few groups and swarms may appear in the south and east from adjacent areas of eastern Ethiopia and northwest Somalia.

SOMALIA

• SITUATION

A late report indicated that hopper bands formed on the northwest coast between Lughaye (1041N/4356E) and Siliil (1058N/4326E) during December. Scattered immature and mature solitairous adults and at least one mature group of laying adults were also present. On the 25th, an immature swarm was seen on the escarpment south of Siliil. In the northeast, control operations were undertaken

against hopper bands on the coast between Lasqoray (1109N/4811E) and Bosaso (1118N/4910E).

During January, control operations were carried out against laying swarms and early instar hopper bands on the northeast plateau near Garowe (0824N/4829E), treating an estimated 15 000 ha. In the south, swarms laid eggs in the south north of Garbahare (0320N/4213E) and near and the borders of Ethiopia and Kenya.

• FORECAST

In the northwest, breeding will cause locust numbers to increase along the coast. In the northeast, more hopper groups and bands will form as hatching continues on the plateau where new swarms could start forming by the end of the forecast period. In central and southern areas, egg-laying, hatching and hopper band formation are expected throughout the forecast period.

KENYA

• SITUATION

During January, large and numerous immature swarms continued to arrive from the north into the northeast near Mandera (0356N/4151E) and subsequently spread to 14 northern, central and southwest counties. On the 26th, a swarm reached the Rift Valley northwest of Kopedo (0111N/3606E). By the end of the month, immature swarms had reached as far south as Makueni county, and there were reports of locusts in Nairobi. Some swarms in the northern and central areas had become mature. Ground and aerial control operations treated an estimated 20 000 ha or more.

• FORECAST

Additional swarms will continue to arrive in the northeast from adjacent areas of Ethiopia and Somalia and spread in a westerly direction through northern and central areas. Movement further south will be limited due to headwinds. Breeding will cause a further increase in locust numbers with hatching and band formation during February and March.

SOUTH SUDAN

• SITUATION

No locusts were reported during January.

• FORECAST

There is a high risk that a few small swarms will appear in the southeast from adjacent areas of southern Ethiopia and northern Kenya at any time in the coming few weeks; thereafter, the risk should decline.

UGANDA

• SITUATION

No locusts were reported during January.

• FORECAST

There is a low risk that a few small swarms may appear in the northeast from adjacent areas of Kenya at any time in the coming few weeks; thereafter, the risk should decline.

EGYPT

• SITUATION

During January, small-scale breeding continued in a few other areas between El Sheikh El Shazly (2412N/3438E) and the Sudanese border where scattered solitary hoppers, and immature and mature solitary adults were present. Late instar hopper groups and bands and immature adult groups were present in one area of the southeast along the Red Sea coast between Shalatyn (2308N/3535E) and Abu Ramad (2224N/3624E). No locusts were present near Lake Nasser and Tushka (2247N/3126E) while immature solitary adults were seen near Sh. Oweinat (2219N/2845E). Ground teams treated 1 425 ha.

• FORECAST

Locust numbers will increase further on the Red Sea coastal plains in the southeast as breeding continues, giving rise to hopper and adult groups. A second generation of laying could start in February if conditions remain favourable, which would lead to a further increase in locusts.

SAUDI ARABIA

• SITUATION

During January, second-generation laying by adult groups continued early in the month in a few places along the Red Sea coast while, more importantly, hopper groups and bands increased substantially on the coast from south of Jeddah (2130N/3910E) to north of Jizan (1656N/4233E). As fledging occurred, an increasing number of immature adult groups formed. This was supplemented by a few immature swarms arriving from adjacent areas of Yemen on the 1st in the Farsan Islands off the coast of Jizan and on the 22nd near Najran (1729N/4408E). Control teams treated 44 311s ha of which 7 450 ha were by air. No locusts were seen on the northern Red Sea coast between Jeddah and Umm Lajj (2501N/3716E).

• FORECAST

Numerous immature adult groups and swarms will continue to form on the central and southern Red Sea coast. If conditions remain favourable, another generation of laying could commence from late February onwards; otherwise, groups and swarms are likely to move into the interior spring breeding areas although some movements could occur north along the coast especially if rains fall on the northern coast.

YEMEN

• SITUATION

During January, numerous hopper bands persisted on the northern Red Sea coast between Al Zuhrah (1541N/4300E) and Suq Abs (1600N/4312E) and on the central coast near Hodeidah (1450N/4258E) and southwards from earlier breeding. Mainly mature adult groups were also present mixed with immature and mature solitary adults. During the last decade, several immature swarms were initially seen near Hodeidah and then later in the highlands from

Taiz (1335N/4401E) to south of Sada'a (1656N/4345E).

Ground teams treated 15 465 ha. On the southern coast, solitary hoppers, immature and mature solitary adults, and hopper groups were present on the coast near Aden (1250N/4503E). On the 17th, an immature swarm arrived on the eastern coast near Sayhut (1512N/5115E) and a few immature swarms were seen in the interior near Marib (1527N/4519E) at the end of the month. These swarms may have come from Indo-Pakistan border via Oman.

• FORECAST

Breeding will continue on the Red Sea coast and cause a further increase in locust numbers that will give rise to hopper groups, bands, adult groups and swarms. Swarms will continue to move in the highlands and on the eastern coast towards the interior between Marib and Shabwah where they are likely to mature and breed in areas that receive good rains.

OMAN

• SITUATION

During January, breeding continued on the eastern coast south of Ras Al Hadd (2232N/5948E) and near Duqm (1939N/5743E) where mainly late instar hopper groups and a few bands caused groups of immature and mature adults to form, some of which moved south of Duqm and were copulating. Mature groups also appeared north of Thumrait (1736N/5401E) in the southern interior. A few immature swarms probably from the Indo-Pakistan area arrived along the eastern coast south of Duqm on the 6th and 7th moving westwards, on the southern coast at Salalah (1700N/5405E) on the 14th, near Al Jazar (1856N/5702E) on the 20th, and northwest of Sur on the northeast coast during the last week. Ground teams treated 2 128 ha.

• FORECAST

Hatching and band formation is likely to occur in the Duqm area. As adults mature in the Sur area, further breeding could occur along the coast and extend to any northern or coastal areas that receive rainfall.

BAHRAIN, IRAQ, ISRAEL, JORDAN, KUWAIT, LEBANON, PALESTINE, QATAR, SYRIA, TANZANIA, TURKEY, AND UAE

• FORECAST

No significant developments are likely.

EASTERN REGION

IRAN

• SITUATION

During January, several adult groups and swarms laid eggs on the southeast coast in Hormozgan province between Minab (2708N/5705E) and Jask (2540N/5746E) where a few hoppers were already present. Solitary immature adults were present near Pishin (2605N/6145E) and the border of Pakistan. Ground teams treated 2 041 ha. No locusts were reported elsewhere.

• FORECAST

Hatching and band formation is likely to occur in coastal areas of Hormozgan that is likely to give rise to immature swarms starting in March. Breeding will occur in coastal and interior areas of recent flooding in Sistan-Baluchistan that could potentially cause a dramatic increase in locust numbers.

PAKISTAN

• SITUATION

During January, a few third-generation hoppers continued to fledge and form immature groups in Nara Desert while immature adult groups persisted in Tharparkar, Nara and Cholistan deserts. Some of these groups and small swarms moved north of Bahawalpur (2924N/7147E). Cross-border movements continued, including a few immature swarms. On the 31st, immature adult groups reached Khyber Pakhtunkhwa near Dera Ismail Khan (3151N/7052E). Control operations treated 62 295 ha of which 2 100 ha were by air.

• FORECAST

Any residual adult groups or swarms along both sides of the Indo-Pakistan border will move towards areas of recent rainfall in Baluchistan where breeding will commence in favourable areas and give rise to hopper groups and bands.

INDIA

• SITUATION

During January, numerous residual immature adult groups and swarms persisted in Rajasthan while some populations moved north to Suratgarh (2919N/7354E), southeast to Jalore (2520N/7237E), and south to northern Gujarat and the Rann of Kutch. This was supplemented at times by cross-border movements. Ground teams treated 61 178 ha.

• FORECAST

The majority of the residual summer-bred adult groups and swarms will move from Rajasthan and Gujarat west towards Baluchistan, Pakistan. Only low numbers of locusts are likely to remain in favourable areas.

AFGHANISTAN

• SITUATION

No reports were received during January.

• FORECAST

There is a low risk that a few groups or small swarms from the Indo-Pakistan border may appear in southern areas.



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

Caution (yellow), threat (orange) and danger (red).

During locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent at least twice/week within 48 hours of the latest survey.

Bulletins. Affected countries are encouraged to prepare decadal and monthly bulletins summarizing the situation.

Reporting. All information should be sent by e-mail to the FAO/ECLC Desert Locust Information Service (eclo@fao.org and 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

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 for more details.

Condolences

It is with deep regret that we announce the death of Captain Shoaib Malik and Engineer Fawad Butt of the Federal Department of Plant Protection, Pakistan, who died in crash while undertaking aerial control operations against Desert Locust in Rahimyar Khan District on 12 January. We would like to express our sincere condolences to their families and government.

Calendar

The following activities are scheduled:

- **L3.** UN member states briefing on the locust infestations in the Horn of Africa, Geneva, Switzerland (3 February)
- **L3.** Desert Locust ministerial and partners briefing meeting, Addis Ababa, Ethiopia (7 February)

- **L3.** OCHA/FAO briefing on the locust upsurge in the Horn of Africa, UN Headquarters, New York, USA (10 February)
- **CLCPRO/DLIS.** Western Region Desert Locust Information Officer workshop, Dakar, Senegal (6–10 April)
- **CRC/SWAC/DLIS.** Central Region and SWAC Desert Locust Information Officer workshop, Cairo, Egypt (7–11 June)



Glossary of terms

The following special terms are used in the Desert Locust Bulletin when reporting locusts:

Non-gregarious adults and hoppers

Isolated (few)

- very few present and no mutual reaction occurring
- 0–1 adult/400 m foot transect (or less than 25/ha)

Scattered (some, low numbers)

- enough present for mutual reaction to be possible but no ground or basking groups seen
- 1–20 adults/400 m foot transect (or 25–500/ha)

Group

- forming ground or basking groups
- 20+ adults/400 m foot transect (or 500+/ha)

Adult swarm and hopper band sizes

Very small

- swarm: less than 1 km² • band: 1–25 m²

Small

- swarm: 1–10 km² • band: 25–2,500 m²

Medium

- swarm: 10–100 km² • band: 2,500 m² – 10 ha

Large

- swarm: 100–500 km² • band: 10–50 ha

Very large

- swarm: 500+ km² • band: 50+ ha

Rainfall

Light

- 1–20 mm

Moderate

- 21–50 mm

Heavy

- more than 50 mm

Summer rains and breeding areas

- July–September/October
- Sahel of West Africa, Sudan, western Eritrea; Indo-Pakistan border

Winter rains and breeding areas

- October–January/February
- Red Sea and Gulf of Aden coasts; northwest Mauritania, Western Sahara

Spring rains and breeding areas

- February–June/July
- Northwest Africa, Arabian Peninsula interior, Somali plateau, Iran/Pakistan border

Other reporting terms

Breeding

- The process of reproduction from copulation to fledging

Recession

- Period without widespread and heavy infestations by swarms

Remission

- Period of deep recession marked by the complete absence of gregarious populations

Outbreak

- A marked increase in locust numbers due to concentration, multiplication and gregarisation which, unless checked, can lead to the formation of hopper bands and swarms

Upsurge

- A period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to- gregarious breeding in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions

Plague

- A period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously

Decline

- A period characterised by breeding failure and/or successful control leading to the dissociation of swarming populations and the onset of recessions; can be regional or major

Warning levels

Green

- *Calm.* 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 Desert Locust 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.ideo.columbia.edu/maproom/.Food_Security/.Locusts/index.html

IRI Greenness maps. Dynamic maps of green vegetation evolution every decade
http://iridl.ideo.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 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>

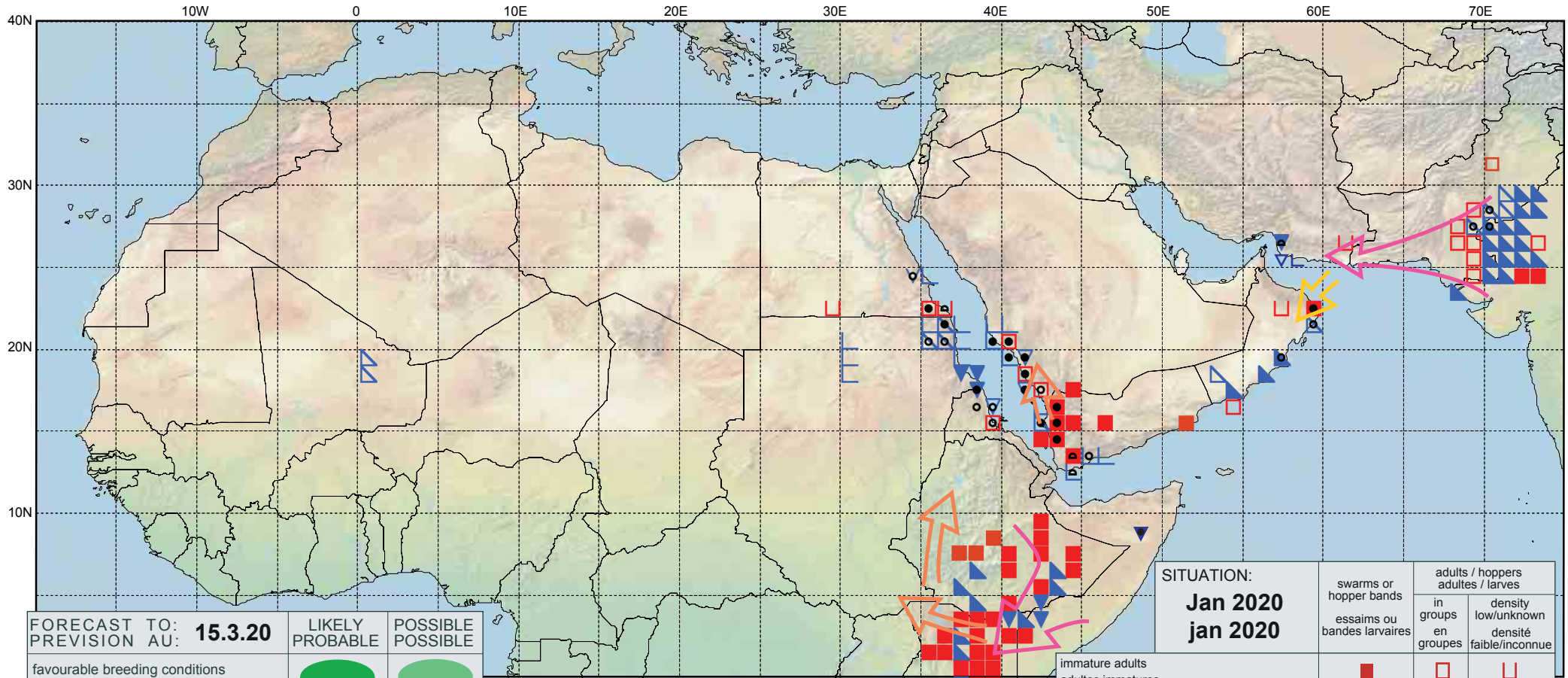
FAOLocust Slideshare. Locust presentations and photos
<http://www.slideshare.net/faolocust>

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



Desert Locust Summary

Criquet pèlerin - Situation résumée



FORECAST TO:
PREVISION AU: **15.3.20**

LIKELY PROBABLE POSSIBLE

favourable breeding conditions
conditions favorables à la reproduction



major swarm(s)
essaim(s) important(s)



minor swarm(s)
essaim(s) limité(s)



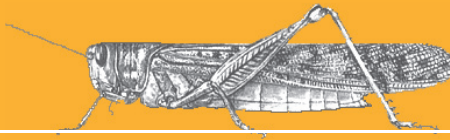
non swarming adults
adultes non essaimant



SITUATION:
Jan 2020
jan 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 partly 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 symbol example) larves et adultes (exemple symboles combinés)	◻	◻

immature adults adultes immatures	■	□	┘
mature or partly 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 symbol example) larves et adultes (exemple symboles combinés)	◻	◻	◻



Desert Locust Bulletin

General situation during February 2020
Forecast until mid-April 2020

WESTERN REGION: CALM

SITUATION. Scattered locusts in **Morocco, Algeria and Libya.**

FORECAST. Limited breeding possible in **Mauritania, Morocco, Algeria and Libya.**

CENTRAL REGION: THREAT

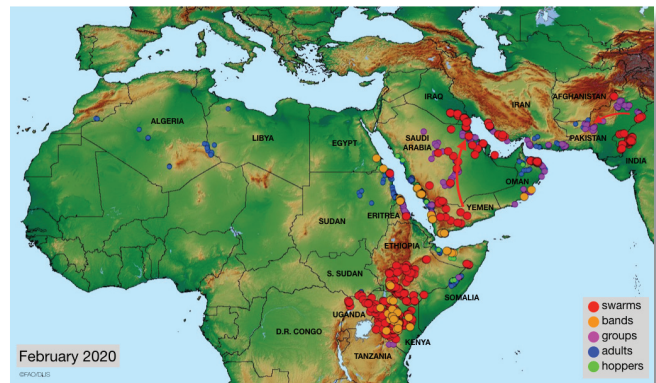
SITUATION. Control operations in **Saudi Arabia** (22 645 ha), **Eritrea**, (12 153 ha), **Sudan** (5 505 ha), **Oman** (2 100 ha), **Yemen** (1 475 ha), and **Egypt** (154 ha). Immature swarms invaded **Iraq** (69 ha), **Kuwait, Bahrain** (3 ha), **Qatar** and **UAE** (45 ha). Control operations against mature swarms, hopper bands and new-generation immature swarms in **Kenya** (15 000+ ha), **Ethiopia** (41 050 ha) and **Somalia** (1 053 ha).

FORECAST. Hatching, hopper bands and new-generation immature swarm formation in **Ethiopia, Somalia and Kenya.** Some immature swarms may move northwards to **South Sudan, Ethiopia and Somalia** while others remain, mature and breed. Breeding is likely in **Oman** and in the interior of **Saudi Arabia and Yemen.**

EASTERN REGION: THREAT

SITUATION. Swarms arrived in southwest **Iran** (2 617 ha treated) and laid eggs. Breeding started in Baluchistan and Punjab, **Pakistan** (8 299 ha treated). Control continued against residual groups and swarms in **India** (11 420 ha).

FORECAST. Hatching and band formation in southern **Iran**, southwest and Punjab, **Pakistan** and **India.**



Widespread hatching and band formation in Horn of Africa

The current situation is complex and extremely alarming as locusts have spread within the Horn of Africa and into East Africa, reaching southern Kenya and northern Tanzania, northeast Uganda, southeast South Sudan, and northeast D.R. Congo. However, the worst affected countries are Kenya, Ethiopia and Somalia where there is an unprecedented threat to food security and livelihoods. Aerial and ground control operations continued against widespread swarm laying, hatchlings and numerous hopper bands throughout northern and central Kenya and southern Ethiopia. New swarms formed in northern Somalia at mid-month and in Kenya at the end of February. An increasing number of hopper bands and immature swarms will form in the Horn of Africa during March and April. Some swarms may move northwards while others are likely to remain, mature and eventually lay eggs, causing another generation of breeding. Elsewhere, several swarms were present in Yemen and some moved northwards in Saudi Arabia and passed through the Gulf countries to southern Iran where they quickly matured and laid eggs that will cause hopper bands to form. Remnant summer-bred swarms were present in Rajasthan, India and were laying in parts of Punjab, Pakistan. A swarm was seen in eastern Afghanistan and adult groups reached Baluchistan in southwest Pakistan where spring breeding will continue.

The FAO Desert Locust Bulletin is issued every month by the Desert Locust Information Service (DLIS) at FAO HQ in Rome, Italy. DLIS continuously monitors the global Desert Locust situation, weather and ecology to provide early warning based on survey and control results from affected countries, combined with remote sensing, historical data and models. The bulletin is supplemented by Alerts and Updates during periods of increased Desert Locust activity.

Telephone: +39 06 570 52420 (7 days/week, 24 hr)
E-mail: eclod@fao.org / faodlislocust@gmail.com

Internet: www.fao.org/ag/locusts
Facebook/Twitter: faolocust



Weather & Ecological Conditions in February 2020

Very little rain fell during the month. Breeding conditions were favourable in the Horn of Africa, southern Iran and along parts of the Red Sea coastal plains.

WESTERN REGION

No significant rain fell in the region except for a few showers in parts of central and southern Algeria. Consequently, annual vegetation was dry in most areas except along the Draa Valley south of the Atlas Mountains in Morocco, in southwest Libya near Ghat, and in parts of northern Mali where it was sufficient for locust survival. Ecological conditions were favourable near irrigated perimeters in the central and southern Sahara of Algeria near Adrar and Tamanrasset.

CENTRAL REGION

Very little rain fell except in southwest Ethiopia for a few days in early and late February. Very little rain fell in the winter breeding areas along both sides of the Red Sea and Gulf of Aden. Consequently, vegetation began to dry out at the end of the month in the winter breeding areas except on the southern coast of Sudan, the northern and central coast of Eritrea, the Tihama of Yemen, and the northwest coast of Somalia. In the spring breeding areas of the Arabian Peninsula, vegetation was green in the interior of Saudi Arabia between Wadi Dawasir and Riyadh, in parts of the interior of Yemen, and in the interior and coastal areas of northern Oman. In the Horn of Africa, breeding conditions remained favourable in southern Ethiopia and the Rift Valley, in northern and central Kenya, and in parts of Somalia.

EASTERN REGION

Very little rain fell except on the southwest coast of Iran for a few days during the last decade of the month and in Punjab, Pakistan in the last days of February. Nevertheless, breeding conditions were favourable along the entire coast of southern Iran and in the Jaz Murian Basin of the southeastern interior. Breeding conditions improved in coastal and interior areas of Baluchistan in southwest Pakistan as temperatures warmed up. Dry conditions persisted along both sides of the Indo-Pakistan border.



Area Treated

Control operations treated more than 123 000 ha in February.

Bahrain	3 ha
Egypt	154 ha
Eritrea	12 153 ha
Ethiopia	41 050 ha
India	11 420 ha
Iran	2 617 ha
Iraq	69 ha
Kenya	15 000+ ha
Oman	2 100 ha
Pakistan	8 299 ha
Saudi Arabia	22 645 ha
Somalia	1 053 ha
Sudan	5 050 ha
UAE	45 ha
Uganda	(no details)
Yemen	1 475 ha



Desert Locust Situation and Forecast

WESTERN REGION

MAURITANIA

• SITUATION

No reports were received during February.

• FORECAST

Low numbers of locusts may be present in the northwest where limited breeding could occur in areas that are favourable.

MALI

• SITUATION

No locusts were reported during February.

• FORECAST

Low numbers of adults are likely to persist in a few places of the Adrar des Iforas, Tilemsi Valley and Timetrine.

NIGER

• SITUATION

Late reports indicated no locusts were reported in December and January. No locusts were reported during February.

• FORECAST

Low numbers of locusts may be present and are likely to persist in parts of the Air Mountains.

CHAD

• SITUATION

No locusts were reported during February.

• FORECAST

No significant developments are likely.

BURKINA FASO

• SITUATION

No reports were received during February.

• FORECAST

No significant developments are likely.

SENEGAL

• SITUATION

No locusts were reported during February.

• FORECAST

No significant developments are likely.

BENIN, CAMEROON, CAPE VERDE, CÔTE D'IVOIRE, GAMBIA, GHANA, GUINEA, GUINEA BISSAU, LIBERIA, NIGERIA, SIERRA LEONE AND TOGO

• FORECAST

No significant developments are likely.

ALGERIA

• SITUATION

During February, scattered immature solitarious adults persisted in the southern Sahara west of Tamanrasset (2250N/0528E) and were seen in the central Sahara in the Adrar (2753N/0017W) valley and between Reggane (2643N/0010E) and In Salah (2712N/0229E).

• FORECAST

Low numbers of locusts are likely to persist in agricultural areas in the central Sahara and along the edge of the Hoggar Mountains near Tamanrasset where they may be also present near Illizi and Djanet. Limited breeding is likely to occur in these areas.

MOROCCO

• SITUATION

During February, no locusts were seen in the Western Sahara from south of Smara (2644N/1140W) to Zag (2800N/0920W) and along the Draa Valley from Foug Zguid (3005N/0652W) to Erfoud (3128N/0410W) except for isolated mature solitarious adults near Foug Zguid.

• FORECAST

Low numbers of adults may appear along the southern side of the Atlas Mountains and breed on a small scale in areas that receive rainfall.

LIBYA

• SITUATION

During February, isolated solitarious adults were maturing in the southwest near Ghat (2459N/1011E) and in the northwest near Mizda (3127N/1259E).

• FORECAST

Small-scale breeding is likely to occur in the southwest near Ghat, causing locust numbers to increase slightly but remain below threatening levels.

TUNISIA

• SITUATION

No locusts were reported during February.

• FORECAST

No significant developments are likely.

CENTRAL REGION

SUDAN

• SITUATION

During February, hopper bands were present on the southern coastal plains of the Red Sea between Aqiq (1813N/3811E) and the Eritrean border. A few mature swarms were reported near Aiterba (1753N/3819E) and Karora (1745N/3820E) shortly after mid-month. In the north, a few late instar hopper groups and immature adult groups persisted near Oseif (2146N/3651E) at the beginning of the month and two immature swarms were seen nearby by mid-month. Scattered immature and mature solitarious adults were present throughout the coastal plains and in a few places along Wadi Oko/Diib in the northeast. In the interior, scattered immature and mature solitarious adults were present in the Nile Valley between Ed Damer (1734N/3358E) and Merowe (1830N/3149E). Control operations treated 5 050 ha of which 4 610 ha were by air.

• FORECAST

A few adult groups and perhaps small swarms will form on the southern coast, which are likely to move to the Nile Valley as vegetation dries out where breeding will occur with possible hatching and band formation starting from late March onwards.

ERITREA

• SITUATION

During February, second-generation hopper groups fledged and formed immature adult groups on the Red Sea coastal plains from Massawa (1537N/3928E) to the Sudan border. On the 26th, a mature swarm was seen laying on the coast southwest of Massawa. Ground control teams treated 12 153 ha.

• FORECAST

A limited third generation of breeding could occur in areas that remain favourable on the central Red Sea coast; otherwise, a northwards movement along the coast can be expected as conditions dry out. There remains a risk that a few swarms could appear from Ethiopia and Yemen at times.

ETHIOPIA

• SITUATION

During February, numerous immature swarms matured

and laid eggs in the south from the Kenya border north to Nazreth (0831N/3915E) in the northern Rift Valley. Most of the infestations were concentrated in the districts of South Omo in SNNPR region and Borena in Oromiya region, while Bale, Arsi and east Shewa of Oromiya and Konso, Derashi, North Omo, Keficho, Jima, K.a.t, and Gurage in SNNPR as well as near Harar (0919N/4206E) were also affected. By the end of the month, hatching occurred and first instar hoppers were forming groups and bands in South Omo and Borena. Undetected breeding may have commenced earlier in other areas. Aerial control operations treated 41 050 ha.

• FORECAST

Widespread hatching and band formation are likely to occur in Oromiya and SNNP regions, where a new generation of swarms could start to form in April. Undetected breeding may be in progress in other areas of the east and south. This will be supplemented by cross-border movements of immature swarms along the Somali and Kenyan border. Southerly winds could carry swarms further north into central and northern areas of the country.

DJIBOUTI

• SITUATION

No surveys were carried out and no locusts were reported during February. There were reports of locust on the north coast near Obock (1154N/4317E).

• FORECAST

There is a low risk that a few groups and swarms may appear in the south and east from adjacent areas of eastern Ethiopia and northwest Somalia.

SOMALIA

• SITUATION

During February, immature swarms formed in the northeast near Garowe (0824N/4829E) at the beginning of the month. In central areas, scattered hoppers, adults and immature adult groups were present between Galkayo (0646N/4725E) and Belet Weyne (0444N/4512E). In the northwest, breeding occurred on the northwest coast between Lughaye (1041N/4356E) and Bulhar (1023N/4425E), on the plateau near Burao (0931N/4533E), and hopper bands formed near Berbera (1028N/4502E) and on the escarpment north of Burao where immature and mature adult groups were also present as well as some mature groups that were laying. At least 1 000 ha were treated by ground teams.

• FORECAST

An increasing number of immature swarms are likely to form in parts of the country, some of which could move further southwards while others are likely to remain in areas that remain favourable and mature. Another generation of breeding is expected to occur on the northwest plateau, giving rise to further hopper bands.

KENYA

• SITUATION

During February, numerous swarms matured and were present in 21 counties. At least one swarm reached the Tanzanian border near Mt. Kilimanjaro while other swarms moved west to Uganda and northwest to Lake Turkana. Widespread laying and hatching occurred primarily in the northern and some central counties, causing numerous hopper bands to form. By the end of the month, first-generation immature swarms were starting to form from early undetected breeding in January. In addition, recently formed immature swarms arrived in the northeast from adjacent areas of Somalia. Ground and aerial control operations treated at least 15 000 ha.

• FORECAST

Hopper bands will continue to form during March and April, giving rise to an increasing number of first-generation swarms that will mature and could be ready for a second generation of breeding from early April onwards. Most of the breeding will remain concentrated in northern counties of Turkana, Marsabit, Samburu, Isiolo, Wajir and Mandera.

TANZANIA

• SITUATION

On 9 February, a group of mature gregarious adults from adjacent areas of southern Kenya arrived in the north and dispersed towards Arusa (0322S/3642E) and Moshi (0321S/3720E).

• FORECAST

The risk of any additional swarms arriving in the north is very low due to prevailing southerly winds.

SOUTH SUDAN

• SITUATION

On 17 February, a mature swarm coming from northeast Uganda arrived in Magwi county of southwest East Equatoria where it invaded several villages between the Uganda border and Magwi (0408N/3218E). Remnants of this swarm was seen several days later. On the 23rd, a mature swarm crossed the border from Uganda to Loboni (0347N/3245E) where it dispersed and was reported during the following days.

• FORECAST

From mid-March onwards, a few new-generation immature swarms could arrive from western Kenya in East Equatoria and continue towards the north and northwest.

UGANDA

• SITUATION

On 9 February, a mature swarm arrived in the northeastern district of Amudat near Moroto (0231N/3439E) from adjacent areas of western Kenya. Several more mature swarms subsequently entered and spread to some 22 districts in the northeast from Bukwa (0117N/3444E) and Soroti (0143N/3336E) northwards to Lokung (0335N/3242E) and

Apoka (0344N/3344E) near the South Sudan border. Many of the swarms tried to lay eggs. Ground control operations were carried out, but more details are awaited.

• FORECAST

Successful egg-laying may have occurred in a few places of the northeast, which would give rise to hopper bands during the forecast period. From mid-March onwards, a few new-generation immature swarms could arrive from western Kenya in the northeast and continue northwards.

D.R. CONGO

• SITUATION

On 18 February, a few mature swarmlets from adjacent areas of northwest Uganda appeared during strong easterly winds in Ituri province near Aru (0251N/3050E) where they dispersed in several places near the border up to the 25th. No damage was reported.

• FORECAST

No significant developments are likely.

EGYPT

• SITUATION

During February, small-scale breeding continued on the Red Sea coast in the southeast near El Sheikh El Shazly (2412N/3438E) where a few early instar hopper groups and bands were present, and between Shalatyn (2308N/3535E) and the Sudanese border where a hopper band fledged and formed an immature adult group while scattered solitarious hoppers and immature and mature adults were seen nearby. No locusts were present near Lake Nasser in the Tushka (2247N/3126E) and Abu Simbel (2219N/3138E) areas. Ground teams treated 154 ha.

• FORECAST

Locust numbers are likely to decline as breeding comes to an end and vegetation dries out. Nevertheless, scattered hoppers and adults may persist in the few areas that remain green.

SAUDI ARABIA

• SITUATION

During February, a few first-generation mature adult groups persisted on the central Red Sea coast near Qunfidah (1909N/4107E) where an increasing number of second-generation hopper bands, fledglings and immature groups and swarms were forming in the first half of the month while some hopper bands persisted until the end of the month. In the interior, immature groups and swarms probably from adjacent areas of Yemen first appeared in the south near Najran (1729N/4408E) and moved northwards on strong persistent southerly winds, reaching Al Hofuf (2523N/4935E) on the 16th, Hafar Al Batin (2821N/4556E) on the 18th, and probably continuing into southern Iraq and the Persian Gulf. Control operations were undertaken in the interior and, by the end of the month, declined on the Red Sea coast. Ground teams treated 22 645 ha.

• FORECAST

If conditions remain favourable, breeding could occur along parts of the Red Sea coast; otherwise, locust numbers will decline. Any swarms in the interior will mature and breed between Wadi Dawasir and Riyadh, and in the Gassim and Hail areas, which could give rise to hopper groups and bands.

YEMEN

• SITUATION

During February, late instar hopper bands and groups of maturing adults were present on the northern Red Sea coast between Al Zuhrah (1541N/4300E) and Suq Abs (1600N/4312E), and northwest of Bajil (1458N/4314E). Another generation of hatching started during the last week near Al Zuhrah, giving rise to first instar hopper bands. Breeding was also in progress on the southern coastal plains near Lahij (1303N/4453E) where early and late instar hopper bands and immature adult groups were present. Immature swarms appeared during the first week in the interior near Ataq (1435N/4649E), Bayhan (1452N/4545E) and north of Al Hazm (1610N/4446E) as well as in the central highlands near Sana'a (1521N/4412E). Immature swarms were also seen in Wadi Hadhramaut near Al Abr (1608N/4714E) and Hawra (1542N/4817E) at mid-month and a mature swarm was seen south of Ataq on the 21st. Some of these swarms probably moved northwards on strong, persistent southerly winds. Ground teams treated 1 475 ha.

• FORECAST

Breeding will continue on the Red Sea and Gulf of Aden coasts, causing a further increase in locust numbers that will give rise to hopper groups, bands, adult groups and swarms. Breeding will also occur in the interior between Marib and Hadhramaut in areas that receive rainfall.

OMAN

• SITUATION

During February, several immature groups and swarms were present on the northeast coast between Sur (2234N/5930E) and Muscat (2337N/5833E) in the first week. Thereafter, mature groups and swarms laid eggs on the coast near Muscat and Jamma (2333N/5733E), giving rise to early instar hopper groups. First to third instar hopper groups and a few bands were present along the central coast south of Duqm (1939N/5743E) where laying occurred last month while a late instar hopper group were seen on the coast south of Sur. Scattered immature and mature solitarious adults were present along parts of the eastern coast and in the northern interior between Adam (2223N/5731E) and Buraimi (2415N/5547E). Ground teams treated 2 100 ha.

• FORECAST

Hoppers are likely to continue to form groups and a few bands on the northern and eastern coasts where fledging

will start in early March and new immature groups and perhaps a few small swarms could form. Another generation of breeding could occur in areas that remain favourable.

IRAQ

• SITUATION

On 20 February, there were reports of immature swarms in the southern province of Al Muthanna that were moving towards Kuwait followed by additional reports between Basrah (3031N/4749E) and Nasiriyah (3103N/4616E) up to the 25th. Ground teams treated 69 ha.

• FORECAST

A few swarms may appear in Al Muthanna province during periods of southerly winds.

KUWAIT

• SITUATION

On 20 February, immature swarms appeared in northern Kuwait near Safwan (3004N/4741E) from adjacent areas of southeast Iraq and rapidly passed Abdali farms (3002N/4749E) and Failaka Island (2926N/4816E) to reach Al Wafrah farms (2834N/4804E). By the following day, only an immature adult group remained at Al Wafrah.

• FORECAST

A few swarms may appear during periods of southerly winds.

BAHRAIN

• SITUATION

On 20 February, an immature swarm appeared near Manama (2610N/5032E) where it split into several smaller groups that were seen nearby up to the 25th. No locusts were seen thereafter. Ground teams treated 3.4 ha.

• FORECAST

A few swarms may appear during periods of southerly winds.

QATAR

• SITUATION

On 20 February, an immature swarm appeared near Doha (2517N/5131E). Reports of locusts continued until the 22nd.

• FORECAST

A few swarms may appear during periods of southerly winds.

UAE

• SITUATION

On 23 February, groups of immature adults at densities up to 10 adults/m² appeared on Delma Island (2429N/5217E) off the coast of western UAE near Qatar. Ground teams treated 45 ha.

• FORECAST

A few swarms may appear during periods of southwesterly winds.

ISRAEL, JORDAN, LEBANON, PALESTINE, SYRIA, AND TURKEY

• FORECAST

No significant developments are likely.

EASTERN REGION

IRAN

• SITUATION

During February, limited breeding occurred on the southeast coast in Hormozgan province where first to third instar *transiens* and gregarious hoppers and a few groups were present between Minab (2708N/5705E) and Jask (2540N/5746E). Scattered mature solitary adults were present along the southeast coast to Zarabad (2534N/5923E), in the Jaz Murian Basin near Sowlan (2710N/5833E), and near the Pakistani border and Pishin (2605N/6145E). A mature group was laying northeast of Zarabad. On 23-29th, there were 22 reports of moderate to high-density immature swarms appearing in coastal and subcoastal areas of the southwest in Khuzestan, Bushehr, southern Fars and western Hormozgan provinces during strong, persistent southerly winds. Within four days, most of the swarms had matured and laid eggs. Ground teams treated 2 617 ha.

• FORECAST

Hatching and band formation will occur along the coast and subcoastal areas of the southwest that is expected to cause a significant increase in locust numbers. Breeding will continue along the southeast coast and in the Jaz Murian Basin of the interior, and hopper groups and perhaps small bands could form in areas that received heavy rains in January.

PAKISTAN

• SITUATION

During February, mature adult groups and swarmlets were seen copulating in Okara district of Punjab and Dera Ismail Khan and Lucky Marwat districts of Khyber Pakhtunkhwa. An increasing number of adult groups arrived in Baluchistan from the Indus Valley and laid eggs in the northern interior between Khuzdar (2749N/6639E) and Dalbandin (2856N/6430E) and in the southwest near Turbat (2600N/6303E). Hatching occurred near Kharan (2832N/6526E) and Turbat, and a few early instar hopper groups had formed. Ground teams treated 8 299 ha.

• FORECAST

Increased hatching in coastal and interior areas of Baluchistan will cause hopper groups and bands to form. The first generation of spring-bred immature groups and swarms are likely to start to form by early April, depending on temperatures. Limited hatching and band formation will occur in Punjab.

INDIA

• SITUATION

During February, residual summer-bred swarms were maturing near the Pakistan border in Rajasthan north of Jaisalmer (2652N/7055E) and northwest of Suratgarh (2919N/7354E) and in southwest Punjab as well in central Rajasthan between Barmer (2543N/7125E) and Phalodi (2706N/7222E). Ground teams treated 11 420 ha.

• FORECAST

Residual swarms are likely to persist in Rajasthan. Breeding could occur in the north near the Punjab border, giving rise to hopper bands.

AFGHANISTAN

• SITUATION

Three swarms reportedly arrived in Khost province from adjacent areas of northwest Pakistan on about 21 February.

• FORECAST

There is a low to moderate risk that a few groups and small swarms could appear in southern provinces and perhaps breed on a limited scale in favourable areas.



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

Caution (yellow), threat (orange) and danger (red).

During locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent at least twice/week within 48 hours of the latest survey.

Bulletins. Affected countries are encouraged to prepare decadal and monthly bulletins summarizing the situation.

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, 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. There is a new dashboard that shows current progress (<http://www.fao.org/locusts/response-overview-dashboard/en/>). See www.fao.org/locusts for more details.

New eLocust3 tools

FAO has developed two new free tools for improving Desert Locust survey and control reporting: **eLocust3m** (<https://play.google.com/store/apps/details?id=plantvillage.locustsurvey>) and **DLwatch** (tiny.cc/DLwatch). Both apps can be used to collect and send basic data for importing into RAMSES GIS. eLocust3m is an Android app that can also send photos and includes an in-country chat function while DLwatch works offline on any device. A third tool under development, **eLocust3g**, is a GPS satellite communicator that can send basic data in real time on a standard form.

Calendar

The following activities are scheduled:

- **L3 SWAC.** High-level ministerial meeting for southwest Asia countries on the locust upsurge, Video conference (11 March)
- **L3 NENA.** Briefing session on the Desert Locust situation in the Near East and North Africa region, Video conference (March tbd)
- **CRC/SWAC/DLIS.** Central Region and SWAC Desert Locust Information Officer workshop, Cairo, Egypt (7–11 June)
- **CLCPRO/DLIS.** Western Region Desert Locust Information Officer workshop, Dakar, Senegal (6–10 July)



Glossary of terms

The following special terms are used in the Desert Locust Bulletin when reporting locusts:

Non-gregarious adults and hoppers

Isolated (few)

- very few present and no mutual reaction occurring
- 0–1 adult/400 m foot transect (or less than 25/ha)

Scattered (some, low numbers)

- enough present for mutual reaction to be possible but no ground or basking groups seen
- 1–20 adults/400 m foot transect (or 25–500/ha)

Group

- forming ground or basking groups
- 20+ adults/400 m foot transect (or 500+/ha)

Adult swarm and hopper band sizes

Very small

- swarm: less than 1 km²
- band: 1–25 m²

Small

- swarm: 1–10 km²
- band: 25–2,500 m²

Medium

- swarm: 10–100 km²
- band: 2,500 m² – 10 ha

Large

- swarm: 100–500 km²
- band: 10–50 ha

Very large

- swarm: 500+ km²
- band: 50+ ha

Rainfall

Light

- 1–20 mm

Moderate

- 21–50 mm

Heavy

- more than 50 mm

Summer rains and breeding areas

- July–September/October
- Sahel of West Africa, Sudan, western Eritrea; Indo-Pakistan border

Winter rains and breeding areas

- October–January/February
- Red Sea and Gulf of Aden coasts; northwest Mauritania, Western Sahara

Spring rains and breeding areas

- February–June/July
- Northwest Africa, Arabian Peninsula interior, Somali plateau, Iran/Pakistan border

Other reporting terms

Breeding

- The process of reproduction from copulation to fledging

Recession

- Period without widespread and heavy infestations by swarms

Remission

- Period of deep recession marked by the complete absence of gregarious populations

Outbreak

- A marked increase in locust numbers due to concentration, multiplication and gregarisation which, unless checked, can lead to the formation of hopper bands and swarms

Upsurge

- A period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to-gregarious breeding

in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions

Plague

- A period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously

Decline

- A period characterised by breeding failure and/or successful control leading to the dissociation of swarming populations and the onset of recessions; can be regional or major

Warning levels

Green

- *Calm*. 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 Desert Locust 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 training videos. A set of 15 introductory training videos are available on YouTube
<https://www.youtube.com/playlist?list=PLf7Fc-oGpFHEdv1jAPaF02TCfpcnYoFQT>

eLocust3m. An Android mobile app for basic data recording & transmission; includes in-country chat
<https://play.google.com/store/apps/details?id=plantvillage.locustsurvey>

DLwatch. A web-form for basic data recording & transmission using any device with a web browser
<http://tiny.cc/DLwatch>

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>

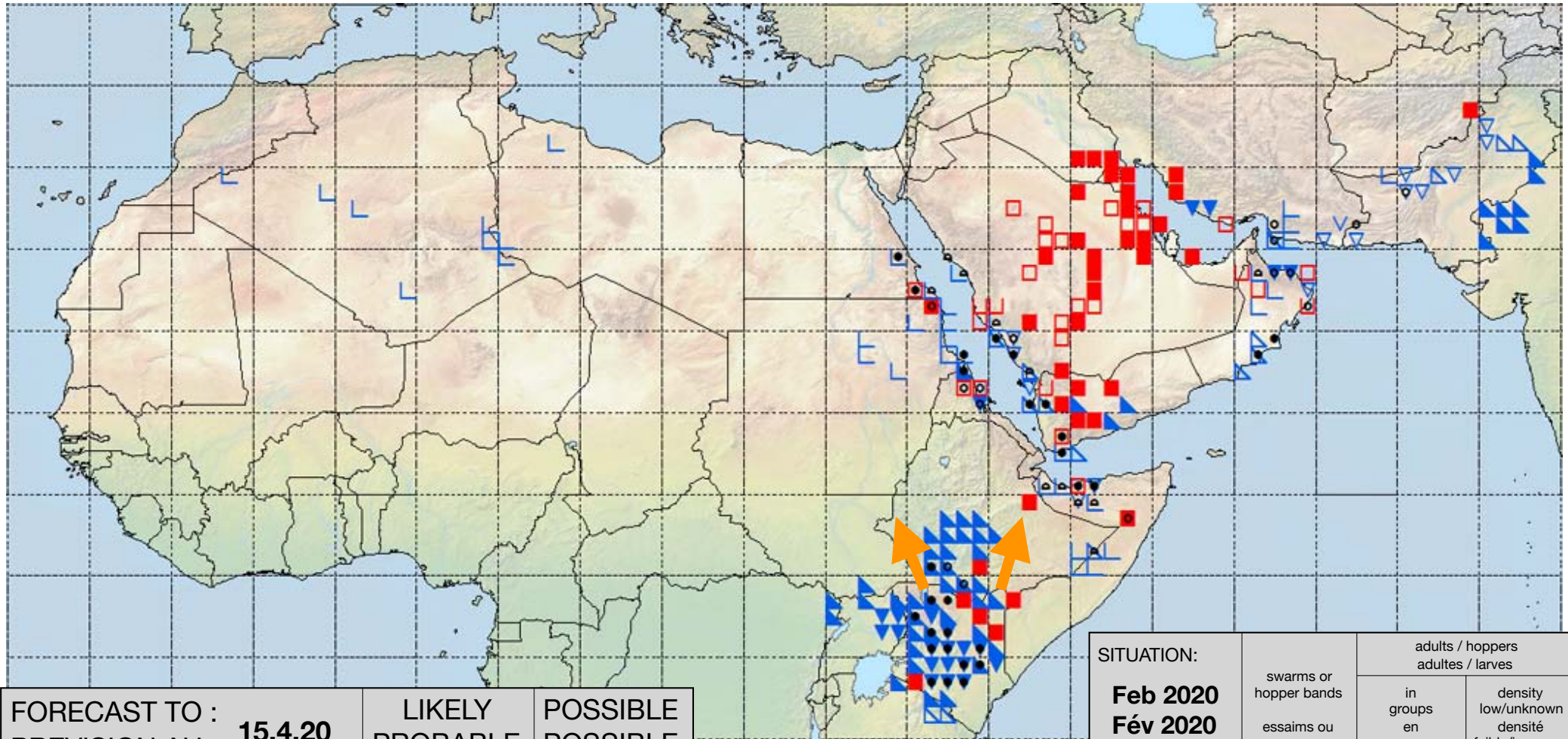
FAOLocust Slideshare. Locust presentations and photos
<http://www.slideshare.net/faolocust>









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





















Desert Locust Summary

Criquet pèlerin – Situation résumée



FORECAST TO : PREVISION AU :	15.4.20	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favorables à la reproduction			
major swarm(s) essaim(s) important(s)			
minor swarms(s) essaim(s) limité(s)			
non swarming adults adults non essaimant			

SITUATION: Feb 2020 Fév 2020	swarms or hopper bands	adults / hoppers adultes / larves	
	essaims ou bandes larvaires	in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures			
mature or partially mature adults adultes matures ou partiellement matures			
adults, maturity unknown adultes, maturité inconnue			
egg laying or eggs pontes ou œufs			
hoppers larves			
hoppers & adults (combined example) larves et adultes (symboles combinés)			



Desert Locust Bulletin

General situation during March 2020
Forecast until mid-May 2020

WESTERN REGION: CALM

SITUATION. Scattered locusts in central **Algeria**, southwest **Libya**, and northern **Mali**.

FORECAST. Limited breeding possible in **Morocco**, **Algeria** and **Libya**.

CENTRAL REGION: THREAT

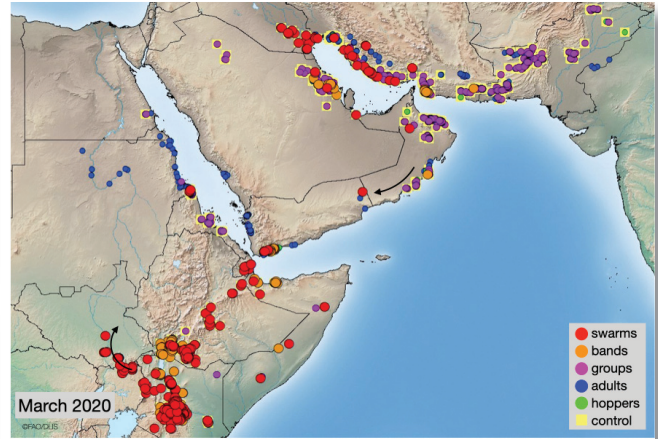
SITUATION. Control operations against laying swarms, new-generation hopper bands and immature swarms in **Kenya** (33 968 ha treated), **Ethiopia** (39 656 ha) and **Somalia** (159 ha); mature swarms in **Uganda** (607 ha); a few hopper bands and swarms in **Djibouti**. Locusts declined in Red Sea winter areas of **Sudan** (870 ha), **Eritrea** (5 640 ha), **Egypt** (15 ha) and Saudi Arabia. Swarms in **Iraq** (1 625 ha) and **Kuwait** (21 ha); a group in **UAE** (2 ha); adult groups and hopper bands in northeast **Saudi Arabia** (10 390 ha); hopper and adult groups in **Oman** (1 657 ha); bands and swarms in southern **Yemen** (3 190 ha).

FORECAST. More swarms will form, mature and lay eggs in **Kenya**, **Ethiopia**, and **Somalia** with hatching and band formation in May. Limited swarm movement north to **South Sudan** and Ethiopia. Breeding is likely in **Yemen**, **Oman**, and northeast **Saudi Arabia**, giving rise to hopper bands.

EASTERN REGION: THREAT

SITUATION. Swarm breeding in southwest **Iran**, hopper bands in the southeast (39 677 ha treated). Adult groups breeding in Baluchistan and Indus Valley, **Pakistan** and hopper groups formed (27 675 ha treated).

FORECAST. More band and swarm formation in southern **Iran** and southwest **Pakistan**. Second generation of breeding to commence by mid-May, causing a further increase in locust numbers.



Widespread rains to cause a further deterioration in the situation

Widespread rains could allow a dramatic increase in locust numbers in East Africa, eastern Yemen and southern Iran. The current situation in East Africa remains extremely alarming as hopper bands and an increasing number of new swarms are forming in Kenya, southern Ethiopia and Somalia. This represents an unprecedented threat to food security and livelihoods because it coincides with the beginning of the long rains and the planting season. Although ground and aerial control operations are in progress, widespread rains that fell in late March will allow the new swarms to mostly remain, mature and lay eggs while a few swarms could move from Kenya to Uganda, South Sudan and Ethiopia. During May, the eggs will hatch into hopper bands that will form new swarms in late June and July, which coincides with the start of the harvest. The situation in Iran and Yemen is becoming increasingly worrisome. Swarms laid eggs along 900 km of coast in southwest Iran that are hatching and hopper bands are forming. The widespread heavy rains that fell in late March will allow another generation of breeding and a further increase in locusts during May, which will extend to Baluchistan, Pakistan. Locusts will also increase and hopper bands will form along the southern coast and in the interior of Yemen from the March rains and subsequent breeding.

The FAO Desert Locust Bulletin is issued every month by the Desert Locust Information Service (DLIS) at FAO HQ in Rome, Italy. DLIS continuously monitors the global Desert Locust situation, weather and ecology to provide early warning based on survey and control results from affected countries, combined with remote sensing, historical data and models. The bulletin is supplemented by Alerts and Updates during periods of increased Desert Locust activity.

Telephone: +39 06 570 52420 (7 days/week, 24 hr)
E-mail: ecllo@fao.org / faodlislocust@gmail.com

Internet: www.fao.org/ag/locusts
Facebook/Twitter: faolocust



Weather & Ecological Conditions in March 2020

Widespread and heavy rains fell during the third decade in the Horn of Africa, eastern Yemen, and southern Iran that will allow another generation of breeding to occur in the coming months.

WESTERN REGION

No significant rain fell in the region except for a few showers during the last decade in some areas along the southern side of the Atlas Mountains in Morocco. Conditions remained dry and unfavourable for breeding but green vegetation persisted near Ghat in southwest Libya.

CENTRAL REGION

In the spring breeding areas, light showers fell along the Persian Gulf coast at times during March and light rain occurred along the border of Saudi Arabia and Yemen near Sharawrah at mid-month. During the third decade, good rains fell along the southern coast of Yemen near Aden, in Wadi Hadhramaut and the eastern region that caused some flooding. Good rains also fell in northern Oman. Consequently, breeding conditions were becoming favourable in eastern Yemen. In the winter breeding areas, vegetation dried out along both sides of the Red Sea but conditions remained favourable on the Buri Peninsula in Eritrea and along the Tihama in Yemen. In Eastern Africa, good rains fell during the first two decades in southern Ethiopia and northwest Kenya. Widespread moderate to heavy rains fell during the third decade in Kenya, southern and eastern Ethiopia, and Somalia that will allow another generation of breeding to occur in the coming months.

EASTERN REGION

During the first two decades of March, good rains fell in Khyber Pakhtunkhwa province of northern Pakistan and in the Jaz Murian Basin in southeast Iran while light showers fell along parts of the southwest coast of Iran. During the third decade, widespread heavy rains fell throughout southern Iran except for the extreme southeast near Chabahar where light rains occurred that extended to coastal and interior areas of Baluchistan, Pakistan. Good rains also fell again in Khyber Pakhtunkhwa. Consequently, ecological conditions were extremely favourable in all spring breeding areas of southern Iran and southwest Pakistan for locust breeding and survival.



Area Treated

Control operations treated 165 000 ha in March compared to 136 000 ha in February.

Egypt	15 ha
Eritrea	5 640 ha
Ethiopia	50 350 ha (February, revised) 39 656 ha
Iran	39 676 ha
Iraq	1 625 ha
Kenya	15 278 ha (February, revised) 33 968 ha
Kuwait	21 ha
Oman	1 657 ha
Pakistan	27 675 ha
Saudi Arabia	10 390 ha
Somalia	159 ha
Sudan	870 ha
UAE	2 ha
Uganda	3 467 ha (February) 607 ha
Yemen	3 190 ha



Desert Locust Situation and Forecast

WESTERN REGION

MAURITANIA

• SITUATION

No locusts were reported during February and March.

• FORECAST

No significant developments are likely.

MALI

• SITUATION

During March, isolated mature solitary adults were present in the Tilemsi Valley to the west of Aguelhoc (1927N/0052E) and Tessalit (2011N/0102E).

• FORECAST

Low numbers of adults are likely to persist in a few places of the Adrar des Iforas, Tilemsi Valley and Timetrine.

NIGER

• SITUATION

No locusts were reported during March.

• FORECAST

No significant developments are likely.

CHAD

• SITUATION

No locusts were reported during March.

• FORECAST

No significant developments are likely.

BURKINA FASO

• SITUATION

No reports were received during March.

• FORECAST

No significant developments are likely.

SENEGAL

• SITUATION

No locusts were reported during March.

• FORECAST

No significant developments are likely.

BENIN, CAMEROON, CAPE VERDE, CÔTE D'IVOIRE, GAMBIA, GHANA, GUINEA, GUINEA BISSAU, LIBERIA, NIGERIA, SIERRA LEONE AND TOGO

• FORECAST

No significant developments are likely.

ALGERIA

• SITUATION

During March, isolated mature solitary adults were present in a few places of the Central Sahara between El Golea (3034N/0252E) and Adrar (2753N/0017W).

• FORECAST

Low numbers of locusts are likely to persist in parts of the central Sahara where local breeding is likely to occur in areas that receive rainfall.

MOROCCO

• SITUATION

During March, no locusts were seen in the Western Sahara south of Zag (2800N/0920W) and along the Draa Valley from Foug El Hassan (2901N/0853W) to Tata (2944N/0758W) and near Erfoud (3128N/0410W).

• FORECAST

Small-scale breeding is likely to occur in some places of the Draa Valley along the southern side of the Atlas Mountains.

LIBYA

• SITUATION

During March, isolated solitary immature and mature adults were present in the southwest near Ghat (2459N/1011E) and the Algerian border. No locusts were seen further north near Ghadames (3010N/0930E) and on the Al Hamada Al Hamra plateau.

• FORECAST

Small-scale breeding is likely to occur in the southwest near Ghat if more rains fall.

TUNISIA

• SITUATION

No locusts were reported during March.

• FORECAST

No significant developments are likely.

CENTRAL REGION

SUDAN

• SITUATION

During March, locusts declined on the Red Sea coast as conditions dried out. A residual hopper band and immature adult group were present on the southern coast early in the month, and a few immature and mature swarms appeared near the Eritrean border at mid-month. In the Tokar Delta, a mature group was laying on the 9th. Low numbers of immature and mature solitary adults were scattered elsewhere along parts of the coast as far north as the Egyptian border. In the Nile Valley, scattered mature solitary adults were present near Abu Hamed (1932N/3320E), Karima (1832N/3148E), and Dongola (1910N/3027E) as well as near Selima Oasis (2122N/2119E). Ground teams treated 870 ha.

• FORECAST

Locusts will decline further on the Red Sea coast. Small-scale breeding could occur in the Nile Valley.

ERITREA

• SITUATION

During March, groups of hoppers and immature adults were present on the southern coast of the Red Sea near Tio (1441N/4057E), on the Buri Peninsula north of Ghelaelo (1507N/4004E), on the central coast near Massawa (1537N/3928E), and on the northern coast near the Sudanese border. Similar infestations were also seen in the Dahlak Islands, most probably as a result of swarm migration from Yemen in about mid-January. Ground teams treated 5 640 ha.

• FORECAST

Locusts will decline on the Red Sea coast as conditions dry out and any remaining adults move northwards.

ETHIOPIA

• SITUATION

During March, hopper groups and bands continued to form in the south, mainly in southern parts of SNNPR (South Omo, Konso districts) and Oromiya (Borena) regions. Numerous immature and mature groups and swarms from earlier breeding and from adjacent areas of southern Somalia were also present in the south as well as in northern Oromiya (Arsi and Bale). Further north, a few immature and mature swarms were seen between Dire Dawa (0935N/4150E) and the Djibouti border on the 31st. Control operations treated 39 656 ha of which 20 962 ha were by air.

• FORECAST

Widespread breeding will continue to cause hopper bands and swarms to form in southern regions, which is likely to be supplemented by cross-border movements of swarms along the Somali and Kenyan border. Breeding is also likely to take place in areas of recent rains in the Ogaden (Warder, Gode, Afder) and eastern areas (Jijiga, Dire Dawa). Southerly winds could carry swarms further north into central and northern areas of the country where breeding could occur in areas that receive rains.

DJIBOUTI

• SITUATION

A late report clarified that mature gregarious adults were present on the coast near Tadjourah (1147N/4253E) and in the interior northwest of Obock (1154N/4317E) in early February.

During March, hopper bands and immature swarms were seen on the coast between Tadjourah and Obock, and a few swarms were seen near Djibouti (1134N/4309E) and south of Arta (1131N/4251E).

• FORECAST

Breeding may occur in areas of recent rainfall in the southern interior near Yoboki.

SOMALIA

• SITUATION

During the first week of March, mainly late instar hopper groups and bands were present on the northwest coast, a mature swarm was seen nearby, and adult groups were laying east of Berbera (1028N/4502E). In the northeast, a few hopper groups, bands and a mature swarm were reported near Garowe (0824N/4829E). In central areas, a hopper band was reported north of Belet Weyne (0444N/4512E) and a mature swarm was laying near Dusa Mareb (0532N/4623E) on the 18th. In the south, an immature swarm was seen at mid-month west of Mogadishu (0202N/4520E).

• FORECAST

Locust numbers will increase further from breeding that is likely to occur as a result of recent rains on the coast and plateau in the northwest, and in central and southern areas from Garowe to the Kenyan border. As a result, hatching and numerous hopper bands are expected during the forecast period.

KENYA

• SITUATION

During March, numerous hopper bands continued to develop in the centre and north, causing an increasing number of immature swarms to form and mature. Infestations were present in some 18 counties, primarily Turkana, Marsabit, Samburu, Isiolo, Laikipia, Meru and Embu. Ground and aerial control operations treated 33 968 ha.

• FORECAST

An increasing number of swarms will form and mature during April in central and northern counties. A second generation of breeding will commence in early April as mature swarms lay eggs that will begin to hatch by the end of the month. Laying, hatching and band formation will continue throughout the forecast period. Most of the breeding is likely to be concentrated in northern counties of Turkana, Marsabit, Samburu, and Isiolo.

TANZANIA

• SITUATION

No locusts were reported.

• FORECAST

The risk of any additional swarms arriving from the north is extremely low due to prevailing southerly winds. No significant developments are likely.

SOUTH SUDAN

• SITUATION

During March, several mature swarms arrived from the south in the Torit (0424N/3234E) area at mid-month. At least one swarm continued flying to the northwest and reached Juba (0451N/3134E) on the 21st, continued north to Bor (0613N/3134E) and then flew towards Ethiopia on the 23rd. A mature swarm was reported near the Uganda border and Loboni Payam (0350N/3244E) on the 29th.

• FORECAST

A few new-generation swarms could arrive in Eastern Equatoria from western Kenya and continue northwards.

UGANDA

• SITUATION

During the first week of March, mature swarms were seen in several northeastern districts near the Kenyan border south of Moroto (0231N/3439E) as well as further north near the South Sudanese border between Kitgum (0318N/3253E) and the Kenyan border. The last swarm was reported on the 15th just south of the South Sudanese border in Madi Opei district. Ground teams treated 607 ha.

• FORECAST

Successful egg-laying may have occurred in a few places of the northeast, which would give rise to hopper bands during the forecast period. A few swarms are likely to arrive from western Kenya in the northeast and continue northwards.

D.R. CONGO

• SITUATION

No locusts were reported.

• FORECAST

No significant developments are likely.

EGYPT

• SITUATION

During March, a few late instar hopper groups were present on the Red Sea coast in the southeast near El Sheikh El Shazly (2412N/3438E) early in the month that fledged into scattered immature solitarious adults. No locusts were seen elsewhere near Lake Nasser and on the Red Sea coast except for immature solitarious adults west of Abu Ramad (2224N/3624E). Ground teams treated 15 ha.

• FORECAST

Locusts will decline on the Red Sea coast. No significant developments are likely.

SAUDI ARABIA

• SITUATION

During March, only a few scattered mature solitarious adults remained in winter breeding areas on the Red Sea coast near Qunfidah (1909N/4107E). In the spring breeding areas of the interior, a mature swarm was present on the 3rd and again on the 15th near the Persian Gulf north between Al Hofuf (2523N/4935E) and Qaryat Al Ulya (2733N/4742E) where adult groups were laying during the first half of the month. By the end of the month, hatching had occurred and several first instar hopper bands had formed. Groups of mature adults were present in the north between Hail (2731N/4141E) and Al Jawf (2948N/3952E). No locusts were seen elsewhere along the Red Sea coast or in the interior, including near the Iraqi border at Rafha (4331N/2938E). Ground teams treated 10 390 ha.

• FORECAST

Additional hatching will occur in early April that is likely to cause small hopper bands to form near the Persian Gulf. Fledging should start in early May, giving rise to immature groups and perhaps a few small swarms. Breeding may also occur in the Al Jawf area.

YEMEN

• SITUATION

During March, scattered immature and mature adults were present on the central Tihama coast of the Red Sea between Hodeidah (1450N/4258E) and Al Qutai (1454N/4312E) and on the northern Tihama between Al Zuhrah (1541N/4300E) and Suq Abs (1600N/4312E). Hopper groups and bands were present on the southern Gulf of Aden coast from west of Am Rijja (1302N/4434E) to east of Zinjibar (1306N/4523E) that fledged, giving rise to several immature groups and swarms. Scattered immature and mature adults were seen further east along the coast near Ahwar (1333N/4644E) and Al Ghaydah (1612N/5210E). On the 31st, an immature swarm was seen in the eastern interior flying from east to west near Shehan (1746N/5229E) and the Oman border, and mature solitarious adults were present on the plateau near Hat (1719N/5205E). Ground teams treated 3 190 ha.

• FORECAST

Breeding will continue on the Red Sea and Gulf of Aden coasts, causing a further increase in locust numbers that will give rise to hopper groups, bands, adult groups and swarms. Breeding and band formation will also occur in the interior near Marib, in Wadi Hadhramaut, and on the eastern plateau where good rains fell recently. Swarm movement may occur in early April along the Omani border.

OMAN

• SITUATION

During March, hatching continued on the Batinah coast between Muscat (2337N/5833E) and Jamma (2333N/5733E), and breeding extended into the northern interior from Buraimi (2415N/5547E) to Ibra (2243N/5831E) and Adam (2223N/5731E). Consequently, hopper groups formed in both areas as well as on the eastern coast between Duqm (1939N/5743E) and Marmul (1808N/5516E). Fledging occurred from mid-month onwards, causing several immature groups to form during the last week. On the 31st, an immature swarm was seen southwest of Ibra (2314N/5630E) while other immature groups were seen moving in the south near Thumrait (1736N/5401E). Ground teams treated 1 657 ha.

• FORECAST

Additional groups and a few small swarms are likely to form on the northern and eastern coast and in the northern interior, some of which could move southwards. Second-generation hatching will increase, which could give rise to hopper groups and small bands. Swarm movement may occur in early April along the Yemen border.

IRAQ

• SITUATION

During the two decades of March, mature swarms were present in Basrah and Al Muthanna governorates where immature swarms were reported in February. The swarms spread to Thiqr governorate and were present between Samawah (3117N/4516E) and Basrah (3031N/4749E). Ground teams treated 1 625 ha.

• FORECAST

A few swarms may appear in Al Muthanna province during periods of southerly winds.

KUWAIT

• SITUATION

On 1 March, several immature swarms were seen in Kuwait City that moved to the Al Abdali area (3001N/4742E) in the north of the country where they were treated (approximately 21 ha) on 3–4 March.

• FORECAST

A few groups or small swarms may appear during periods of southerly winds in May.

BAHRAIN

• SITUATION

No locusts were seen during surveys on 2–3 March.

• FORECAST

A few groups or small swarms may appear in May.

QATAR

• SITUATION

A late report indicated that medium to dense immature swarms were seen in different parts of the country on 20–25 February.

• FORECAST

A few groups or small swarms may appear in May.

UAE

• SITUATION

On 5 March, a groups of immature adults arrived west of Abu Dhabi near the Saudi Arabian border at Al Sila (2402N/5143E) and 2 ha were treated.

• FORECAST

A few swarms may appear during periods of southerly winds.

JORDAN

• FORECAST

There is a low risk of a few immature swarms appearing from the south in May.

ISRAEL, LEBANON, PALESTINE, SYRIA, AND TURKEY

• FORECAST

No significant developments are likely.

EASTERN REGION

IRAN

• SITUATION

During March, adult groups and swarms laid eggs over a widespread area of the southern coast extending nearly 900 km from Iraq to Chab Deraz (2657N/5527E), comprising southern Khuzestan, Bushehr, Fars, and western Hormozgan provinces. A few immature groups and swarms were also seen along the southwest coast. By the end of the month, hatching had commenced and hoppers were forming groups and small bands. Breeding increased along the east Hormozgan coast between Minab (2708N/5705E) and Jask (2540N/5746E) where hopper groups and bands were present that started to fledge and form groups of immature adults at the end of the month. Breeding was underway near Chabahar (2517N/6036E) and the Pakistani border where hopper groups and bands were present. In the interior, breeding started in the Jaz Murian Basin where solitary adults were laying near Bampur (2711N/6028E). Ground teams treated 39 676 ha of which 4 750 ha were by air.

• FORECAST

Locust numbers will increase as more hatching and bands form along the southwest and southeast coast and

subcoastal areas where adult groups and swarms are expected to form in about mid-May. Another generation of breeding will occur near Jask where hatching and band formation could start by mid-May.

PAKISTAN

• SITUATION

During March, breeding continued in Baluchistan where widespread laying occurred in the north between Khuzdar (2749N/6639E), Nushki (2933N/6601E), and Dalbandin (2856N/6430E) by adult groups. Hopper groups of all instars were present south of the Afghan border, between Nushki, Kharan (2832N/6526E), and Washuk (2744N/6448E), south of Panjgur (2658N/6406E), in the Turbat (2600N/6303E) Valley, and on the coast near Pasni (2515N/6328E). By the end of the month, fledging had commenced and immature adults were forming a few groups. Hopper groups were also present in the Indus Valley districts of Rajanpur and Dera Bugti north of Sukkur (2742N/6854E). In Khyber Pakhtunkhwa, adult groups were seen laying at a few places north of Dera Ismail Khan (7055N/3150E) early in the month. In southern Punjab, scattered immature solitary adults were seen in a few places in the Cholistan Desert along the Indian border near Islamgarh (2751N/7048E) during the last decade of March. Ground teams treated 27 675 ha of which 200 ha were by air.

• FORECAST

More hopper groups, bands, immature groups and perhaps a few small swarms will form in Baluchistan and the Indus Valley. The adults will mature and another generation of breeding will occur with laying and hatching before the end of the forecast period. Small hopper groups will form from hatching in Khyber Pakhtunkhwa.

INDIA

• SITUATION

No locusts were seen in Rajasthan during March.

• FORECAST

No significant developments are likely.

AFGHANISTAN

• SITUATION

No locusts were reported during March.

• FORECAST

There is a low to moderate risk that a few groups and small swarms could appear in southern provinces and perhaps breed on a limited scale in favourable areas.



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

Caution (yellow), threat (orange) and danger (red).

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, 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.

Locust Hub

FAO in partnership with ESRI has developed a centralized hub for Desert Locust data and the latest progress on the emergency response to the Desert Locust upsurge (<https://locust-hub-hqfao.hub.arcgis.com>).

Calendar

The following activities are scheduled:

- **CRC/SWAC/DLIS.** Central Region and SWAC Desert Locust Information Officer workshop, Cairo, Egypt (postponed)
- **CLC/PRO/DLIS.** Western Region Desert Locust Information Officer workshop, Dakar, Senegal (postponed)



Glossary of terms

The following special terms are used in the Desert Locust Bulletin when reporting locusts:

Non-gregarious adults and hoppers

Isolated (few)

- very few present and no mutual reaction occurring
- 0–1 adult/400 m foot transect (or less than 25/ha)

Scattered (some, low numbers)

- enough present for mutual reaction to be possible but no ground or basking groups seen
- 1–20 adults/400 m foot transect (or 25–500/ha)

Group

- forming ground or basking groups
- 20+ adults/400 m foot transect (or 500+/ha)

Adult swarm and hopper band sizes

Very small

- swarm: less than 1 km²
- band: 1–25 m²

Small

- swarm: 1–10 km²
- band: 25–2,500 m²

Medium

- swarm: 10–100 km²
- band: 2,500 m² – 10 ha

Large

- swarm: 100–500 km²
- band: 10–50 ha

Very large

- swarm: 500+ km²
- band: 50+ ha

Rainfall

Light

- 1–20 mm

Moderate

- 21–50 mm

Heavy

- more than 50 mm

Summer rains and breeding areas

- July–September/October
- Sahel of West Africa, Sudan, western Eritrea; Indo-Pakistan border

Winter rains and breeding areas

- October–January/February
- Red Sea and Gulf of Aden coasts; northwest Mauritania,

Western Sahara

Spring rains and breeding areas

- February–June/July
- Northwest Africa, Arabian Peninsula interior, Somali plateau, Iran/Pakistan border

Other reporting terms

Breeding

- The process of reproduction from copulation to fledging

Recession

- Period without widespread and heavy infestations by swarms

Remission

- Period of deep recession marked by the complete absence of gregarious populations

Outbreak

- A marked increase in locust numbers due to concentration, multiplication and gregarisation which, unless checked, can lead to the formation of hopper bands and swarms

Upsurge

- A period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to- gregarious breeding in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions

Plague

- A period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously

Decline

- A period characterised by breeding failure and/or successful control leading to the dissociation of swarming populations and the onset of recessions; can be regional or major

Warning levels

Green

- *Calm*. 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 Desert Locust 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>

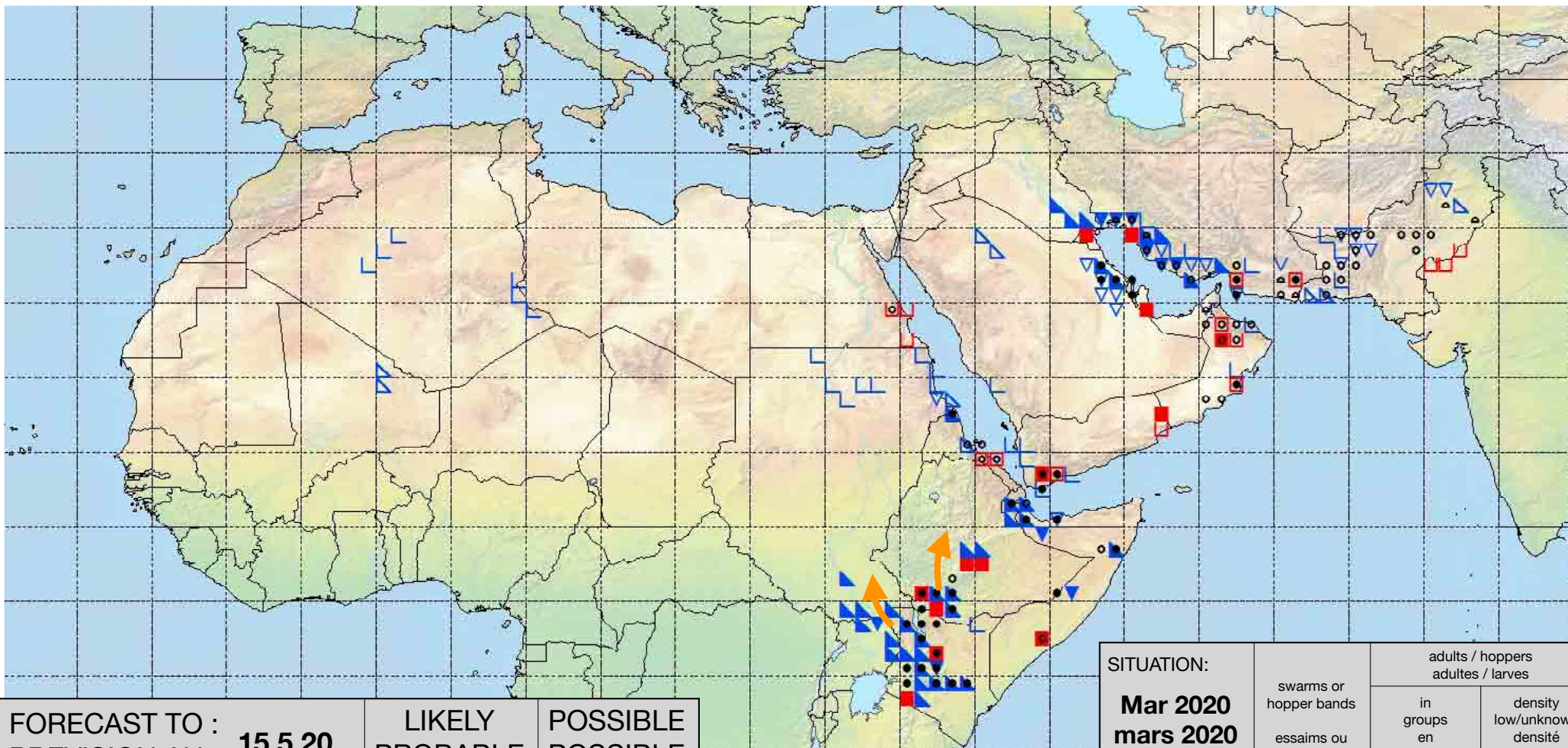
FAOLocust Slideshare. Locust presentations and photos
<http://www.slideshare.net/faolocust>









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





















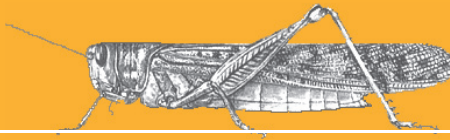
Desert Locust Summary

Criquet pèlerin – Situation résumée



FORECAST TO : PREVISION AU :	15.5.20	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favorables à la reproduction			
major swarm(s) essaim(s) important(s)			
minor swarms(s) essaim(s) limité(s)			
non swarming adults adults non essaimant			

SITUATION: Mar 2020 mars 2020	adults / hoppers adultes / larves		
	swarms or hopper bands essaims ou bandes larvaires	in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures			
mature or partially mature adults adultes matures ou partiellement matures			
adults, maturity unknown adultes, maturité inconnue			
egg laying or eggs pontes ou œufs			
hoppers larves			
hoppers & adults (combined example) larves et adultes (symboles combinés)			



Desert Locust Bulletin

General situation during April 2020
Forecast until mid-June 2020

WESTERN REGION: CALM

SITUATION. Isolated locusts in **Algeria, Morocco,** and northern **Mali**.

FORECAST. Very limited breeding possible in **Morocco** and **Algeria**. Low risk of swarms appearing in the eastern Sahel and moving westwards in June.

CENTRAL REGION: THREAT

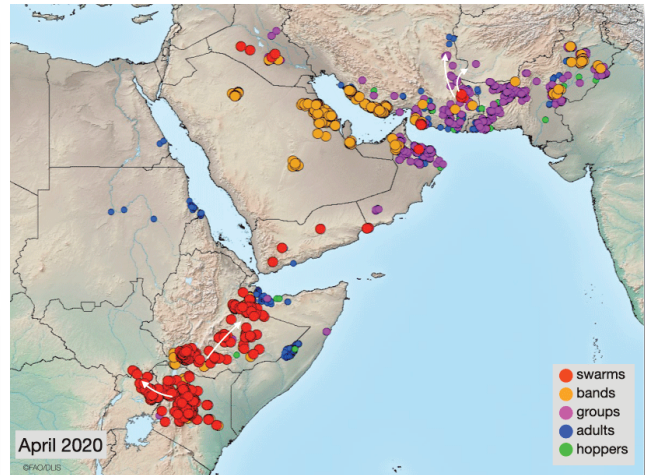
SITUATION. Control operations against hopper bands and new-generation swarms in **Kenya** (14 637 ha treated) and **Ethiopia** (99 948 ha); a few swarms in **South Sudan, Uganda, Djibouti**; hopper groups in northern and central **Somalia** (600 ha). Hopper bands in northeast Saudi Arabia (29 868 ha) and **UAE** (1 320 ha); swarms and bands in **Iraq** (815 ha); hopper and adult groups with breeding in **Oman** (4 147 ha); swarm breeding in **Yemen** interior; a few swarms on Yemen/Oman border; scattered adults in **Sudan** and **Egypt**.

FORECAST. Second-generation hatching and band formation in **Kenya, Ethiopia,** and **Somalia** with new swarms in mid-June. A few swarms may invade **South Sudan** and **Uganda** and move north. Immature adult groups and swarms to form in **Saudi Arabia** and **Oman** and move to summer breeding areas. Bands and swarms to form in **Yemen**. Swarms from East Africa may arrive in **Eritrea** and **Sudan** from mid-June onwards.

EASTERN REGION: THREAT

SITUATION. Hopper bands in southwest **Iran** and adult group laying in southeast (98 658 ha treated). Hopper and adult groups in Baluchistan, hopper bands in Indus Valley and Punjab, **Pakistan** (50 289 ha treated). Adult groups laying in southwest **Afghanistan** (20 ha).

FORECAST. More band and swarm formation in southern **Iran** and southwest **Pakistan**. A few swarms likely to reach Indo-Pakistan border area in early May followed by several waves of swarms later in May and June.



Locusts will increase further and extend to other areas

The current situation and forecast are alarming as locust infestations are expected to extend to other areas in the Horn of Africa and southwest Asia. Widespread rains fell in East Africa for the second consecutive month in April. Although control operations have reduced locust populations, another generation of breeding will cause locust numbers to increase further as new hopper bands and swarms form in Kenya, Ethiopia and Somalia during May and June. Swarms are expected to move further north in Ethiopia and Somalia with a risk that a few swarms may reach Eritrea and Sudan in mid-June. The situation is very worrisome in Yemen because several swarms laid eggs in the interior where widespread, heavy rains fell, which will allow hatching and hopper bands and swarms to form. Breeding in the Arabian Peninsula caused hopper bands to form in parts of Saudi Arabia, Iraq and UAE, and hopper and adult groups in northern Oman. Any swarms that form can move to the summer breeding areas in Yemen, Sudan and along the Indo-Pakistan border. Some swarms could perhaps continue to Chad and Niger. In southwest Asia, more hopper groups and bands formed in Iran and to a lesser extent in Pakistan. Adult groups and small swarms from breeding in Baluchistan, the Indus Valley, and Punjab in Pakistan are likely to move to desert areas along both sides of the Indo-Pakistan border from early May onwards. This is expected to be supplemented by several waves of swarms coming from the spring breeding areas during June.

The FAO Desert Locust Bulletin is issued every month by the Desert Locust Information Service (DLIS) at FAO HQ in Rome, Italy. DLIS continuously monitors the global Desert Locust situation, weather and ecology to provide early warning based on survey and control results from affected countries, combined with remote sensing, historical data and models. The bulletin is supplemented by Alerts and Updates during periods of increased Desert Locust activity.

Telephone: +39 06 570 52420 (7 days/week, 24 hr)
E-mail: eclod@fao.org / faodlislocust@gmail.com

Internet: www.fao.org/ag/locusts
Facebook/Twitter: faolocust



Weather & Ecological Conditions in April 2020

Widespread and heavy rains fell in the Horn of Africa, the interior of Yemen, and southern Iran that will allow breeding to continue.

WESTERN REGION

No significant rain fell in the region during April. Consequently, breeding conditions were favourable on a limited basis in a few areas of Algeria mainly near irrigated agricultural perimeters in the Adrar Valley in central Sahara and in runoff areas of the Hoggar Mountains in the south near Tamanrasset. Similar conditions were present in Morocco along parts of the Draa Valley south of the Atlas Mountains.

CENTRAL REGION

During April, light to moderate rains fell at times in northeast Saudi Arabia, extending to central and southern interior areas, and to Qatar and UAE. In Yemen, heavy rains fell throughout the interior on 14–24 April, causing floods in Marib, Bayhan, Shabwah, Wadi Hadhramaut and Al Maharah. Heavy rains fell throughout most of Djibouti on the 20–21st when 80 mm fell in the capital, nearly half its annual average, 100 mm near Arta, and 60 mm in the south near Ali Sabieh, causing flooding. In East Africa, heavy rains fell in southern Ethiopia and near Dire Dawa during the first decade. Widespread rains fell during the second decade in Kenya, Ethiopia as far north as Amhara, southern Somalia, and in northwest Somalia. During the third decade, the rains intensified and spread further in all areas of Somalia and throughout Ethiopia as far north as Dire Dawa. Consequently, breeding conditions remained favourable and will continue for the next few months.

EASTERN REGION

Good rains fell in the spring breeding areas of southwest Iran near Bushehr and in the Jaz Murian Basin of the southeast interior during the first decade. This was followed by good rains on the central coast in southern Iran during the second decade and light showers in the third decade in the southwest and Jaz Murian. Good rains also fell in the Zabol area of northern Sistan-Baluchistan in Iran and adjacent areas in southwest Afghanistan. Very little rain fell elsewhere in Sistan-Baluchistan and in Baluchistan, Pakistan during April. Nevertheless, breeding conditions remained favourable from earlier rains in Iran but was declining in southwest Pakistan as vegetation started to dry out. Good rains fell in Punjab, Pakistan.



Area Treated

Control operations treated more than 302 000 ha in April compared to 182 000 ha in March.

Afghanistan	20 ha
Ethiopia	51 633 ha (March, revised)
	99 948 ha
India	1 970 ha
Iran	98 658 ha
Iraq	815 ha
Kenya	38 378 ha (March, revised)
	14 637 ha
Oman	4 147 ha
Pakistan	50 289 ha
Saudi Arabia	29 868 ha
Somalia	600 ha
UAE	1 320 ha
Uganda	(not reported)



Desert Locust Situation and Forecast

WESTERN REGION

MAURITANIA

• SITUATION

No reports were received during April.

• FORECAST

No significant developments are likely.

MALI

• SITUATION

During April, immature and mature solitary adults were reportedly present in the northeast and concentrating in Timetrine southeast of Ti-n-kar (1926N/0022W) and along the western side of the Adrar des Iforas near Aguelhoc (1927N/0052E).

• FORECAST

Small concentrations of adults are likely to persist in a few places of the Adrar des Iforas, Tilemsi Valley and Timetrine.

NIGER

• SITUATION

No locusts were reported during April.

• FORECAST

There is a low risk that a few spring-bred swarms from Arabia could arrive in the east in mid-June and continue westwards.

CHAD

• SITUATION

No locusts were reported during April.

• FORECAST

There is a low risk that a few spring-bred swarms from Arabia could arrive in the east in early June and continue westwards.

BURKINA FASO

• SITUATION

No reports were received during April.

• FORECAST

No significant developments are likely.

SENEGAL

• SITUATION

No reports were received during April.

• FORECAST

No significant developments are likely.

BENIN, CAMEROON, CAPE VERDE, CÔTE D'IVOIRE, GAMBIA, GHANA, GUINEA, GUINEA BISSAU, LIBERIA, NIGERIA, SIERRA LEONE AND TOGO

• FORECAST

No significant developments are likely.

ALGERIA

• SITUATION

During April, isolated mature solitary adults were present in the central Sahara near Adrar (2753N/0017W) and in the southern Sahara to the north of Tamanrasset (2250N/0528E). No locusts were seen in the east near Illizi (2630N/0825E) and Djanet (2434N/0930E).

• FORECAST

Low numbers of locusts are likely to persist and may breed on a small scale in the Adrar Valley of the central Sahara during May.

MOROCCO

• SITUATION

During April, isolated mature solitary adults were present in a few places in the Draa Valley south of Fom Zguid (3005N/0652W) and Zagora (3019N/0550W).

• FORECAST

Small-scale breeding may occur in May along parts of the Draa Valley but locust numbers will remain low.

LIBYA

• SITUATION

During April, no locusts were seen in the southwest near Ghat (2459N/1011E).

• FORECAST

No significant developments are likely.

TUNISIA

• SITUATION

No locusts were reported during April.

• FORECAST

No significant developments are likely.

CENTRAL REGION

SUDAN

• SITUATION

During April, a few scattered mature solitary adults remained on the Red Sea coastal plains south of Suakin (1906N/3719E), in the Tokar Delta Tokar (1827N/3741E), and on the southern coast between Aiterba (1753N/3819E) and the Eritrean border. In the Nile Valley, scattered mature solitary adults were present near Ed Debba (1803N/3057E) and Karima (1832N/3148E), and along the Atbara River near Ed Damer (1734N/3358E).

• FORECAST

Small-scale breeding could occur in the Nile Valley. A few swarms from the Arabian Peninsula may arrive in summer breeding areas after mid-May and from East Africa at the end of the forecast period.

ERITREA

• SITUATION

No surveys were undertaken and no locusts were reported during April.

• FORECAST

A few swarms from adjacent areas of northern Ethiopia may arrive in the south and in the western lowlands at the end of the forecast period.

ETHIOPIA

• SITUATION

During April, hopper bands continued to mature and immature swarms formed in the south, mainly in southern parts of SNNPR (South Omo, Konso districts) region between Arba Minch (0602N/3733E) and Teltele (0504N/3723E), and to a limited extent in southern Oromiya (Borena) region. Breeding also occurred in southern Ogaden between Negele (0520N/3935E) to El Kere (0550N/4205E). Some of the swarms moved north in Oromiya to Bale district and in the Ogaden (Fike, Afder) where they matured. Other immature and mature swarms were present in the Somali region from the edge of the Rift Valley west of Dire Dawa (0935N/4150E) to Jijiga (0922N/4250E), Ayasha (1045N/4234E), and the Somali border. Egg-laying occurred until mid-month and hatching started in the second week, giving rise to first to third instar hopper bands. Control operations treated 99 948 ha of which 83 675 ha were by air.

• FORECAST

As more swarms mature in the south, another generation of breeding will occur in SNNPR and is expected to extend over a widespread portion of Oromiya, including the

Ogaden, where hatching and hopper band formation will occur during May with new swarms forming from mid-June onwards. In the Somali region, immature swarms will start to form in mid-May and mature although some swarms could move northwest to Afar and Amhara and east to northern Somalia.

DJIBOUTI

• SITUATION

On 5 April, a maturing swarm was seen flying in the southwest near As Eylā (1100N/4206E).

• FORECAST

A few mature groups and small swarms may appear between As Eylā and Obock, and breed in areas of recent flooding.

SOMALIA

• SITUATION

During April, scattered immature and mature solitarious adults were present on the northwest coast where copulating was seen near Bulhar (1023N/4425E), including a few groups. On the plateau, dense early instar hopper groups were seen in Xariirat district near the Ethiopian border west of Boroma (0956N/4313E). A mature swarm from adjacent areas of Ethiopia was seen nearby on the 20th. Ground teams treated 600 ha with biopesticides. Adults were laying northeast of Burao (0931N/4533E). In central areas, breeding occurred in northeastern Galkayo region where hoppers and groups were present northeast of Xamur (0713N/4851E). Scattered mature solitarious adults and a few hoppers were present in Galguduud region near Dusa Mareb (0532N/4623E). The situation in the south remains unclear.

• FORECAST

Locust numbers will continue to increase in the northwest from breeding on the coast and plateau where hopper bands will form, giving rise to adult groups and small swarms in June. A similar situation is likely to occur in areas of recent rains in the northeast, centre and south.

KENYA

• SITUATION

During April, hopper bands continued to mature and formed an increasing number of immature swarms that matured in northern and central counties, primarily Isiolo, Marsabit, Samburu, and Turkana, and to a lesser extent in Laikipia, Meru, Tharaka and Garissa. By the last week of April, the hopper bands had finished fledging. Second-generation hatching probably started about mid-month and by the end of the month, there were a few reports of first instar bands in Marsabit, Samburu and Isiolo. Ground and aerial control operations treated 14 637 ha of which 13 460 ha were by air.

• FORECAST

Locust numbers will concentrate and breed mainly in Turkana, Marsabit, Samburu and, to a lesser extent, in Isiolo and Mandera where laying, hatching and band formation will occur in May, giving rise to a new generation of immature swarms from mid-June onwards.

UGANDA

• SITUATION

During April, immature and mature swarms were reported at times in the northeast between Mbale (0105N/3411E), Moroto (0231N/3439E), and Kitgum (0318N/3253E) until the 16th. Control operations were carried out but not reported.

• FORECAST

Limited egg-laying may have occurred in a few places of the northeast, which would give rise to hopper bands during the forecast period. A few swarms are likely to arrive from western Kenya in the northeast and continue northwards.

SOUTH SUDAN

• SITUATION

On 8–12 April, several immature and mature swarms from northeast Uganda arrived in the southeast near Loboni Payam (0350N/3244E) and continued north to Magwi (0408N/3218E) in Eastern Equatoria.

• FORECAST

A few swarms could arrive in Eastern Equatoria and continue northwards.

EGYPT

• SITUATION

During April, isolated immature solitarious adults persisted in a few places on the Red Sea coast in the southeast near El Sheikh El Shazly (2412N/3438E). No locusts were seen elsewhere on the coast.

• FORECAST

No significant developments are likely.

SAUDI ARABIA

• SITUATION

During April, breeding intensified near the Persian Gulf north between Al Hofuf (2523N/4935E) and Qaryat Al Ulya (2733N/4742E) where more hopper bands formed as well as further south on the coast near the UAE border. By the 20th, many hoppers had reached fifth instar. Early instar hopper bands formed in the interior south of Riyadh in the Al Aflaj area near Layla (2218N/4643E) and in the Nafud Desert in the north between Hail (2731N/4141E) and Al Jawf (2948N/3952E). Ground teams treated 29 868 ha.

• FORECAST

Immature adult groups and small swarms are likely to form during May along the Persian Gulf, near Al Aflaj, and in the Nafud Desert, and move towards the east, south and southwest.

YEMEN

• SITUATION

During April, an immature swarm was seen on the 3rd on the coast at the Oman border. Another immature swarm was seen flying northwards in the southern highlands over Ad Dali (1341N/4443E) on the 4th. Groups of mature adults were copulating along the southern coast near Ahwar (1333N/4644E) and west of Aden (1250N/4503E) as well as in the interior near Bayhan (1452N/4545E) and on the eastern plateau north of Wadi Hadhramaut where several mature swarms were also seen. At the end of the month, a swarm was seen copulating in the interior south of Marib (1527N/4519E).

• FORECAST

Breeding will continue on the southern coast and in the interior where rains fell last month, causing locust numbers to increase and form hopper groups and bands that will lead to adult groups and swarms from mid-June onwards. A few swarms from the north or northeast may arrive in the interior from mid-May onwards. Cross-border swarm movements may occur along the Omani border. Breeding may also occur on the Red Sea coast.

OMAN

• SITUATION

During April, most of the hopper groups had fledged by mid-month on the northern coast from south of Muscat (2337N/5833E) to north of Jamma (2333N/5733E) and in the northern interior between Ibri (2314N/5630E) and Buraimi (2415N/5547E) and near Adam (2223N/5731E), and formed immature adult groups. An immature swarm was seen near Jamma on the 16th. Some of the adult groups in the interior had become mature, and adult groups were copulating south of Buraimi near the UAE border and also south of Sur (2234N/5930E). Ground teams treated 4 147 ha. In the south, immature groups were seen on the 1st north of Thumrait (1736N/5401E) and again at mid-month. There were cross-border movements of immature swarms on the coast at the Yemen border near Sarfayt (1641N/5307E) on the 3rd and the 21st.

• FORECAST

Although second-generation adult groups and perhaps a few small swarms are likely to form in the northern interior while hatching and hopper groups will continue in parts of Buraimi, Dhahira and Sharqiya, locusts will decline as conditions become dry. Swarms may appear in the south from adjacent areas of Yemen.

UAE

• SITUATION

During April, hopper bands, at densities of up to 250 hoppers/m², were seen along the Omani border south of Al Ain (2412N/5538E) and in the west near the Saudi Arabian border at Ras Ghumais (2421N/5136E) from egg-laying that started in late February and hatching from the second week

of March to after mid-April. Gregarious adults were also reported in a few places. Ground teams treated 1 320 ha.

• FORECAST

Small swarms may form near Al Ain and Ras Ghumais. A few other swarms may appear during periods of westerly winds.

IRAQ

• SITUATION

During the first week of April, a few medium-density mature swarms were seen copulating south of Karbala (3236N/4401E) between Al Diwaniyah (3158N/4453E) and Samawah (3117N/4516E). Hatching occurred during the first three weeks, giving rise to hopper groups and bands to form. A few mature swarms were seen west of Karbala. Ground teams treated 815 ha.

• FORECAST

Immature adult groups and perhaps a few small swarms are likely to form from mid-May onwards in the southern governorates of Al Najaf, Al Diwaniyah, Al Anbar and Al Muthanna. These may be supplemented by other immature swarms appearing from the south during periods of southerly winds.

KUWAIT, BAHRAIN, QATAR

• FORECAST

A few groups or small swarms may appear during periods of north-westerly or southerly winds.

JORDAN

• FORECAST

A few immature swarms may appear in the south and east in May during periods of easterly or southerly winds.

D.R. CONGO, ISRAEL, LEBANON, PALESTINE, SYRIA, TANZANIA AND TURKEY

• FORECAST

No significant developments are likely.

EASTERN REGION

IRAN

• SITUATION

During April, hatching occurred throughout the month along the southwest coast and subcoastal areas between Bushehr (2854N/5050E) and Bander-e Lengheh (2634N/5452E) where more hopper groups and bands formed with some reaching fifth instar in the last week. In the southeast, hopper and adult groups matured, and mature groups laid on the coast near Jask (2540N/5746E), subcoastal areas of Chabahar (2517N/6036E), and in the interior in the Suran (2717N/6159E) Valley and in the Jaz Murian Basin between Ghale Ganj (2731N/5752E) and Iranshahr (2712N/6042E). Adult groups moved north in northern Sistan-Baluchistan appearing near Zahedan (2930N/6051E) at mid-month and in South Khorasan near Nehbandan (3132N/6002E)

during the last week. Egg-laying was seen in these areas and along the Pakistani border south of Mirjaveh (2901N/6127E). At the end of April, new hatching and band formation occurred near Jask. Ground teams treated 98 658 ha.

• FORECAST

In the southwest, more adult groups and small swarms will form and mature. In the southeast, locust numbers will increase as more hatching occurs in coastal and interior areas, causing hopper groups and bands to form, giving rise to immature adult groups and swarms from late May onwards. In northern Sistan-Baluchistan and South Khorasan, hatching and band formation will occur in early May, giving rise to immature adult groups and small swarms in June. A few spring-bred swarms from the Arabian Peninsula may move east along the southern coast.

PAKISTAN

• SITUATION

During April, widespread breeding continued in Baluchistan where hoppers and groups were present in the interior from Khuzdar (2749N/6639E) and Washuk (2744N/6448E) north to Nushki (2933N/6601E), Dalbandin (2856N/6430E) and in the Chagai Hills on the Afghan border, in central areas near Panjgur (2658N/6406E), and along the coast and subcoastal areas from Gwadar (2508N/6219E) and Pasni (2515N/6328E) to Turbat (2600N/6303E). A hopper band was reported at Nushki. Adults formed groups that were maturing and a second generation of laying commenced after mid-month in the north near Dalbandin. In the Indus Valley, hopper groups and bands were maturing and forming immature adult groups in Rajanpur, Kashmore, and Dera Bugti districts north of Sukkur (2742N/6854E). Breeding caused hopper groups and bands to form on the Punjab Plains and in Khyber Pakhtunkhwa north of Dera Ismail Khan (7055N/3150E) in Lakki Marwat district. Hopper groups were present on the Indian border in Ghotki (Sindh) and Bahawalnagar (Punjab) districts. Control operations treated 50 289 ha of which 4 600 ha were by air.

• FORECAST

Current hopper groups and bands will form immature groups and small swarms in Baluchistan, the Indus Valley, Punjab and Khyber Pakhtunkhwa that will move to Tharparkar, Nara and Cholistan during May and June. Limited second-generation hatching will occur in northern Baluchistan, causing hopper groups and bands to form. Additional groups and swarms from spring breeding areas are expected to arrive along the Indo-Pakistan border during June.

INDIA

• SITUATION

During April, first and second instar solitary hoppers and groups were seen on the Pakistani border between Sri Ganganagar (2955N/7353E) and Fazilka (3024N/7402E) in Punjab, and on the border in Rajasthan northwest of

Jaisalmer (2652N/7055E). Ground teams treated 1 970 ha.

• FORECAST

A few small swarms from spring breeding areas are likely to appear in Rajasthan from early May onwards, which is expected to increase during the remainder of May and June.

AFGHANISTAN

• SITUATION

On 14 April, a mature gregarious adult group from adjacent areas of Iran appeared in the southwest province of Nimruz and was seen copulating near the Helmand River in Charburjak district (ca. 3016N/6203E) south of Zaranj (3057N/6151E). On the 25th, mature groups were reported northeast of Zaranj in Chakhansor district. Ground teams treated 20 ha.

• FORECAST

Hatching is likely to occur by early May that could cause small hopper groups and bands to form in Nimruz. Breeding is likely along the southern Helmand near the Chagai Hills. Adults may move northwards in Nimruz, Helmand and Kandahar provinces.



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

Caution (yellow), threat (orange) and danger (red).

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, 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.

Locust Hub

FAO in partnership with ESRI has developed a centralized hub for Desert Locust data and the latest progress on the emergency response to the Desert Locust upsurge (<https://locust-hub-hqfao.hub.arcgis.com>).

Calendar

The following activities are scheduled:

- **CRC/SWAC/DLIS.** Central Region and SWAC Desert Locust Information Officer workshop, Cairo, Egypt (postponed)
- **CLCPRO/DLIS.** Western Region Desert Locust Information Officer workshop, Dakar, Senegal (postponed)



Glossary of terms

The following special terms are used in the Desert Locust Bulletin when reporting locusts:

Non-gregarious adults and hoppers

Isolated (few)

- very few present and no mutual reaction occurring
- 0–1 adult/400 m foot transect (or less than 25/ha)

Scattered (some, low numbers)

- enough present for mutual reaction to be possible but no ground or basking groups seen
- 1–20 adults/400 m foot transect (or 25–500/ha)

Group

- forming ground or basking groups
- 20+ adults/400 m foot transect (or 500+/ha)

Adult swarm and hopper band sizes

Very small

- swarm: less than 1 km² • band: 1–25 m²

Small

- swarm: 1–10 km² • band: 25–2,500 m²

Medium

- swarm: 10–100 km² • band: 2,500 m² – 10 ha

Large

- swarm: 100–500 km² • band: 10–50 ha

Very large

- swarm: 500+ km² • band: 50+ ha

Rainfall

Light

- 1–20 mm

Moderate

- 21–50 mm

Heavy

- more than 50 mm

Summer rains and breeding areas

- July–September/October
- Sahel of West Africa, Sudan, western Eritrea; Indo-Pakistan border

Winter rains and breeding areas

- October–January/February
- Red Sea and Gulf of Aden coasts; northwest Mauritania, Western Sahara

Spring rains and breeding areas

- February–June/July
- Northwest Africa, Arabian Peninsula interior, Somali plateau, Iran/Pakistan border

Other reporting terms

Breeding

- The process of reproduction from copulation to fledging

Recession

- Period without widespread and heavy infestations by swarms

Remission

- Period of deep recession marked by the complete absence of gregarious populations

Outbreak

- A marked increase in locust numbers due to concentration, multiplication and gregarisation which, unless checked, can lead to the formation of hopper bands and swarms

Upsurge

- A period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to- gregarious breeding in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions

Plague

- A period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously

Decline

- A period characterised by breeding failure and/or successful control leading to the dissociation of swarming populations and the onset of recessions; can be regional or major

Warning levels

Green

- *Calm.* 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 Desert Locust 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>

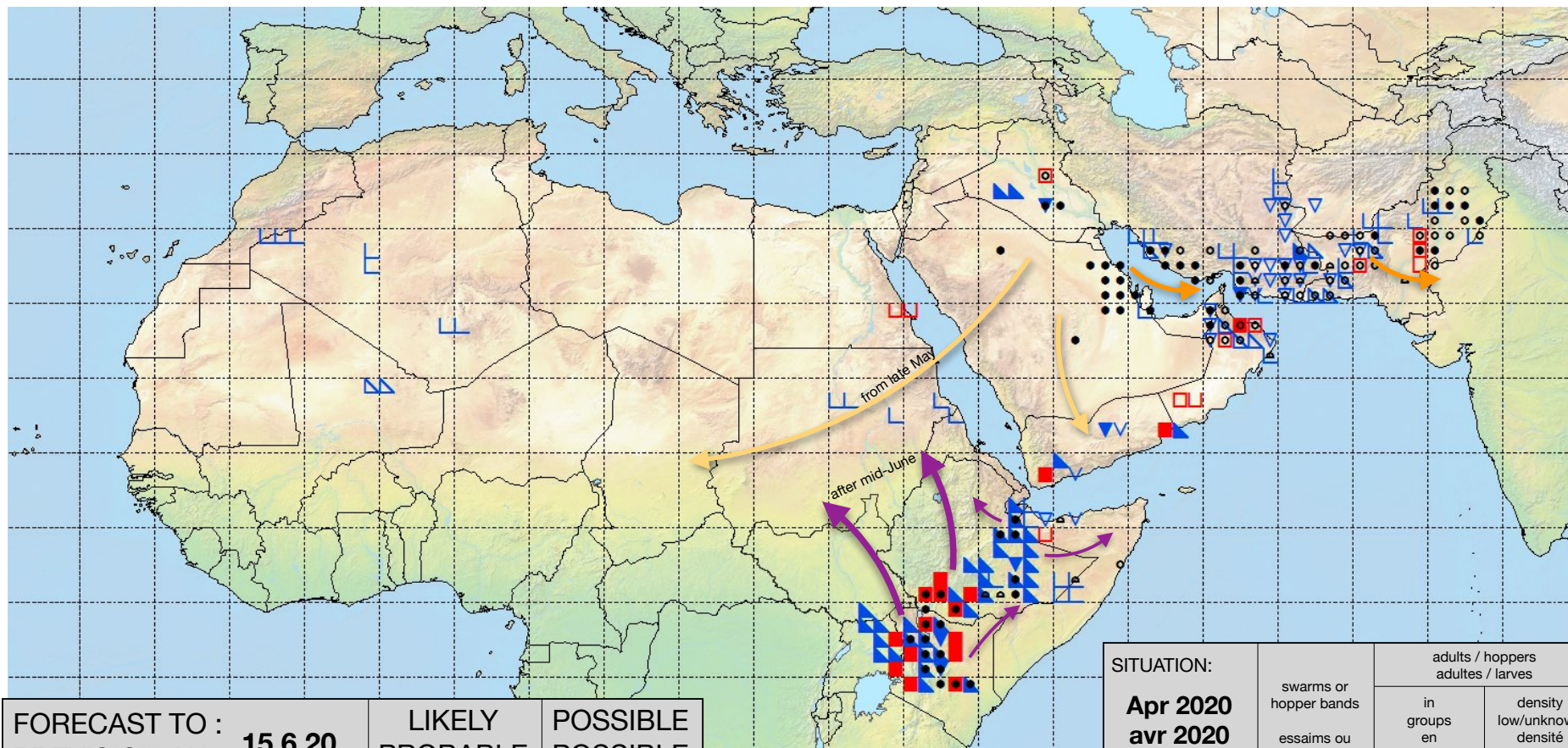
FAOLocust Slideshare. Locust presentations and photos
<http://www.slideshare.net/faolocust>

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



Desert Locust Summary

Criquet pèlerin – Situation résumée



FORECAST TO : PREVISION AU : 15.6.20	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favorables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarms(s) essaim(s) limité(s)		
non swarming adults adults non essaimant		

SITUATION: Apr 2020 avr 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)			



Desert Locust Bulletin

General situation during May 2020
Forecast until mid-July 2020

WESTERN REGION: CALM

SITUATION. Isolated breeding in **Algeria**; unconfirmed adults in northern **Mali**.

FORECAST. Sahel breeding will start with the onset of rains. Risk of swarms appearing in eastern **Chad** after mid-June and moving westwards to **Niger, Nigeria, Mali, Burkina Faso, and Mauritania**.

CENTRAL REGION: THREAT

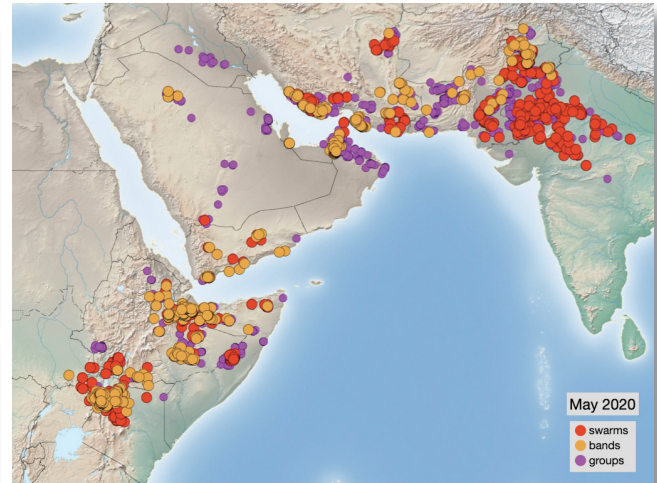
SITUATION. Control operations against late first-generation swarms and second-generation hopper bands in northwest **Kenya** (18 737 ha treated), **Ethiopia** (57 058 ha), and **Somalia** (10 245 ha); local breeding in **South Sudan**, a few swarms appear in **Uganda**. Immature groups form in northeast **Saudi Arabia** (9 015 ha), hopper bands form immature groups in **Oman** (1 385 ha) and **UAE** (4 537 ha) with some moving to north coast; hopper groups in **Iraq** (101 ha); swarm breeding in **Yemen** interior; scattered adults in **Sudan**.

FORECAST. Second-generation hatching and band formation in **Kenya, Ethiopia, and Somalia** with new swarms in mid-June. A few swarms may invade **South Sudan and Uganda** and move north. Immature adult groups and swarms to form in **Saudi Arabia and Oman** and move to summer breeding areas. Bands and swarms to form in **Yemen**. Swarms from East Africa may arrive in **Eritrea and Sudan** from mid-June onwards.

EASTERN REGION: THREAT

SITUATION. Spring-bred hopper and adult groups, bands and swarms in southern **Iran** (101 138 ha treated) and Baluchistan, Indus Valley, and Punjab of **Pakistan** (76 466 ha). Immature swarms arrive early in Rajasthan and some continue to northern states in **India** (53 604 ha).

FORECAST. Spring-bred swarms will form in southern **Iran** and southwest **Pakistan** and migrate during June to the Indo-Pakistan border for breeding with the onset of the monsoon. Swarms will oscillate in northern **India** before returning to Rajasthan in late June. Swarms from the Horn of Africa expected to arrive from early July onwards.



Spring-bred swarms will spread to summer breeding areas

The unprecedented Desert Locust threat to food security and livelihoods continues in the Horn of Africa and is likely to spread to southwest Asia and perhaps West Africa. Early migration of spring-bred swarms from southwest Pakistan to Rajasthan, India occurred in May before the monsoon and some swarms continued to northern states for the first time since 1962. The swarms will oscillate east and westwards before returning to lay eggs with the onset of the monsoon in Rajasthan where successive waves of swarms will arrive from southern Iran in June and the Horn of Africa in July. Second-generation breeding is underway in northwest Kenya and numerous hopper bands have formed that will give rise to immature swarms from the second week of June until at least mid-July. A similar situation is underway in Somalia and Ethiopia. Most of the new swarms will migrate northwards from Kenya to Ethiopia and traverse South Sudan to Sudan after mid-June while other swarms will move to northern Ethiopia. Swarms that reach northeast Somalia are likely to migrate across the northern Indian Ocean to the Indo-Pakistan border area. Breeding is in progress in Yemen where swarms are likely to form, some of which could migrate to northern Somalia and northeast Ethiopia. Although summer rains have commenced in the south of Sudan, there is a risk that some swarms from Kenya and Ethiopia that arrive in Sudan could continue to eastern Chad and move further west.

The FAO Desert Locust Bulletin is issued every month by the Desert Locust Information Service (DLIS) at FAO HQ in Rome, Italy. DLIS continuously monitors the global Desert Locust situation, weather and ecology to provide early warning based on survey and control results from affected countries, combined with remote sensing, historical data and models. The bulletin is supplemented by Alerts and Updates during periods of increased Desert Locust activity.

Telephone: +39 06 570 52420 (7 days/week, 24 hr)

E-mail: eclo@fao.org / faodlislocust@gmail.com

Internet: www.fao.org/ag/locusts

Facebook/Twitter: [faolocust](https://www.facebook.com/faolocust)



Weather & Ecological Conditions in May 2020

Conditions dry out in spring breeding areas of southwest Asia but remain favourable in East Africa. Summer rains start in the extreme south of Sudan.

WESTERN REGION

During May, only light, localized showers fell at times in the Tahoua area of Niger and in southeast Mauritania. Consequently, dry and unfavourable conditions prevailed in the Sahel of West Africa as well as in Northwest Africa, except near irrigated agricultural perimeters in the Adrar Valley in the central Sahara of Algeria.

CENTRAL REGION

During May, moderate to heavy showers fell in central Somalia and southern, eastern, and northern Ethiopia during the first decade. Lighter showers fell during the second decade in central Somalia and parts of eastern and northern Ethiopia. During the third decade, light to moderate rains fell again on the Somali plateau in the northeast and northwest, extending to Ethiopia. Consequently, breeding conditions continued to be favourable in most areas. Although little rain fell in Kenya, breeding conditions remained favourable in the northwest (Turkana, Marsabit). In Yemen, good rains fell in the northeastern interior between Thamud and the Oman border and in the Al Jawf region of the northwest, extending to Najran in southwest Saudi Arabia, during the first decade. Moderate to heavy rains fell along the entire southern coast during the third decade, including a tropical storm that brought heavy rains to coastal areas of eastern Yemen near Al Ghaydah, Yemen as well as coastal and interior areas of Dhofar in southern Oman on 28–31 May. Light showers fell at times in northern Oman. In the summer breeding areas of Sudan, the Inter-Tropical Convergence Zone (ITCZ) continues its seasonal movement northwards, reaching South Kordofan and En Nahud by the end of the month. Consequently, summer rains commenced north of the South Sudan border in parts Blue Nile, South Kordofan near Kadugli, and southern areas of West Kordofan states at mid-month. In Eritrea, light to moderate rains fell during the first two decades in northern areas of the western lowlands.

EASTERN REGION

Showers fell sporadically in parts of the spring breeding areas in southern Iran and southwest Pakistan during May. Consequently, breeding conditions were declining, and vegetation was drying out, especially in Baluchistan, Pakistan where it quickly dried out earlier than normal. By the end of the month, only small localized areas of green vegetation remained in southern Kerman and South Khorasan. Heavier rains fell in Punjab and parts of the Indus Valley in Pakistan. Dry conditions prevailed in the summer

breeding areas along both sides of the Indo-Pakistan border. Strong westerly winds associated with Cyclone Amphan, the first cyclone of the 2020 North Indian Ocean cyclone season, prevailed over northern India during the third week of May.



Area Treated

Control operations treated more than 332 000 ha in May compared to nearly 305 000 ha in April.

Ethiopia	57 058 ha
India	53 604 ha
Iran	101 138 ha
Iraq	101 ha
Kenya	16 594 ha (April, revised)
	18 737 ha
Oman	1 385 ha
Pakistan	76 466 ha
Saudi Arabia	9 015 ha
Somalia	10 245 ha
UAE	4 537 ha
Uganda	(not reported)



Desert Locust Situation and Forecast

WESTERN REGION

MAURITANIA

• SITUATION

No locusts were reported during April and May.

• FORECAST

Small-scale breeding will commence in the southeast with the onset of the summer rains.

MALI

• SITUATION

During May, isolated immature and mature solitary adults were reported by locals in the Adrar des Iforas of the northeast near Aguelhoc (1927N/0052E).

• FORECAST

Isolated adults are likely to persist in a few places of the Adrar des Iforas. Small-scale breeding will commence with the onset of the summer rains. There is a risk that swarms may arrive in the east in mid-July and continue westwards in the absence of rainfall.

NIGER

• SITUATION

No locusts were reported during May.

• FORECAST

Small-scale breeding will commence in the central pasture areas and on the Tamesna Plains with the onset of the summer rains. There is a risk that swarms could arrive in the east from the first week of July onwards and continue westwards in the absence of rainfall.

CHAD

• SITUATION

No locusts were reported during May.

• FORECAST

If rains do not fall in adjacent areas of Sudan during June, there is a risk that swarms from East Africa could arrive in the east from the last week of June onwards and continue westwards in the absence of rainfall. Small-scale breeding will commence in central and eastern areas with the onset of the summer rains.

SENEGAL

• SITUATION

No reports were received during May.

• FORECAST

No significant developments are likely.

NIGERIA

• FORECAST

There is a risk that swarms from could arrive in the east from the first week of July onwards and continue westwards in the absence of rainfall.

BURKINA FASO

• FORECAST

There is a risk that swarms may arrive in the east in mid-July and continue westwards in the absence of rainfall.

BENIN, CAMEROON, CAPE VERDE, CÔTE D'IVOIRE, GAMBIA, GHANA, GUINEA, GUINEA BISSAU, LIBERIA, SIERRA LEONE, AND TOGO

• FORECAST

No significant developments are likely.

ALGERIA

• SITUATION

During May, local breeding occurred in the Adrar (2753N/0017W) Valley of the central Sahara where isolated fledglings, immature and mature solitary adults were present. Isolated mature solitary adults were seen in the south near Tamanrasset (2250N/0528E).

• FORECAST

No significant developments are likely.

MOROCCO

• SITUATION

No locusts were reported during May.

• FORECAST

No significant developments are likely.

LIBYA

• SITUATION

No locusts were reported during May.

• FORECAST

No significant developments are likely.

TUNISIA

• SITUATION

No locusts were reported during May.

• FORECAST

No significant developments are likely.

CENTRAL REGION

SUDAN

• SITUATION

During May, scattered mature solitary adults were present in the Nile Valley between Shendi and Dongola, and in Kassala State near Kassala (1527N/3623E). On 15–18 May, scattered immature and mature gregarious adults were seen north of the South Sudan border near Rabak (1310N/3245E) in White Nile state, near Damazin (1148N/3421E) in Blue Nile, and in the extreme southeast of South Kordofan. No locusts were seen elsewhere in South and West Kordofan.

• FORECAST

There remains a low to moderate risk that a few small swarms from the northern Arabian Peninsula may arrive during the first half of June. A larger number of swarms from Kenya and Ethiopia may arrive from the last week of June in Blue Nile, White Nile, South Kordofan, and South Darfur and move towards North Darfur and North Kordofan if rains fall; otherwise, they are likely to move towards the west to Chad. Breeding will commence with the onset of the summer rains and could occur further south than normal.

ERITREA

• SITUATION

No surveys were undertaken during May but there were unconfirmed reports from locals and farmers of a few swarmlets on the border of Ethiopia at the end of the month.

• FORECAST

A few swarms from adjacent areas of northern Ethiopia may arrive in the south and in the western lowlands.

ETHIOPIA

• SITUATION

During May, immature swarms remained in the southern region of SNNPR (South and North Omo districts) until about mid-month. Thereafter, groups of mature adults were seen to the west in Bench district and Gambela region, and a few mature swarms were present to the east in Borena district where early instar hopper bands

had been seen earlier in the month. In the Somali region, mature swarms laid eggs in the Ogaden during the first half of the month and widespread hatching and band formation occurred between El Kere (0550N/4205E) and Degeh Bur (0813N/4333E) from earlier breeding. Hopper bands, immature and mature swarms were present further north from west of Dire Dawa (0935N/4150E) to Ayasha (1045N/4234E). Mature adult groups and swarms moved into the Afar region where egg-laying occurred in a few places with hatching and band formation during the last week. A mature group was reported in the Tigray highlands near Mekele (1329N/3928E) on the 22nd. Control operations treated 57 058 ha of which 16 354 ha were by air.

• FORECAST

In the Somali region, swarms will continue to form near Dire Dawa, supplement by swarm formation in the Ogaden from mid-June onwards and Afar in July. While many of the swarm will remain in areas that received heavy rains and mature, some swarms are likely to move to Amhara, and Tigray where breeding could occur. There is a risk that some swarms may arrive from Yemen in July.

DJIBOUTI

• SITUATION

No surveys were undertaken and no locusts were reported during May.

• FORECAST

A few groups and small swarms may appear at times in the south from adjacent areas of Ethiopia and Somalia. This could be supplemented by a few swarms arriving from Yemen.

SOMALIA

• SITUATION

During May, adult groups and swarms were present and laying eggs on the northern plateau between Boroma (0956N/4313E), Iskushuban (1017N/5014E), and Garowe (0824N/4829E), and in the central region of Galguduud between Galkayo (0646N/4725E) and Dusa Mareb (0532N/4623E). Hopper groups and bands of mixed instars were present in these areas as well as on the northwest coast between Berbera (1028N/4502E) and Bulhar (1023N/4425E). Control operations treated 10 245 ha using biopesticides.

• FORECAST

Locust numbers will continue to increase further as hatching continues, causing additional hopper groups and bands to form in northern and central areas. An increasing number of immature swarms will form throughout the forecast period.

KENYA

• SITUATION

During May, swarm laying, hatching, and the formation of an increasing number of hopper bands occurred in the northwest (Turkana, Marsabit counties). Late maturing

swarms will also present in Samburu while a few swarms were reported in Wajir county. By the end of the month, hopper bands had reached fourth instar. In Turkana county, most infestations were located south of Lodwar (0307N/3535E). Control operations treated 18 737 ha of which 17 067 ha were by air.

• FORECAST

An increasing number of second-generation immature swarms will start to form from hopper bands in Turkana and Marsabit during the second week of June and continue to at least mid-July. A limited number of swarms may form in other central and northern counties from undetected breeding. As conditions dry out, swarms will move northwards to adjacent countries.

UGANDA

• SITUATION

During May, a few maturing swarms appeared in the northeast from adjacent areas of Kenya. On the 16th, a swarm was seen south of the South Sudan border and close to Kidepo Valley National Park in Karenga district. On the 20th, a swarm flew northwards over Moroto (0231N/3439E) and there was a swarm report in Karenga on the 26th. Control operations were carried out but not reported.

• FORECAST

A few swarms are likely to arrive from adjacent areas of Kenya in the northeast and continue northwards.

SOUTH SUDAN

• SITUATION

During the second week of May, scattered adults were reportedly copulating northeast of Torit (0424N/3234E) in Eastern Equatoria and mid-instar hoppers and a hopper band were present. A few mature swarms were seen southeast of Kapoeta (0446N/3335E) near the Kenya border on the 9th that may have moved northeast to East Kapoeta where they were seen on 13–15 May before crossing to Ethiopia.

• FORECAST

Immature swarms are likely to arrive in Eastern Equatoria and continue northwards to Sudan from mid-June onwards.

EGYPT

• SITUATION

During May, no locusts were seen on the Red Sea coast and in subcoastal areas between Marsa Alam (2504N/3454E) and the Sudan border.

• FORECAST

No significant developments are likely.

SAUDI ARABIA

• SITUATION

During the first week of May, immature adult groups formed in areas of previous breeding near the Persian Gulf between Dammam (2625N/5003E) and Al Hofuf (2523N/4935E).

Some of these groups moved towards the southwest where mature adult groups were seen between Wadi Dawasir (2028N/4747E) and Najran (1729N/4408E). In the Nafud Desert of the north, second to fourth instar hopper bands were present between Hail (2731N/4141E) and Al Jawf (2948N/3952E) in the first week and immature groups formed after mid-month. On the 9th, a mature swarm appeared near Najran, probably coming from Yemen, and was seen copulating. Ground teams treated 9 015 ha.

• FORECAST

Limited breeding may occur in the southwest in areas of recent rain near Najran.

YEMEN

• SITUATION

During May, widespread laying by groups and swarms occurred in the interior of Hadhramaut, Shabwah, Al Mahrah, Abyan, Al Jawf, Lahij, and Marib governorates. Hatching and band formation started during the second week near Marib (1527N/4519E) and north of Wadi Hadhramaut. On the southern coast, late instar hopper bands were present near Aden (1250N/4503E), Ahwar (1333N/4644E), and Sayhut (1512N/5115E). A mature swarm was seen close to the coast near Mayfa'a (1417N/4734E) on the 19th and groups of maturing adults were present near Al Ghaydah (1612N/5210E) early in the month. On the 31st, there were reports of immature and mature swarms near Aden. On the Red Sea coast, scattered immature solitary adults were present between Suq Abs (1600N/4312E) and Bayt Al Faqih (1430N/4317E). Control operations were not possible.

• FORECAST

Breeding will continue in the interior, especially in the northeast (Thamud–Shehan) and the northwest (Al Jawf), and on the southern coast that will cause hopper bands and swarms to form. Local breeding will occur along the Red Sea coastal plains.

OMAN

• SITUATION

During the first half of May, scattered immature and mature adults and groups were present on the northern Batinah coast near Rustaq (2323N/5725E) and in the northern interior. Late breeding occurred in the northeast near Ras Al Hadd (2232N/5948E) where first instar hopper groups were present at the beginning of the month and fifth instar hoppers were seen during the third week. Late instar hopper groups were present in the interior near Buraimi (2415N/5547E) and the UAE border. After mid-month, groups of immature adults formed near Buraimi. Some of the groups moved northeast on the 25–26th from Buraimi to the Musandam Peninsula and Mahda (2518N/5620E) where two immature swarms were reported, and immature adults were seen washed up on the shore near Sohar (2421N/5644E). On the 28th, several immature groups were

seen near Ras Al Had. Ground teams treated 1 385 ha.

• FORECAST

As conditions dry out, adult groups and small swarms in northern coastal areas are likely to move to the Indo-Pakistan border while those in the interior south of the Al Hajar Mountains are more likely to move south towards eastern Yemen.

UAE

• SITUATION

During the first half of May, numerous hopper bands of varying instars and immature adult groups were present along the border of Oman from Al Qou'a (2324N/5525E) to Al Ain (2413N/5545E) and Al Shiwayb (2445N/5548E). Some of the adult groups moved north towards the coast and an immature swarm overflew Dubai (2516N/5518E) on the 24th. A few hopper bands and immature adult groups were seen in the west near the Saudi Arabian border at Ras Ghumais (2421N/5136E) where breeding had occurred in April. Ground teams treated 4 537 ha up to 18 May.

• FORECAST

A few adult groups may be present near Al Ain where they are likely to migrate either southwest towards Yemen or east towards Indo-Pakistan.

IRAQ

• SITUATION

During May, hopper groups were present in areas of previous breeding Karbala (3236N/4401E) and Nasiriyah (3103N/4616E). Ground teams treated 101 ha up to 20 May.

• FORECAST

Locust numbers will decline as vegetation dries out and adults move southwards.

BAHRAIN, D.R. CONGO, ISRAEL, JORDAN, KUWAIT, LEBANON, PALESTINE, QATAR, SYRIA, TANZANIA, AND TURKEY

• FORECAST

No significant developments are likely.

EASTERN REGION

IRAN

• SITUATION

During May, fourth and fifth instar hopper groups and bands were present on the southwest coast between Bushehr (2854N/5050E) and Bander-e Lengheh (2634N/5452E), and in coastal and interior areas of the southeast that gave rise to an increasing number of immature adult groups and swarms. In the southeast, early instar hopper groups and bands formed on the coast near Jask (2540N/5746E), Jaz Murian Basin, and in the northern interior near Saravan (2721N/6220E) and Zahedan (2930N/6051E) from another generation of breeding. In South Khorasan, mature swarms were reported between Sarbisheh (3235N/5948E) and the

Afghan border early in the month. Ground teams treated 101 138 ha of which 300 ha were by air.

• FORECAST

More immature groups and swarms will form along the southern coastal plains of Bushehr, Hormozgan, and Sistan-Baluchistan and interior areas of southern Fars and Kerman, Sistan-Baluchistan, and South Khorasan. As vegetation continues to dry out, these infestations will move east to the Indo-Pakistan summer breeding areas and the situation should improve by the end of the forecast period.

PAKISTAN

• SITUATION

During May, hopper groups and bands were present mainly in the interior of Baluchistan between Panjgur (2658N/6406E) and Quetta (3015N/6700E), on the coast near Pasni (2515N/6328E), in the central Indus Valley near Rohri (2739N/6857E), on the Punjab Plains, and in Khyber Pakhtunkhwa. An increasing number of immature adult groups and swarms formed and were maturing throughout the month in all areas. As conditions were drying out, groups and swarms moved east to the summer breeding areas in the deserts of Cholistan, Nara, and Tharparkar in Punjab and Sindh provinces. Control operations treated 76 466 ha of which 220 ha were by air.

• FORECAST

Additional adult groups and swarms will form in Baluchistan, Punjab, and Khyber Pakhtunkhwa and move to Cholistan, Nara and Tharparkar desert areas along the Indo-Pakistan border where they will mature and lay eggs with the onset of the monsoon rains. This will be supplemented by other spring-bred swarms arriving from Iran during June and East Africa from early July onwards. Locusts that arrive in advance of the rains are likely to settle in cropping areas or continue east to India.

INDIA

• SITUATION

On 4 May, an immature swarm was reported between Jaisalmer and Jodhpur. Thereafter, immature adult groups and swarms from the west continued to arrive and spread throughout Rajasthan. As conditions were dry, swarms continued further east, reaching Ajmer (2627N/7438E) at mid-month, Madhya Pradesh on the 21st as far east as Indore (2243N/7551E). Winds from Cyclone Amphan helped to carry numerous swarms east of Jaipur (2654N/7548E) on the 25th to northern Madhya Pradesh as far east as Nagod (2434N/8035E) near Uttar Pradesh. A few groups reached northern Maharashtra near Nagpur (2109N/7905E). Ground teams treated 53 604 ha.

• FORECAST

Successive waves of spring-bred swarms from Iran and Pakistan will arrive in Rajasthan throughout June with additional swarms coming from East Africa to Gujarat and

Rajasthan from early July onwards. Locusts that arrive in advance of the monsoon rains are likely to settle in cropping areas or continue eastwards to Madhya Pradesh, Uttar Pradesh, Maharashtra, Chhattisgarh and perhaps as far east as Bihar and Odisha. The locusts in the central northern states will oscillate east and westwards before returning to Rajasthan with the onset of the monsoon in early July. Swarm mobility will decline as they mature and lay eggs in Rajasthan. Early breeding could produce hopper bands by the end of the forecast period.

AFGHANISTAN

• SITUATION

On 1 May, there was a report of locusts near Lashkarga (3138N/6424E) in Nawi district of Helmand province.

• FORECAST

A few adult groups and perhaps small swarms may transit through the southern provinces as they move from spring breeding areas to the Indo-Pakistan border areas.



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

Caution (yellow), threat (orange) and danger (red).

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, 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.

Locust Hub

FAO in partnership with ESRI has developed a centralized hub for Desert Locust data and the latest progress on the emergency response to the Desert Locust upsurge (<https://locust-hub-hqfao.hub.arcgis.com>).

500th Desert Locust Bulletin

The current issue is the 500th bulletin produced by FAO's Desert Locust Information (DLIS) continuously every month since September 1978 (<http://www.fao.org/ag/locusts/common/ecg/1579/en/DL1e.pdf>).

Calendar

No activities are currently scheduled.



Glossary of terms

The following special terms are used in the Desert Locust Bulletin when reporting locusts:

Non-gregarious adults and hoppers

Isolated (few)

- very few present and no mutual reaction occurring
- 0–1 adult/400 m foot transect (or less than 25/ha)

Scattered (some, low numbers)

- enough present for mutual reaction to be possible but no ground or basking groups seen
- 1–20 adults/400 m foot transect (or 25–500/ha)

Group

- forming ground or basking groups
- 20+ adults/400 m foot transect (or 500+/ha)

Adult swarm and hopper band sizes

Very small

- swarm: less than 1 km² • band: 1–25 m²

Small

- swarm: 1–10 km² • band: 25–2,500 m²

Medium

- swarm: 10–100 km² • band: 2,500 m² – 10 ha

Large

- swarm: 100–500 km² • band: 10–50 ha

Very large

- swarm: 500+ km² • band: 50+ ha

Rainfall

Light

- 1–20 mm

Moderate

- 21–50 mm

Heavy

- more than 50 mm

Summer rains and breeding areas

- July–September/October
- Sahel of West Africa, Sudan, western Eritrea; Indo-Pakistan border

Winter rains and breeding areas

- October–January/February
- Red Sea and Gulf of Aden coasts; northwest Mauritania, Western Sahara

Spring rains and breeding areas

- February–June/July
- Northwest Africa, Arabian Peninsula interior, Somali plateau, Iran/Pakistan border

Other reporting terms

Breeding

- The process of reproduction from copulation to fledging

Recession

- Period without widespread and heavy infestations by swarms

Remission

- Period of deep recession marked by the complete absence of gregarious populations

Outbreak

- A marked increase in locust numbers due to concentration, multiplication and gregarisation which, unless checked, can lead to the formation of hopper bands and swarms

Upsurge

- A period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to- gregarious breeding in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions

Plague

- A period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously

Decline

- A period characterised by breeding failure and/or successful control leading to the dissociation of swarming populations and the onset of recessions; can be regional or major

Warning levels

Green

- *Calm.* 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 Desert Locust 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>

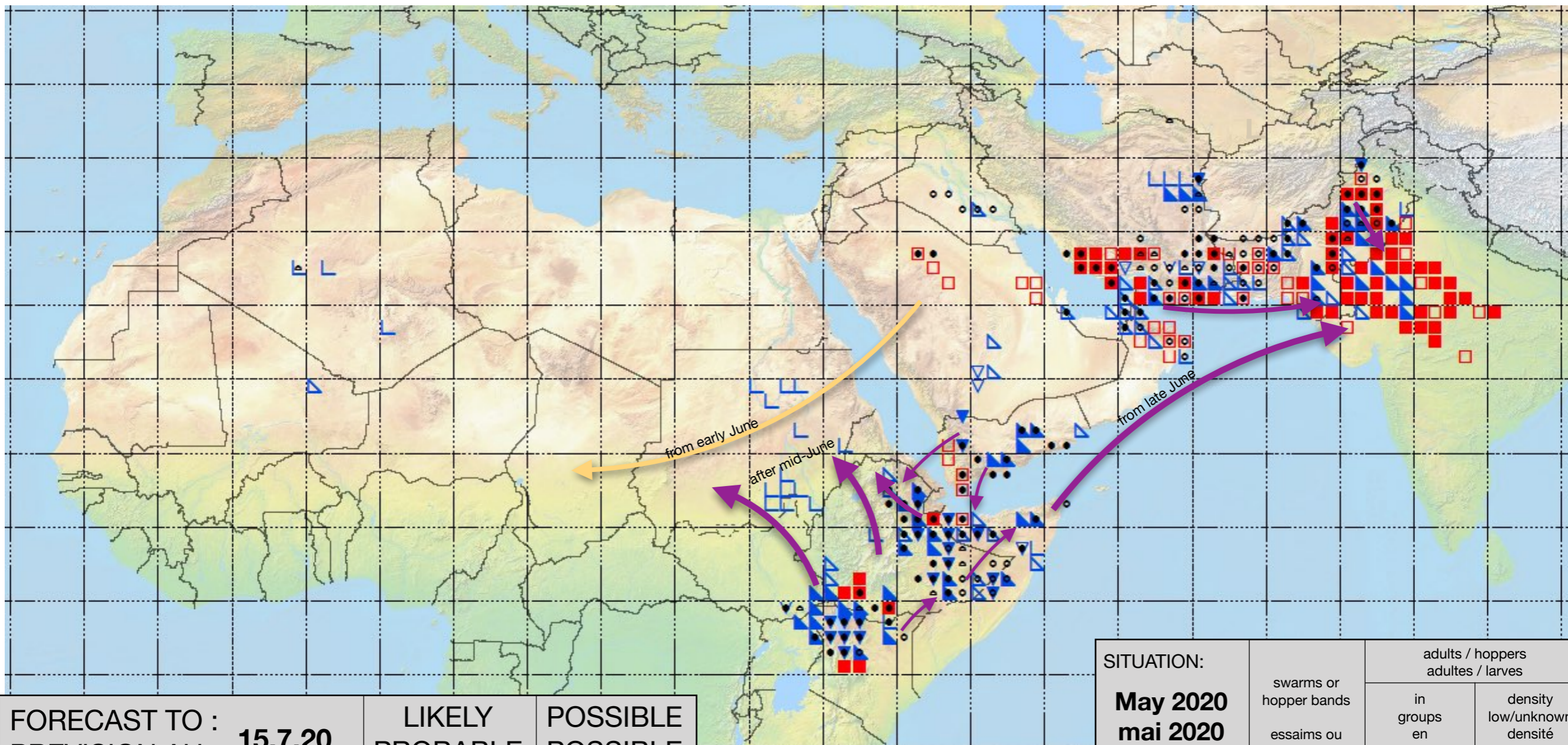
eLERT. Online database of resources and technical specifications for locust emergencies
<http://sites.google.com/site/elertsite>










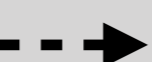
Desert Locust Summary



















Criquet pèlerin – Situation résumée

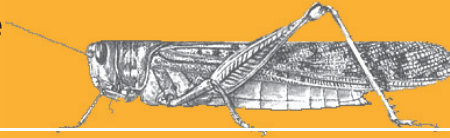
500 



SITUATION: May 2020 mai 2020	swarms or hopper bands	adults / hoppers adultes / larves	
	essaims ou bandes larvaires	in groups en groupes	density low/unknown densité faible/inconnue

FORECAST TO : PREVISION AU : 15.7.20	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favorables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarms(s) essaim(s) limité(s)		
non swarming adults adults non essaimant		

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)			



Desert Locust Bulletin

General situation during June 2020 Forecast until mid-August 2020

WESTERN REGION: CALM

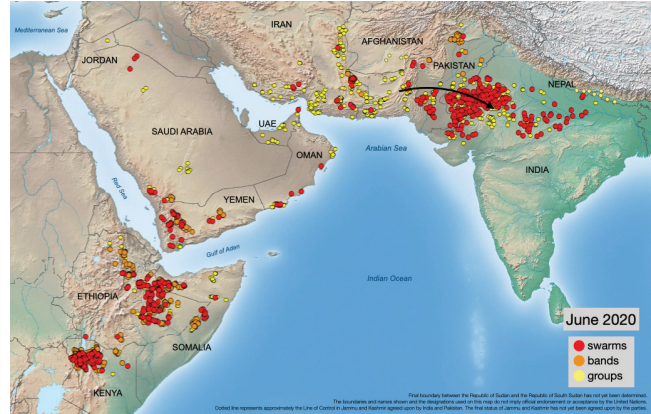
SITUATION. Local breeding in **Algeria** (86 ha treated).
FORECAST. Sahel breeding will start with the onset of rains. Risk of East Africa swarms appearing in eastern **Chad** and moving westwards.

CENTRAL REGION: THREAT

SITUATION. Hopper bands and more swarms form in northwest **Kenya** (30 830 ha treated), eastern **Ethiopia** (75 219 ha) and northwest and central **Somalia** (19 029 ha), and new breeding in northern Ethiopia. Scattered adults in **Sudan**. Hopper bands and swarms in the interior and south coast of **Yemen** (343 ha), swarm breeding on south coast of **Oman** (126 ha), immature groups in **UAE** (198 ha), swarm breeding and hopper bands in southwest **Saudi Arabia** (5 360 ha), immature group arrives in eastern **Jordan**.
FORECAST. Swarms in northwest **Kenya** will move across **South Sudan** to **Sudan** and **Ethiopia** where breeding will occur. Limited swarm breeding in **Somalia** while other swarms will move to the northeast and to Indo-Pakistan. Swarms in Yemen likely to move to Ethiopia and Somalia. Swarm breeding expected on the Red Sea coast in **Yemen** and **Saudi Arabia**, and in Sudan and western **Eritrea**.

EASTERN REGION: THREAT

SITUATION. Bands and swarms decline in **Iran** (67 689 ha treated) and **Pakistan** (47 198 ha) as swarms move to Indo-Pakistan border, most continue to **India** (72 109 ha), many in northern states, and a few to **Nepal**. Breeding in southern **Afghanistan** (2 645 ha). Breeding starts along both sides of Indo-Pakistan border in pre-monsoon areas.
FORECAST. Remaining spring-bred swarms in **Iran** and **Pakistan** and swarms in northern states of **India** will migrate to the Indo-Pakistan border where swarms from the Horn of Africa are likely to arrive from mid-July onwards. Substantial laying, hatching and band formation will occur along both sides of the Indo-Pakistan border.



Spring-bred swarms shifting to summer breeding areas

The unprecedented Desert Locust threat to food security and livelihoods persists in the Horn of Africa and is increasing in southwest Asia. Second-generation spring swarms formed in northwest Kenya, eastern Ethiopia, and parts of Somalia, while breeding commenced in the Ethiopian Highlands. Most swarms in northwest Kenya will migrate northwards and cross South Sudan to Sudan while other swarms will migrate to Ethiopia. A few swarms could transit northeast Uganda. Swarms that concentrate in northern Somalia are likely to move east to the Indo-Pakistan summer breeding areas. While the northward migration from Kenya is imminent, the later it starts, the more likely swarms will find good breeding conditions once they arrive in Sudan and this will reduce the risk of further migration to West Africa. More breeding is expected in Yemen and some swarms could migrate to northern Somalia and northeast Ethiopia. In southwest Asia, many of the spring-bred swarms migrated to the Indo-Pakistan border before the monsoon rains so some swarms continued east to northern states and a few groups reached Nepal. These swarms will return to Rajasthan with the start of the monsoon in early July to join other swarms still arriving from Iran and Pakistan, which is expected to be supplemented by swarms from the Horn of Africa in about mid-July. Substantial hatching and band formation will occur along the Indo-Pakistan border that will cause the first-generation summer swarms to form in mid-August.

The FAO Desert Locust Bulletin is issued every month by the Desert Locust Information Service (DLIS) at FAO HQ in Rome, Italy. DLIS continuously monitors the global Desert Locust situation, weather and ecology to provide early warning based on survey and control results from affected countries, combined with remote sensing, historical data and models. The bulletin is supplemented by Alerts and Updates during periods of increased Desert Locust activity.

Telephone: +39 06 570 52420 (7 days/week, 24 hr)

E-mail: eclo@fao.org / faodlislocust@gmail.com

Internet: www.fao.org/ag/locusts

Facebook/Twitter: [faolocust](https://www.facebook.com/faolocust)



Weather & Ecological Conditions in June 2020

Pre-monsoon rains fall along the Indo-Pakistan border where breeding conditions become favourable in a few areas. Rains continued in the southern breeding areas of Sudan.

WESTERN REGION

In the Sahel of West Africa, the Inter-Tropical Convergence Zone (ITCZ) continued its seasonal movement northwards during June but was some 125 km further south than normal over Mauritania and Mali. By the end of the month, it had reached south of Timbedra in southeast Mauritania, near Gouma in central Mali, Tassara in Niger, and Arada in Chad. Although good rains fell during the first decade in central Mali, northern Niger as far north as the Air Mountains, and eastern Chad as far north as Abeche, conditions were still dry in the summer breeding areas of the northern Sahel. In Northwest Africa, conditions were dry except near irrigated agricultural perimeters in parts of the central Sahara in Algeria.

CENTRAL REGION

In the summer breeding areas of Sudan, the Inter-Tropical Convergence Zone (ITCZ) continued its seasonal movement northwards, reaching Mellit (North Darfur), Hamrat Esh Sheikh (North Kordofan) and Khartoum by the end of the month, which was about normal for this time of year. Consequently, moderate rains fell during the second half of the month in the southern portion of the summer breeding areas in South and West Darfur, West and South Kordofan, White Nile, Sennar, Blue Nile, and Al Qadarif states, mainly south of Zalingei, Nyala, En Nahud, El Obeid and Sennar, which should allow ecological conditions to become favourable for breeding. On the Arabian Peninsula, low to moderate rains fell on the Red Sea and Gulf of Aden coastal plains from Lith, Saudi Arabia to Ahwar, Yemen during the first decade. Good rains also fell along the eastern coast between Sayhut and the Oman border, and in the interior of Yemen from Bayhan to Wadi Hadhramaut. In East Africa, light to moderate rains fell during the first two decades in Turkana county of northwest Kenya and in northern Ethiopia that extended to the southern part of the western lowlands in Eritrea. Heavy rains fell on the 23rd in northern Turkana country. In northern Somalia, light to moderate rains fell along the plateau during the first decade and, thereafter, light rains fell at times near Hargeisa. Strong northerly winds prevailed over Kenya, Ethiopia and Somalia, becoming southwesterly over northern Somalia.

EASTERN REGION

Vegetation continued to dry out rapidly in the spring breeding areas of southern Iran and southwest Pakistan

during June. In Iran, light rain fell in parts of east Hormozgan and the Jaz Murian Basin in southeast Iran during the first decade. Vegetation was nearly dry in all areas but remained green in parts of South Khorasan. In Pakistan, vegetation was nearly dry in Baluchistan by the end of the month but remained green in parts of Khyber Pakhtunkhwa where light rain fell during the first two decades. Pre-monsoon rains fell along both sides of the Indo-Pakistan border during the first decade and at times during the last week between Barmer and Nagaur in Rajasthan, India. Consequently, breeding conditions were improving in some areas. Strong westerly winds prevailed for several days over Madhya Pradesh after Cyclone Nisarga, the strongest cyclone in Maharashtra in June since 1891, made landfall on 4 June. Later in the month, strong southerly winds occurred over Uttar Pradesh on the 26–28th.



Area Treated

Control operations treated 320 832 ha in June compared to some 331 726 ha in May.

Afghanistan	2 645 ha
Algeria	86 ha
Ethiopia	75 219 ha
India	72 109 ha
Iran	67 689 ha
Kenya	18 177 ha (May, revised)
	30 830 ha
Oman	126 ha
Pakistan	47 198 ha
Saudi Arabia	5 360 ha
Somalia	19 029 ha
UAE	198 ha
Yemen	343 ha



Desert Locust Situation and Forecast

WESTERN REGION

MAURITANIA

• SITUATION

During June, no locusts were seen by extensive surveys carried out in the south.

• FORECAST

Small-scale breeding will commence in the southeast with the onset of the summer rains. There is a risk that swarms may arrive in the southeast at the end of July or in early August.

MALI

• SITUATION

No locusts were reported during June.

• FORECAST

Isolated adults are likely to persist in a few places of the Adrar des Iforas. Small-scale breeding will commence with the onset of the summer rains. There is a risk that swarms may arrive in the east in late July and continue westwards if there are no rains.

NIGER

• SITUATION

No locusts were reported during June.

• FORECAST

Small-scale breeding will commence in the central pasture areas and on the Tamesna Plains with the onset of the summer rains. There is a risk that swarms from East Africa could arrive in the east about mid-July and continue westwards in the absence of rainfall.

CHAD

• SITUATION

From 18 June onwards, no locusts were seen in the east during surveys carried out from south of Goz Beida (1242N/2125E) to Fada (1714N/2132E) except for isolated mature solitary adults south of Amdjarass (1604N/2250E) near the Sudan border.

• FORECAST

If conditions remain dry in adjacent areas of Sudan, there is a risk that swarms from East Africa could arrive in the east during the first half of July and continue westwards in the absence of rainfall. Small-scale breeding will commence in central and eastern areas with the onset of the summer rains.

SENEGAL

• SITUATION

No locusts were reported during June.

• 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 June, scattered immature and mature adults were present near irrigated areas in the central Sahara between Reggane (2643N/0010E) and Timimoun (2916N/0014E) as well as east of Timimoun and Reggane. A few of the adults were copulating. Isolated mature solitary adults were seen north of Tamanrasset (2250N/0528E). No locusts were

present near Illizi (2630N/0825E), Djanet (2434N/0930E), Tamanrasset, and on the Niger border near In Guezzam (1937N/0552E). Ground teams treated 86 ha.

• FORECAST

Small-scale breeding will occur in the central Sahara near Adrar where limited hatching will give rise to low numbers of hoppers near irrigated areas.

MOROCCO

• SITUATION

No locusts were reported during June.

• FORECAST

No significant developments are likely.

LIBYA

• SITUATION

No locusts were reported during June.

• FORECAST

No significant developments are likely.

TUNISIA

• SITUATION

No locusts were reported during June.

• FORECAST

No significant developments are likely.

CENTRAL REGION

SUDAN

• SITUATION

During June, scattered mature solitary adults were present in the Nile Valley from Shendi to north of Dongola (1910N/3027E), the Baiyuda Desert, east of Khartoum (1533N/3235E), the east between Kassala (1527N/3623E) and Sinkat (1855N/3648E), and the south between Kosti (1310N/3240E) and the South Sudan border. No locusts were seen during extensive surveys in Sennar and Blue Nile states, and between El Obeid (1311N/3010E) and the Chad border in Kordofan (North, West, South) and Darfur (North, South) states.

• FORECAST

A moderate number of swarms from Kenya and Ethiopia are likely to arrive from early July onwards in Kordofan, White Nile, Blue Nile and Sennar where they will rapidly mature and lay eggs in areas that receive rainfall. Some swarms may also reach Darfur. Hatching and band formation will occur from about late July onwards.

ERITREA

• SITUATION

During June, no surveys were undertaken but there were unconfirmed reports from scouts and locals of a few swarmlets from adjacent areas of northern Ethiopia that appeared at mid-month in the western lowlands, and the Southern and Anseba regions.

• FORECAST

Small swarms from adjacent areas of northern Ethiopia are expected to arrive in the south and in the western lowlands where they will rapidly mature and lay eggs in areas that receive rainfall. Hatching and band formation could commence by the end of July.

ETHIOPIA

• SITUATION

During June, numerous hopper bands were present in the Somali region between El Kere (0550N/4205E) and Degebur (0813N/4333E) in the Ogaden, and further north in the railway area from west of Dire Dawa (0935N/4150E) to Ayasha (1045N/4234E) that gave rise to numerous immature swarms, some of which moved north to Jijiga (0922N/4250E). Numerous hopper bands formed in the northern Rift Valley along the eastern edge of the highlands in Afar region between Gewana (1009N/4039E) and Korem (1230N/3931E). In the northern highlands, hopper bands were seen in a few places of Amhara region and, in Tigray region, immature adult groups were reported near Mekele (1329N/3928E), a mature group was seen near Adigrat (1417N/3928E), and scattered maturing adults were present south of the Eritrea border. On the 28th, an immature swarm was reported on the northern shore of Lake Turkana in SNNPR, which may be the first sign of a northerly migration from adjacent areas of northwest Kenya. Control operations treated 75 219 ha of which 30 599 ha were by air.

• FORECAST

More swarms will form in currently infested areas. This will be supplemented by swarms from northwest Kenya arriving in the south and moving northwards to Somali, Afar, Amhara and Tigray regions. While some of these swarms may continue to Sudan and northern Somalia, other swarms will remain in areas of recent rainfall, mature and breed, which will give rise to hopper bands. There is a risk that some swarms from Yemen may arrive in Afar and northern Somali regions for summer breeding.

DJIBOUTI

• SITUATION

No surveys were undertaken, and no locusts were reported during June.

• FORECAST

A few groups and small swarms may appear at times from Yemen and transit through the country to Ethiopia and Somalia.

SOMALIA

• SITUATION

During June, more hopper groups and bands formed on the plateau in the northwest between Boroma (0956N/4313E) and Burao (0931N/4533E) and in the northeast near Garowe (0824N/4829E) and in Sanag areas, and in the central region of Galguduud between Galkayo

(0646N/4725E) and Dusa Mareb (0532N/4623E). While immature swarms formed near Hargeisa (0931N/4402E), Boroma, Garowe and Galkayo, of few which were maturing, there were no signs of an eastward movement of swarms across northern Somalia so far. Control operations using biopesticides treated 19 029 ha of which 9 354 ha were by air.

• FORECAST

Additional swarms from the south and from Yemen are likely to arrive in the north where they are expected to concentrate and move eastwards across the northern plateau. Mature swarms could lay in areas where conditions remain favourable, causing another generation of hatching and hopper bands.

KENYA

• SITUATION

During June, hopper bands continued to develop in the northwest counties of Turkana and Marsabit. In Turkana, most of the hopper bands fledged from the 9th to the 25th. As the month progressed, an increasing number of immature swarms formed in both counties. Control operations treated 30 830 ha of which 8 539 ha were by air.

• FORECAST

Swarm formation is expected to continue to about mid-July. While most of the swarms will migrate northwards, there remains a high probability that residual populations will persist in northern areas that remain green.

UGANDA

• SITUATION

No reports were received during June.

• FORECAST

A few swarms are likely to arrive from adjacent areas of Kenya in the northeast and continue northwards during July.

SOUTH SUDAN

• SITUATION

No reports were received during June.

• FORECAST

Immature swarms from northwest Kenya are likely to arrive in Eastern Equatoria and continue northwards to Sudan during July, mainly to the east of the Nile River.

EGYPT

• SITUATION

During June, no locusts were seen during surveys on the Red Sea coast and subcoastal areas between the Sudan border and El Sheikh El Shazly (2412N/3438E), and near Lake Nasser and Abu Simbel (2219N/3138E).

• FORECAST

No significant developments are likely.

SAUDI ARABIA

• SITUATION

During June, a few immature swarms were seen in the north between Al Jawf (2948N/3952E) and the Iraq border and immature groups were present north of Hail (2731N/4141E). Breeding occurred in the southwest near Najran (1729N/4408E), giving rise to hopper bands and immature adult groups. Groups of mature adults were seen laying near Wadi Dawasir (2028N/4747E) during the first half of June. A few mature swarms were seen in the Asir Mountains near Khamis Mushait (1819N/4245E) during the first and last weeks of the month. Ground teams treated 5 360 ha.

• FORECAST

Limited hatching may occur near Wadi Dawasir. Breeding is likely to occur in areas of recent rainfall on the Red Sea coast between Qunfidah and Jizan where hopper groups and bands could form.

YEMEN

• SITUATION

During June, breeding occurred in the interior and hopper bands formed along the western edge of Ramlat Sabatyn between Al Hazm (1610N/4446E) and Bayhan (1452N/4545E), and in Wadi Hadhramaut and on the plateau north of Sayun (1559N/4844E). Numerous immature and mature swarms formed in these areas, some of which appeared in the highlands between Sana'a (1521N/4412E) and Taiz (1335N/4401E) while others moved north to adjacent areas of Saudi Arabia. A few swarms were seen in the foothills near the Red Sea and Gulf of Aden coastal plains. Immature and mature solitarious and gregarious adults, including some groups, were present on the southern coast near Aden (1250N/4503E), in the interior near Shabwah (1522N/4700E), and on the eastern plateau between Remah (1727N/5034E) and the Oman border. Ground teams treated 343 ha.

• FORECAST

Swarms are likely to move within the interior and the highlands. Breeding will continue in the interior between Bayhan and Shabwah and on the southern coast near Aden and Al Ghaydah. Breeding is also likely to occur on the Red Sea coast. This will cause more hopper bands and swarms to form in all areas.

OMAN

• SITUATION

During June, locusts declined further in the north where mainly scattered immature and mature solitarious adults remained, including a few hoppers near Nizwa (2255N/5731E). A few groups of hoppers and immature adults were present in the northeast near Ras Al Hadd (2232N/5948E) during the first week; thereafter, the adult groups are thought to have moved south along the coast or migrated across the Arabian Sea. Immature adult groups and swarms, most likely supplemented by the May

breeding along the UAE border, were seen moving south along the eastern coast to Salalah (1700N/5405E) where they matured at mid-month and laid eggs at the base of the Dhofar Hills. Hatching occurred on the coast south of Salalah from earlier breeding, causing a few early instar hopper groups to form by the end of the month. Ground teams treated 126 ha.

• FORECAST

More hopper groups and perhaps a few bands are expected to form along the Salalah coastal plains that could give rise to small groups of adults. There is a moderate risk that immature swarms migrating from the Horn of Africa to Indo-Pakistan may appear briefly along the eastern coast.

UAE

• SITUATION

On 1–3 June, groups of immature adults were present near Abu Dhabi (2427N/5421E) and further south in Liwa Oasis (2308N/5348E) near the Saudi Arabia border. Ground teams treated 198 ha.

• FORECAST

No significant developments are likely.

JORDAN

• SITUATION

On 9 June, an immature adult group was seen about 70 km west of the Iraq border near Ruwished (3231N/3812E) that came from breeding in Iraq.

• FORECAST

No significant developments are likely.

BAHRAIN, D.R. CONGO, IRAQ, ISRAEL, KUWAIT, LEBANON, PALESTINE, QATAR, SYRIA, TANZANIA, AND TURKEY

• FORECAST

No significant developments are likely.

EASTERN REGION

IRAN

• SITUATION

During June, locust numbers declined in the south due to control operations, drying conditions and migration. Immature adult groups and swarms were present in Bushehr, Hormozgan southern Fars and Kerman, and Sistan-Baluchistan during the first week. Thereafter, no further infestations were seen in the southwest as adults migrated eastwards to the southeast where groups and swarms gradually declined during the remainder of the month. By the last week, groups of hoppers and adults and a few hopper bands remained near the Pakistan and Afghanistan borders from Saravan (2721N/6220E) in Sistan-Baluchistan to northeast of Sarbisheh (3235N/5948E) in South Khorasan. Ground teams treated 67 689 ha.

• FORECAST

A limited number of small swarms will form early in the forecast period in Sistan-Baluchistan and South Khorasan and move to the Indo-Pakistan summer breeding areas. The situation should become calm by the end of July and no significant developments are likely.

PAKISTAN

• SITUATION

During June, spring breeding ended in Baluchistan and only immature and mature groups of adults remained near the coast and in interior areas between Pasni and Dalbandin. Immature swarms were seen near Khuzdar and Quetta. Breeding also declined in the Indus Valley of Sindh and further north on the Punjab Plains where only a few hopper bands remained. More hopper bands formed in Khyber Pakhtunkhwa north of Dera Ismail Khan (3150N/7055E) where swarms started to form at the end of the month. Spring-bred immature adult groups and swarms moved Baluchistan and the Indus Valley to the Indo-Pakistan border where an increasing number of immature adult groups and swarms arrived in Tharparkar, Nara and Cholistan deserts, many of which continued to India due to dry conditions. On the 19–20th, a few mature adult groups and swarms were seen laying eggs in Tharparkar near Nagarparkar (2421N/7045E) and the India border in the extreme southeast of Sindh. Control operations treated 47 198 ha of which 400 ha were by air.

• FORECAST

Adult groups and swarms will form in Khyber Pakhtunkhwa and move to Cholistan while the last spring-bred groups and swarms from Baluchistan will move to Nara and Tharparkar. As monsoon rains commence, breeding will increase along the Indo-Pakistan border between Bahawalpur and Nagarparkar, causing numerous hopper bands to form. This is expected to be supplemented by other swarms arriving from the Horn of Africa in about mid-July and thereafter.

INDIA

• SITUATION

During June, waves of immature swarms from spring breeding areas in Pakistan and Iran continued to arrive in Rajasthan. As conditions were dry, some immature groups and swarms moved further east to Madhya Pradesh, Chhattisgarh, Uttar Pradesh, and Bihar. The locusts generally oscillated in an east-west direction while a few small swarms surged northwards during strong southerly winds on the 26–27th in Uttar Pradesh north of Varanasi (2519N/8300E). A swarm also overflowed New Delhi on the 27th. Nevertheless, a substantial number of swarms remained in Rajasthan and northern Gujarat where they were maturing. Early egg-laying occurred, and hatching started at mid-month, giving rise to first and second instar hopper groups south of Bikaner (2801N/7322E) and along the Pakistan border southwest of Barmer (2543N/7125E),

and a hopper band west of Jodhpur (2618N/7308E). Ground and drone operations treated 72 109 ha.

• FORECAST

The last remaining spring-bred swarms from the region will arrive in Rajasthan during July as well as any locusts that are in Haryana, Madhya Pradesh, Uttar Pradesh, and Chhattisgarh. This is expected to be supplemented by other swarms arriving from the Horn of Africa in about mid-July and thereafter. As the monsoon rains commence, adults will mature rapidly and lay eggs throughout Rajasthan and northern Gujarat, giving rise to an increasing number of hopper groups and bands that will start to fledge in late July.

NEPAL

• SITUATION

On 26 June, small groups of immature adults arrived in Bhairahawa (2730N/8327E) near the Indian border from adjacent areas of Uttar Pradesh during strong southerly winds. Over the next few days, the groups spread to districts in the central lowlands from Dang to Mahottari. Some groups reached the base of the Himalayan foothills near Butwal (2741N/8329E) on the 27th and Kathmandu (2745N/8520E) on the 30th and were seen in several other foothill districts. No significant crop damage was reported.

• FORECAST

A few adult groups are likely to move westwards along the plains and perhaps into the hills where they should disperse without issue.

AFGHANISTAN

• SITUATION

During June, breeding occurred in central and southern districts of Helmand province where control operations treated mid-instar hoppers in the first week. In Kandahar province, adults were reported flying and laying eggs during the second week and small maturing adult groups were seen near Spin Boldak (3100N/6624E) and the Pakistan border on the 26th, and in several other areas. Control operations treated 2 645 ha.

• FORECAST

Any small groups that form in recent areas of breeding will migrate to the Indo-Pakistan border areas. They could be supplemented by a few adult groups and perhaps small swarms that will transit through the south to Pakistan.



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, 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.

Locust Hub

FAO in partnership with ESRI has developed a centralized hub for Desert Locust data and the latest progress on the emergency response to the Desert Locust upsurge (<https://locust-hub-hqfao.hub.arcgis.com>).

Calendar

No activities are currently scheduled.



Glossary of terms

The following special terms are used in the Desert Locust Bulletin when reporting locusts:

Non-gregarious adults and hoppers

Isolated (few)

- very few present and no mutual reaction occurring
- 0–1 adult/400 m foot transect (or less than 25/ha)

Scattered (some, low numbers)

- enough present for mutual reaction to be possible but no ground or basking groups seen
- 1–20 adults/400 m foot transect (or 25–500/ha)

Group

- forming ground or basking groups
- 20+ adults/400 m foot transect (or 500+/ha)

Adult swarm and hopper band sizes

Very small

- swarm: less than 1 km²
- band: 1–25 m²

Small

- swarm: 1–10 km²
- band: 25–2,500 m²

Medium

- swarm: 10–100 km²
- band: 2,500 m² – 10 ha

Large

- swarm: 100–500 km²
- band: 10–50 ha

Very large

- swarm: 500+ km²
- band: 50+ ha

Rainfall

Light

- 1–20 mm

Moderate

- 21–50 mm

Heavy

- more than 50 mm

Summer rains and breeding areas

- July–September/October
- Sahel of West Africa, Sudan, western Eritrea; Indo-Pakistan border

Winter rains and breeding areas

- October–January/February
- Red Sea and Gulf of Aden coasts; northwest Mauritania, Western Sahara

Spring rains and breeding areas

- February–June/July
- Northwest Africa, Arabian Peninsula interior, Somali plateau, Iran/Pakistan border

Other reporting terms

Breeding

- The process of reproduction from copulation to fledging

Recession

- Period without widespread and heavy infestations by swarms

Remission

- Period of deep recession marked by the complete absence of gregarious populations

Outbreak

- A marked increase in locust numbers due to concentration, multiplication and gregarisation which, unless checked, can lead to the formation of hopper bands and swarms

Upsurge

- A period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to- gregarious breeding in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions

Plague

- A period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously

Decline

- A period characterised by breeding failure and/or successful control leading to the dissociation of swarming populations and the onset of recessions; can be regional or major

Warning levels

Green

- *Calm.* 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>

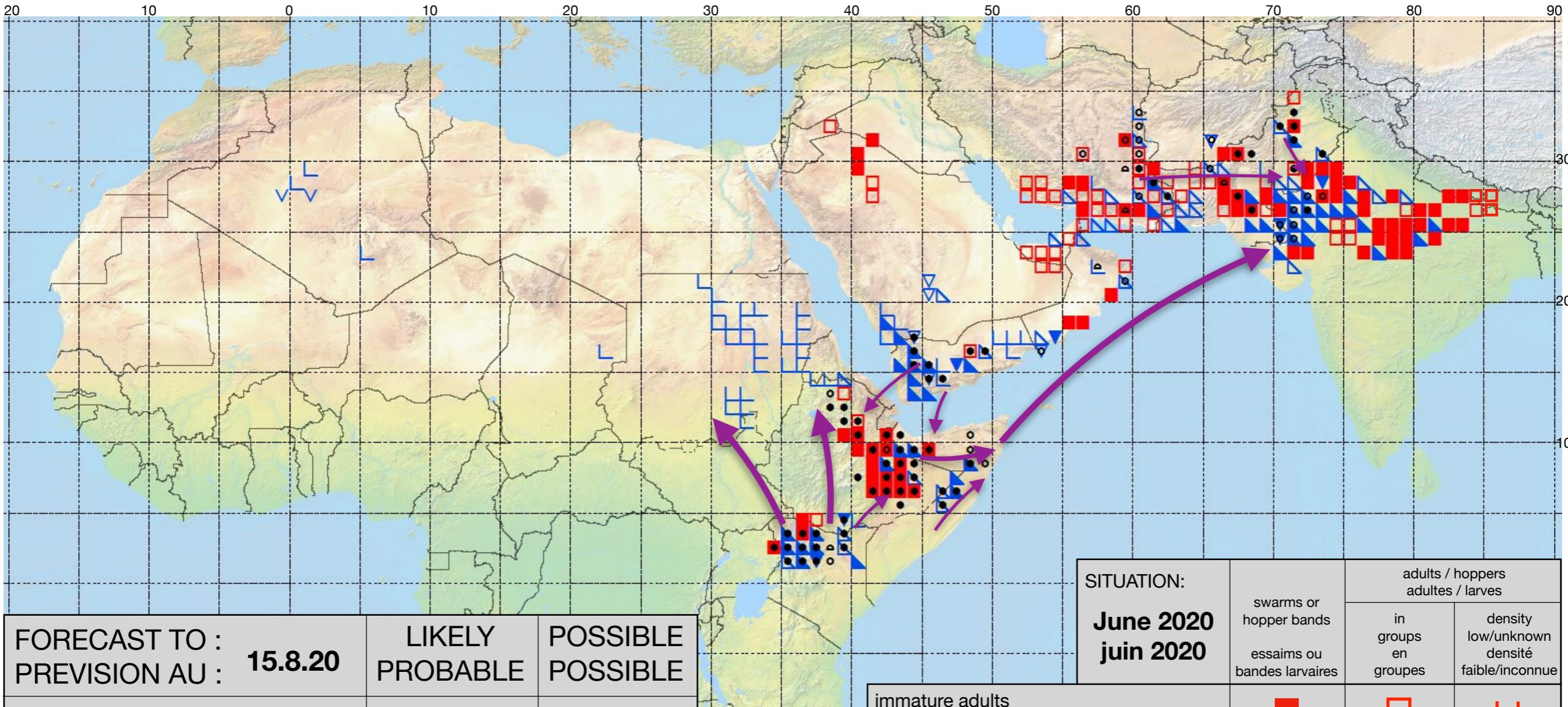
FAOLocust Slideshare. Locust presentations and photos
<http://www.slideshare.net/faolocust>


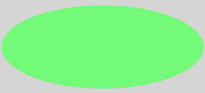

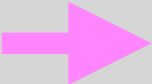



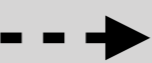
eLERT. Online database of resources and technical specifications for locust emergencies
<http://sites.google.com/site/elertsite>





















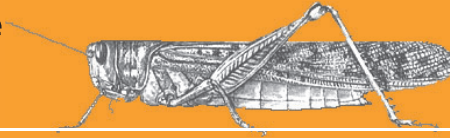
Desert Locust Summary

Criquet pèlerin – Situation résumée



FORECAST TO : PREVISION AU :	15.8.20	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favorables à la reproduction			
major swarm(s) essaim(s) important(s)			
minor swarms(s) essaim(s) limité(s)			
non swarming adults adults non essaimant			

SITUATION: June 2020 juin 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)			



Desert Locust Bulletin

General situation during July 2020
Forecast until mid-September 2020

WESTERN REGION: CALM

SITUATION. Isolated adults in **Mauritania, Niger, Chad,** and **Algeria.**

FORECAST. Small-scale breeding in the northern Sahel from **Mauritania to Chad.**

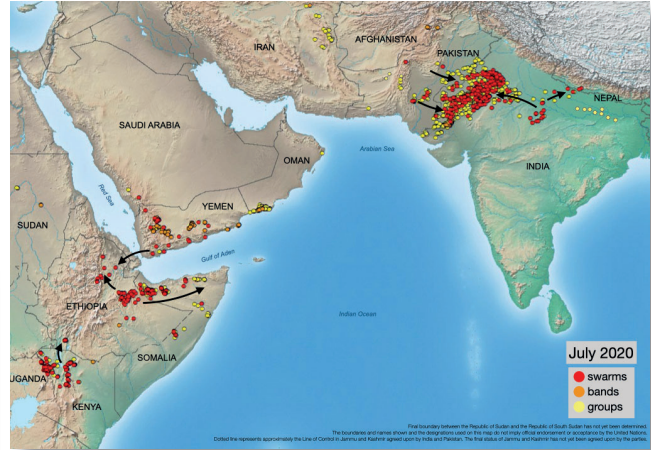
CENTRAL REGION: THREAT

SITUATION. Swarms decline after mid-July in northwest **Kenya** (12 080 ha treated), some move north to **Ethiopia** (44 883 ha) where swarms persist in north and east; hopper bands and swarms in northern **Somalia** (12 569 ha), some swarms move east. Few swarms in northeast **Uganda** (3 080 ha). Hopper bands and swarms in the interior and south coast of **Yemen** (10 718 ha); hopper bands on south coast of **Oman** (443 ha); adults and a mature adult group and swarm in southwest **Saudi Arabia** (440 ha). Scattered adults in **Sudan** (235 ha). **FORECAST.** Few residual swarms likely to remain in northwest **Kenya** but some may migrate to Ethiopia and Sudan via **South Sudan** in August. Swarm breeding will cause hopper bands to form in northern and eastern **Ethiopia**, coastal and interior **Yemen**, and perhaps northern **Somalia**. Widespread local breeding in **Sudan**. Other swarms likely to arrive in northeast Ethiopia from Yemen and a few swarms may arrive in **Eritrea** and breed.

EASTERN REGION: THREAT

SITUATION. Situation calms down in **Iran** (1 450 ha treated). Swarm breeding along Indo-Pakistan border with hatching and band formation in **Pakistan** (33 599 ha) and **India** (102 645 ha); swarms in northern states returned to Rajasthan, and one swarm reached **Nepal**. Limited breeding in eastern **Afghanistan** (304 ha).

FORECAST. Substantial increase in locust numbers in **India** and **Pakistan** during August with more hatching and band formation; a second generation of egg-laying to start from early September onwards.



Focus shifts to summer breeding areas

Second-generation spring swarms declined in northwest Kenya by mid-July. A few swarms crossed into northeast Uganda while other swarms migrated northwards to Ethiopia to join existing swarms, some of which moved into the northern Ethiopian highlands and northwest Somalia where hopper bands and swarms were already present. Some of the swarms that continued east across northern Somalia could still reach India and Pakistan in early August. Two swarms from Yemen invaded northeast Ethiopia. A few swarms may appear in Sudan and Eritrea where conditions became favourable for summer breeding. Unusually heavy rains fell again in Yemen where hopper bands and swarms continued to form, which is likely to continue. Widespread breeding is also expected in northern and eastern Ethiopia. Consequently, Ethiopia and Yemen are likely to be the epicentre of summer infestations. In southwest Asia, the situation has nearly returned to normal in Iran but remains serious along the Indo-Pakistan border where monsoon breeding commenced by spring-bred swarms, including those returning from northern India, and substantial hatching and band formation are expected in August. A second generation of summer breeding will start in September. At least one swarm reached Nepal and dispersed. Control operations were in progress in all affected countries. Although the threat to West Africa has nearly subsided for now, summer breeding will cause locust numbers to increase between Mauritania and Chad.

The FAO Desert Locust Bulletin is issued every month by the Desert Locust Information Service (DLIS) at FAO HQ in Rome, Italy. DLIS continuously monitors the global Desert Locust situation, weather and ecology to provide early warning based on survey and control results from affected countries, combined with remote sensing, historical data and models. The bulletin is supplemented by Alerts and Updates during periods of increased Desert Locust activity.

Telephone: +39 06 570 52420 (7 days/week, 24 hr)

E-mail: eclo@fao.org / faodlislocust@gmail.com

Internet: www.fao.org/ag/locusts

Facebook/Twitter: [faolocust](https://www.facebook.com/faolocust)



Weather & Ecological Conditions in July 2020

Good rains fell in the summer breeding areas of the Sahel in West Africa and Sudan, in Ethiopia and Yemen, and along both sides of the Indo-Pakistan border, giving rise to favourable breeding conditions.

WESTERN REGION

The Inter-Tropical Convergence Zone (ITCZ) continued its seasonal movement northwards over the Sahel of West Africa during July. At the end of the second decade, it had reached central Tagant (Mauritania), Kidal (Mali), Tazerzait Plateau in northern Tamesna (Niger), and Faya and Fada (Chad), which was some 75–150 km further north than usual in Niger and Chad and up to 50 km further south in Mauritania and Niger. Consequently, good rains fell in nearly all summer breeding areas, causing ecological conditions to become favourable for breeding. In Mauritania, light to moderate rains fell in Assaba and the two Hodhs during the first decade followed by heavier and more widespread rains in the second decade, extending to Brakna and southern Tagant as well as north of Oualata to the El Mreyye sand sea. Annual vegetation became green by mid-month from Kiffa to Nema. In Mali, moderate rains fell during the second decade south of Araouane, Ti-n-kar, Kidal, and in parts of Tamesna while lighter rains fell in the Adrar des Iforas. Annual vegetation was becoming green at mid-month in parts of the Adrar des Iforas and Tamesna. In Niger, light to moderate rains fell during the first decade between Tahoua and Tanout and south of Tasker where annual vegetation became green at mid-month. This was followed by heavier and more widespread rains in the second decade, extending east across the central pasture areas to Ngourti and north to the Air Mountains and the southern Tamesna Plains while lighter rains fell as far north as In Abangharit. In Chad, light to moderate rains fell in central areas during the first decade, followed by heavier and more widespread rains in the second decade, extending to Kalait in the northeast. Annual vegetation became green by mid-month as far north as Kalait. Accordingly, ecological conditions were favourable for breeding by the end of the month in most areas of the Sahel. In Northwest Africa, conditions were dry except near irrigated agricultural perimeters in parts of the central Sahara in Algeria and in the extreme south near In Guezzam and the Niger border.

CENTRAL REGION

The Inter-Tropical Convergence Zone (ITCZ) continued its seasonal movement northwards over the summer breeding areas of Sudan, reaching the northern border of North Kordofan and Shendi in the Nile Valley by the end of the second decade, which is up 100 km further north than usual for this time of year. Consequently, moderate rains

fell during the first decade as far north as El Fasher in North Darfur and Sodiri in North Kordofan and eastwards to south of Kassala and to the western lowlands in Eritrea south of Teseney. As a result, annual vegetation became green south of El Fasher and Sodiri by mid-month, and conditions were favourable for breeding. In Ethiopia, moderate rains fell during both decades in the Harar Highlands and throughout the highlands of Amhara and Tigray while lighter showers fell in the northern Rift Valley from the border of northwest Somalia to south of the Danakil Depression in Afar, extending to parts of Djibouti and northwest Somalia. Accordingly, ecological conditions remained favourable for breeding in Amhara, Tigray, and Afar but was drying out in Somali region as well as in northern and central Somalia. In Kenya, vegetation remained mostly green in the northwest despite very little rain during July. In Yemen, widespread light to moderate rains fell throughout the month in coastal and interior areas. At times, heavier rains occurred, causing flooding in Al Jawf, Marib, Shabwah, Hadhramaut, and Lahij provinces. Ecological conditions remained favourable for continued breeding in all areas. In Oman, light to moderate rains fell at times in the central interior and the eastern coast, including monsoon showers near Salalah and the Dhofar Hills.

EASTERN REGION

Monsoon rains reached the western edge of the summer breeding areas along both sides of the Indo-Pakistan border by 26 June, which is nearly two week earlier than normal. So far, rainfall has varied from below-normal to normal in Rajasthan where above-normal pre-monsoon rains fell in June. During July, light to moderate rains fell in most areas while heavier rains fell during the first decade in Rajasthan from Churu and Bikaner to Jaisalmer and the Pakistan border. This caused ecological conditions to become favourable for breeding within a widespread area on both sides of the border in Rajasthan and northern Gujarat in India and in Tharparkar, Nara and Cholistan deserts in Pakistan.



Area Treated

Control operations treated	222 446 ha in July compared to some 331 126 ha in June.
Afghanistan	304 ha
Ethiopia	79 574 ha (June, revised)
	44 883 ha
India	102 645 ha
Iran	1 450 ha
Kenya	38 769 ha (June, revised)
	12 080 ha
Oman	443 ha

Pakistan	33 599 ha
Saudi Arabia	440 ha
Somalia	12 569 ha
Sudan	235 ha
Uganda	3 080 ha
Yemen	10 718 ha



Desert Locust Situation and Forecast

WESTERN REGION

MAURITANIA

• SITUATION

During July, isolated mature solitary adults, mixed with a few immature adults, were present in the south near Kiffa (1638N/1124W) in Assaba, near Nema (1636N/0715W) in Hodh Ech Chargui, and east of Tidjikja (1833N/1126W) in Tagant.

• FORECAST

Small-scale breeding will commence in areas of recent rainfall in the south where normal to above-normal rains are predicted during the first half of August in central and eastern areas. Consequently, locust numbers will increase slightly but remain below threatening levels.

MALI

• SITUATION

No locusts were reported during July.

• FORECAST

Small-scale breeding will commence in areas of recent rainfall in Tamesna, the Adrar des Iforas, Tilemsi Valley, and Timetrine where above-normal rains are predicted during the first half of August. Consequently, locust numbers will increase slightly but remain below threatening levels.

NIGER

• SITUATION

During July, isolated immature and mature solitary adults were present in central pasture areas near Tasker (1507N/104140E) and south of Agadez (1658N/0759E) as well as in the Air Mountains to the south and east of Timia (1809N/0846E).

• FORECAST

Small-scale breeding will commence in areas of recent rainfall in the central pasture areas and on the Tamesna Plains where above-normal rains are predicted during the first half of August. Consequently, locust numbers will increase slightly but remain below threatening levels.

CHAD

• SITUATION

During July, isolated immature and mature solitary adults were seen in the northeast near Kalait (1550N/2054E) and

south of Amdjarass (1604N/2250E) from the 9th onwards, and in the west near Mao (1406N/1511E) and Nokou (1435N/1446E) after mid-month. Isolated breeding occurred south of Amdjarass where late instar solitary hoppers were present during the second week.

• FORECAST

Small-scale breeding will commence in areas of recent rainfall in western, central, and eastern areas, where above-normal rains are predicted during the first half of August. Consequently, locust numbers will increase slightly but remain below threatening levels.

SENEGAL

• SITUATION

No reports were received during July.

• 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 July, scattered immature solitary adults were seen in the northern Sahara to the south of Al Baydha (1405N/4542E) and in the central Sahara near the Adrar Valley (2753N/0017W). No locusts were seen in the southeast near Djanet, in the south near Tamanrasset (2250N/0528E), along the Mali border near Bordj Badji Mokhtar (2119N/0057E), and along the Niger border near Guezzam (1934N/0546E).

• FORECAST

Low numbers of adults are likely to persist near cropping areas in the central Sahara.

MOROCCO

• SITUATION

No locusts were reported during July.

• FORECAST

No significant developments are likely.

LIBYA

• SITUATION

No reports were received during July.

• FORECAST

No significant developments are likely.

TUNISIA

• SITUATION

No locusts were reported during July.

• FORECAST

No significant developments are likely.

CENTRAL REGION

SUDAN

• SITUATION

During July, mostly scattered immature solitary adults were present in the Nile Valley from Shendi to north of Dongola while mature solitary adults were present in North Kordofan, White Nile, Khartoum, and Kassala States as well as on the western side of the Red Sea Hills. Limited breeding occurred along the Nile and Atbara rivers where groups of hoppers, immature and mature adults were present near Merowe and hopper bands and immature adult groups were reported near Atbara. Ground teams treated 235 ha.

• FORECAST

Small-scale breeding will occur in parts of West and North Darfur, West and North Kordofan, White Nile and Kassala states where above-normal rains are predicted during the first week of August. There remains a moderate risk that a few swarms from Kenya and Ethiopia may arrive during August in Kordofan, White Nile, Blue Nile and Sennar where they will rapidly mature and lay eggs, giving rise to hopper bands.

ERITREA

• SITUATION

A late report indicated that no locusts were seen during a survey in the western lowlands at the end of June. On 30–31 July, no locusts were seen in the western lowlands near the Ethiopia border.

• FORECAST

Local breeding is expected to occur in areas of recent rainfall in southern areas of the western lowlands where above-normal rains are predicted during the first week of August. This could be supplemented by any swarms that arrive from northern Ethiopia and lay eggs during August, which would give rise hopper groups and bands.

ETHIOPIA

• SITUATION

During the first half of July, immature swarms appeared in the southwest of SNNPR to the west of Teltele (0504N/3723E), most likely coming from adjacent areas of northwest Kenya. Immature swarms were also reported at times during the month in the Ogaden west of Kebri Dehar (0644N/4416E), in the Harar Highlands, near Dire Dawa (0935N/4150E), and Jijiga (0922N/4250E), in the Awash Valley, and in the northern highlands south of Dese (1108N/3938E) in Amhara and northeast of Korem (1230N/3931E) in Tigray. Swarm numbers appeared to decline after mid-month. Nevertheless, a swarm arrived in the southern Rift Valley west of Teltele (0504N/3723E) from northwest Kenya on the 25th, several swarms moved from the Harar Highlands and districts in east Oromiya and Somali to northwest Somalia, swarms moved from Afar to Amhara, and two swarms from Yemen arrived in Afar

near Semera (1147N/4100E) on the 29th and 30th. Control operations treated 44 883 ha of which 44 763 ha were by air.

• FORECAST

A few remaining swarms from northwest Kenya could arrive in the south and move northwards to Somali, Afar, Amhara and Tigray regions. Breeding is expected to occur in the northern highlands (Amhara, Tigray), the northern Rift Valley (Afar), and in the northern Somali region near Dire Dawa and Jijiga, which will give rise to hopper bands. Breeding may also extend to the Ogaden where above-normal rains are predicted during August.

DJIBOUTI

• SITUATION

No surveys were undertaken, and no locusts were reported during July.

• FORECAST

A few groups and small swarms may appear at times from Yemen and transit through the country to Ethiopia and Somalia.

SOMALIA

• SITUATION

During the first half of July, mid to later instar hopper bands were present on the northern plateau near Burao (0931N/4533E) while hopper groups were seen further east near Garowe (0824N/4829E) and towards the southeast, and a mature adult group and swarm were reported near Garowe. Numerous immature adult groups and swarms were seen on the plateau near Hargeisa (0931N/4402E) and Burao, extending east to Erigavo (1040N/4720E). By mid-month, some of the adult groups had matured and were seen laying east of Erigavo. Thereafter, immature swarms prevailed in the northwest near Hargeisa and at least one swarm had matured north of Boroma (0956N/4313E). In the central region of Galguduud, mature swarms were reported near Dusa Mareb (0532N/4623E) and scattered immature and mature adults were seen nearby. Control operations using biopesticides treated 12 569 ha of which 8 544 ha were by air.

• FORECAST

Additional swarms may concentrate on the northern plateau where most of them are likely to remain immature. However, adults may mature and breed as above-normal rains are predicted in the entire north up to mid-August and thereafter only in the northwest.

KENYA

• SITUATION

During July, immature swarms continued to be present in the northwest counties of Turkana and Marsabit with a few reports of swarm maturation. From mid-month onwards, swarms appeared to decline in Marsabit while a few swarms were seen in Samburu county and most of the remaining

swarms present in Turkana concentrated near the Uganda border. Control operations treated 12 080 ha of which 11 667 ha were by air.

• FORECAST

A few swarms may persist in early August; thereafter, only remnants of previous swarms are likely to persist in the northwest where they could eventually mature and perhaps breed as above-normal rains are predicted during the forecast period.

UGANDA

• SITUATION

During July, a few immature swarms from adjacent areas of northwest Kenya appeared to the north of Moroto (0231N/3439E) in the northeast (Karamoja) on the 1st, 6th, 12th and 22nd. Control operations treated 3 080 ha by air.

• FORECAST

A few swarms may arrive at times in Karamoja from adjacent areas of Kenya during August.

SOUTH SUDAN

• SITUATION

No reports were received during July.

• FORECAST

Several immature swarms from northwest Kenya are expected to arrive in early August near Kapoeta and in other areas of Eastern Equatoria where they will continue northwards to Sudan.

EGYPT

• SITUATION

During July, no locusts were seen on the Red Sea coast and subcoastal areas in the southeast between Berenice (2359N/3524E) and Abu Ramad (2224N/3624E), and near Lake Nasser between Abu Simbel (2219N/3138E) and Tushka (2247N/3126E).

• FORECAST

No significant developments are likely.

SAUDI ARABIA

• SITUATION

During July, scattered mature solitarious adults were present in the southwest near Najran (1729N/4408E) and in the Asir Mountains to the north and south of Khamis Mushait (1819N/4245E). A mature adult group was seen in the Asir Mountains north of Khamis Mushait on the 1st and a mature swarm was seen to the southeast on the 6th. Ground teams treated 440 ha on 1–6 July.

• FORECAST

Breeding may occur in areas that receive rainfall on the Red Sea coast between Qunfidah and Jizan where hopper groups and bands could form.

YEMEN

• SITUATION

During July, breeding continued and numerous hopper groups and bands were present in the central highlands south of Sana'a (1521N/4412E), in the wadis leading down from the highlands to the western edge of Ramlat Sabatyn between Al Hazm (1610N/4446E) and Nisab (1430N/4629E), in Wadi Hadhramaut, on the plateau north of Mukalla (1431N/4908E), and along the eastern coast between Sayhut (1512N/5115E) and Al Ghaydah (1612N/5210E). Immature and mature adult groups and swarms were present in most of these areas as well as in the northern highlands near Sada'a (1656N/4345E), the southern highlands near Ad Dali (1341N/4443E), and on the southern coast near Aden (1250N/4503E), Mayfa'a (1416N/4735E), and Mukalla. Adult groups were laying in Wadi Hadhramaut and on the southern coast near Zinjibar (1306N/4523E). On the Red Sea coast, scattered immature and mature solitarious adults were present mainly in the north near Suq Abs (1600N/4312E). Ground teams treated 10 718 ha.

• FORECAST

More adult groups and swarms will form in the central highlands and interior. The swarms will move to areas of recent rainfall within the interior and breed, causing another generation of hopper bands to form. Breeding is also likely to occur on the Red Sea coast.

OMAN

• SITUATION

During July, hopper groups and bands continued to form in the south on the coast and in the Dhofar Hills near Salalah (1700N/5405E). Scattered mature solitarious adults were seen west of the Dhofar Hills in the interior between Thumrait (1736N/5401E) and the edge of the Empty Quarter. In the north, scattered immature solitarious adults were present near Nizwa (2255N/5731E) and Buraimi (2415N/5547E). Ground teams treated 443 ha.

• FORECAST

Any hopper infestations that escape detection or control could form a limited number of immature groups that could move inland. If a few small immature swarms form, they could move offshore towards Indo-Pakistan.

BAHRAIN, D.R. CONGO, IRAQ, ISRAEL, JORDAN, KUWAIT, LEBANON, PALESTINE, QATAR, SYRIA, TANZANIA, TURKEY, AND UAE

• FORECAST

No significant developments are likely.

EASTERN REGION

IRAN

• SITUATION

During July, locust numbers declined further, and only small groups of hoppers and immature adults remained in South

Khorasan near Birjand (3252N/5913E) and the Afghanistan border. A few of the adults were maturing. No locusts were seen elsewhere during surveys. Ground teams treated 1 450 ha.

• FORECAST

A few small remnant populations may persist in South Khorasan. No significant developments are likely.

PAKISTAN

• SITUATION

During July, immature adult groups and swarms moved from spring breeding areas to summer breeding areas in Cholistan and Tharparkar. Consequently, only low numbers of immature mature solitary adults and a few groups remained in Baluchistan near Panjgur (2658N/6406E), Turbat (2600N/6303E), and Khuzdar (2749N/6639E), and an immature swarm was seen near Quetta (3015N/6700E) on the 19th. Low numbers of locusts were also present in the Lasbela Valley (2614N/6619E). Numerous first-generation hopper groups and bands formed in Tharparkar near Nagarparkar (2421N/7045E) and the India border in the extreme southeast of Sindh from earlier laying. Control operations treated 33 599 ha of which 400 ha were by air.

• FORECAST

Locust numbers will increase primarily in Tharparkar but also in Nara and Cholistan. First-generation hatching will continue into early August, causing hopper bands to form until about mid-September while first-generation swarms are likely to start forming at the beginning of August. A second generation of egg-laying is expected from early September onwards as above-normal rains are predicted during August. The risk of swarms arriving from the Horn of Africa will decline by mid-August. Adults groups may form in the Lasbela area that could move to Tharparkar.

INDIA

• SITUATION

During July, immature groups and swarms prevailed in the northern states of Madhya Pradesh and Uttar Pradesh but then returned west with the onset of the monsoon to Rajasthan where they joined immature swarms that were already present. The swarms quickly matured and were seen copulating mainly between Jodhpur (2618N/7308E) and Churu (2818N/7458E). Hopper groups and bands were already forming in some parts of Rajasthan from earlier breeding. In Gujarat, groups of immature and mature adults were present south of the Pakistan border in the Rann of Kutch. Ground and drone operations treated 102 645 ha of which 420 ha were by air.

• FORECAST

Locust numbers will increase in Rajasthan and northern Gujarat. Substantial first-generation hatching will continue into early August, causing numerous hopper bands to form until about mid-September while first-generation swarms are likely to start forming at the beginning of August. A second

generation of egg-laying is expected from early September onwards as above-normal rains are predicted during August. The risk of swarms arriving from the Horn of Africa will decline by mid-August.

NEPAL

• SITUATION

On 12 July, one swarm appeared near Gadhwara (2749N/8236E) in Dang district from adjacent areas of Uttar Pradesh and subsequently moved northeast in the West Rapti River Valley. Locusts were again seen on the 16th. No significant crop damage was reported.

• FORECAST

No significant developments are likely.

AFGHANISTAN

• SITUATION

During July, breeding occurred in the eastern province of Paktia where third and fourth instar hopper bands and immature gregarious adults were seen on the 14th at a few places south of Gardez (3336N/6914E) and west of Khost (3320N/6956E). Control operations treated 304 ha.

• FORECAST

Isolated adults may persist near cropping areas in Paktia. 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, 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

No activities are currently scheduled.



Glossary of terms

The following special terms are used in the Desert Locust Bulletin when reporting locusts:

Non-gregarious adults and hoppers

Isolated (few)

- very few present and no mutual reaction occurring
- 0–1 adult/400 m foot transect (or less than 25/ha)

Scattered (some, low numbers)

- enough present for mutual reaction to be possible but no ground or basking groups seen
- 1–20 adults/400 m foot transect (or 25–500/ha)

Group

- forming ground or basking groups
- 20+ adults/400 m foot transect (or 500+/ha)

Adult swarm and hopper band sizes

Very small

- swarm: less than 1 km² • band: 1–25 m²

Small

- swarm: 1–10 km² • band: 25–2,500 m²

Medium

- swarm: 10–100 km² • band: 2,500 m² – 10 ha

Large

- swarm: 100–500 km² • band: 10–50 ha

Very large

- swarm: 500+ km² • band: 50+ ha

Rainfall

Light

- 1–20 mm

Moderate

- 21–50 mm

Heavy

- more than 50 mm

Summer rains and breeding areas

- July–September/October
- Sahel of West Africa, Sudan, western Eritrea; Indo-Pakistan border

Winter rains and breeding areas

- October–January/February
- Red Sea and Gulf of Aden coasts; northwest Mauritania, Western Sahara

Spring rains and breeding areas

- February–June/July
- Northwest Africa, Arabian Peninsula interior, Somali plateau, Iran/Pakistan border

Other reporting terms

Breeding

- The process of reproduction from copulation to fledging

Recession

- Period without widespread and heavy infestations by swarms

Remission

- Period of deep recession marked by the complete absence of gregarious populations

Outbreak

- A marked increase in locust numbers due to concentration, multiplication and gregarisation which, unless checked, can lead to the formation of hopper bands and swarms

Upsurge

- A period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to- gregarious breeding in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions

Plague

- A period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously

Decline

- A period characterised by breeding failure and/or successful control leading to the dissociation of swarming populations and the onset of recessions; can be regional or major

Warning levels

Green

- *Calm.* 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

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>

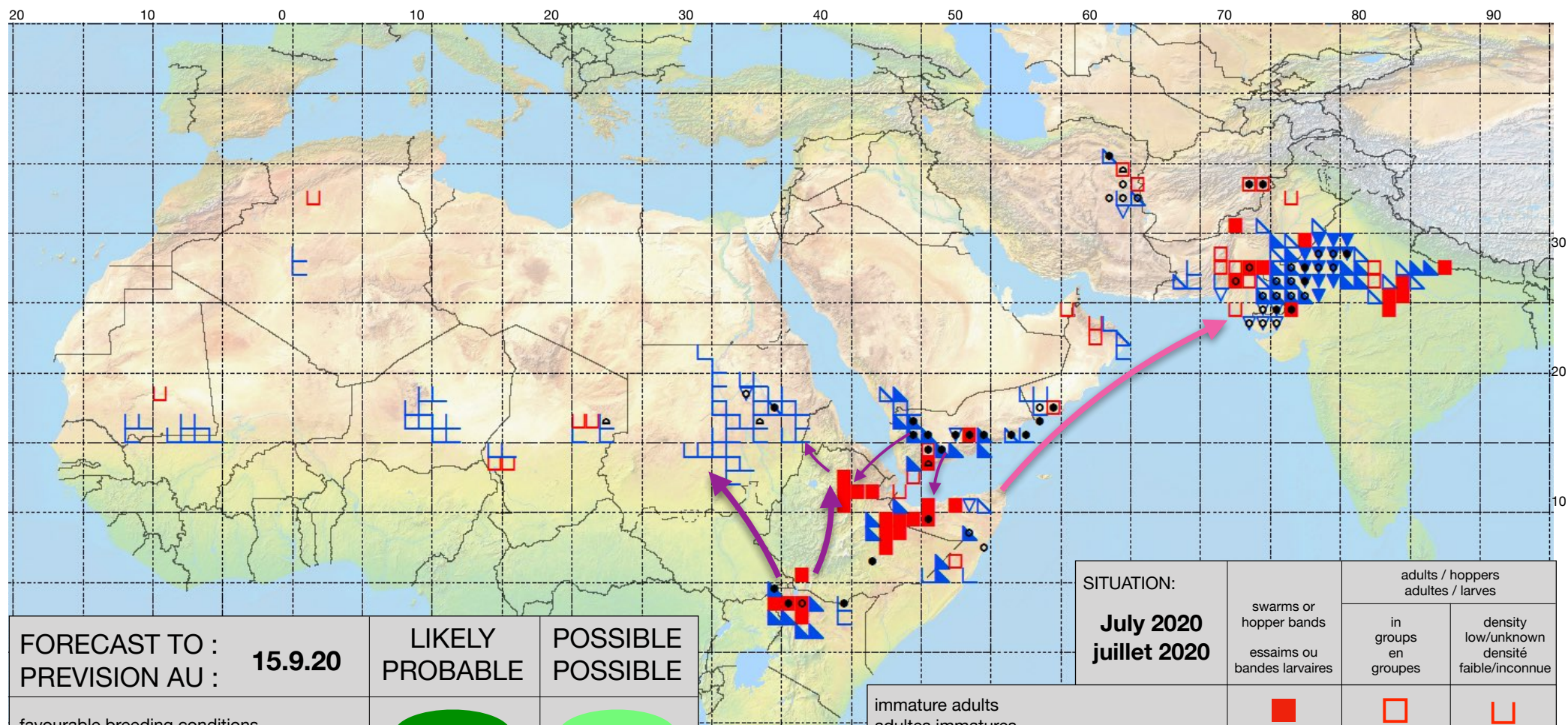
FAOLocust Slideshare. Locust presentations and photos
<http://www.slideshare.net/faolocust>









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





















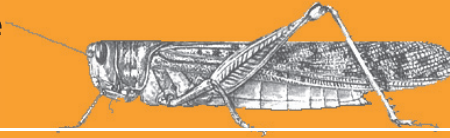
Desert Locust Summary

Criquet pèlerin – Situation résumée



FORECAST TO : PREVISION AU :	15.9.20	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favorables à la reproduction			
major swarm(s) essaim(s) important(s)			
minor swarms(s) essaim(s) limité(s)			
non swarming adults adults non essaimant			

SITUATION: July 2020 juillet 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)			



Desert Locust Bulletin

General situation during August 2020 Forecast until mid-October 2020

WESTERN REGION: CALM

SITUATION. Isolated adults in **Mauritania, Mali, Niger,** and breeding in **Chad.**

FORECAST. Small-scale breeding in the northern Sahel from **Mauritania to Chad.**

CENTRAL REGION: THREAT

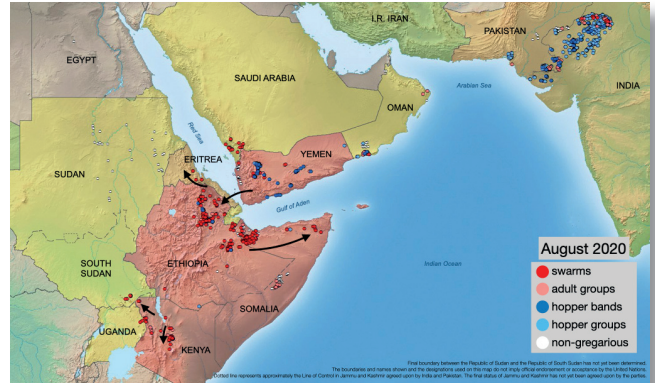
SITUATION. Few immature swarms persist in northwest **Kenya** (4 528 ha treated), a swarm crossed to northeast **Uganda** and southeast **South Sudan** (250 ha); swarms mature and lay eggs that hatch in northeast **Ethiopia** (54 703 ha) while immature swarms persist in the east, extending to northern **Somalia** (8 800 ha); mature swarms appear in **Eritrea** (1 310 ha) and hopper groups on southern Red Sea coast. Hopper bands and swarms in the interior and south coast of **Yemen** (5 909 ha), adults on the Red Sea coast; adult groups and immature swarm form on south coast of **Oman** (58 ha); several mature swarms in southwest **Saudi Arabia** (1 355 ha) and southern Red Sea coast. Scattered adults mature in **Sudan.**

FORECAST. Swarms will slowly mature and breed in northwest **Kenya**, eastern **Ethiopia** and northwest **Somalia** while breeding will continue in northern Ethiopia and **Yemen**, extending to Red Sea coast of **Eritrea**, Yemen and **Saudi Arabia**. Widespread, small-scale breeding in **Sudan** and western Eritrea. Some swarms may move south from Yemen and northern Somalia towards Kenya in October.

EASTERN REGION: THREAT

SITUATION. Intensive survey and control operations against summer-bred hopper groups and bands in Rajasthan, **India** (49 124 ha treated) and Tharparkar, **Pakistan** (26 381 ha) reduce locust infestations.

FORECAST. Hoppers will fledge and form adult groups and small swarms along the **Indo-Pakistan** border that will mature and lay eggs, causing a second but smaller generation of hopper bands in October.



Summer breeding in Ethiopia and Indo-Pakistan

Ground and aerial control operations continued against spring-bred swarms that persisted in the Horn of Africa during August. Summer breeding started in northern Ethiopia where an increasing number of hopper bands formed. Other swarms remained immature in eastern Ethiopia and northern Somalia that could spread south, if they do not mature, towards Kenya when the prevailing winds change in October. This could be supplemented by a few swarms from Yemen where control operations were undertaken in the interior against numerous hopper bands and swarms. Several mature swarms invaded Eritrea and southwest Saudi Arabia from Ethiopia and Yemen, respectively, where breeding and hopper band formation is likely. A few swarms moved from northwest Kenya to adjacent areas of Uganda and South Sudan. In southern Oman, adult groups and a swarm formed from local breeding on the coast. Locust infestations are expected to increase substantially in Ethiopia, Eritrea, Yemen and, to a lesser extent, on the Red Sea coast in Sudan and Saudi Arabia. In southwest Asia, extensive hatching and hopper band formation occurred in India and, on a smaller scale, in southeast Pakistan. Intensive control operations significantly reduced the infestations that will limit a second generation of breeding in September. The situation remained calm in the northern Sahel from Mauritania to western Eritrea where good rains fell much further north than usual but only small-scale breeding is expected because current locust numbers are very low.

The FAO Desert Locust Bulletin is issued every month by the Desert Locust Information Service (DLIS) at FAO HQ in Rome, Italy. DLIS continuously monitors the global Desert Locust situation, weather and ecology to provide early warning based on survey and control results from affected countries, combined with remote sensing, historical data and models. The bulletin is supplemented by Alerts and Updates during periods of increased Desert Locust activity.

Telephone: +39 06 570 52420 (7 days/week, 24 hr)
E-mail: ecllo@fao.org / faodlislocust@gmail.com

Internet: www.fao.org/ag/locusts
Facebook/Twitter: faolocust



Weather & Ecological Conditions in August 2020

Exceptional and widespread rains fell in early August throughout the summer breeding areas of from Mauritania to Eritrea, reaching much further north than usual and extending to the Red Sea coast. Good rains fell in Yemen and the Indo-Pakistan monsoon continued.

WESTERN REGION

The Inter-Tropical Convergence Zone (ITCZ) was present over the summer breeding areas in the northern Sahel between Mauritania and Chad throughout August. During the first and third decades, it moved some 300–400 km further north than usual over Mali, Niger, and Chad, reaching Tamanrasset in southern Algeria. As a result, moderate to heavy rains fell between the Adrar des Iforas in northern Mali to the Air Mountains in northern Niger as well as in northern Chad, including Tibesti and the Mourdi Depression. In northeast Mali, heavy rains fell at the end of the month on the western side of the Adrar des Iforas near Aguelhoc and in Timetrine. The exceptionally good rains caused annual vegetation to become green and breeding conditions to be favourable from Mali to Chad. In Mauritania, the ITCZ was further south than its normal position during the entire month. Nevertheless, light to moderate rains fell progressively the south, reaching as far north Tidjikja and conditions became favourable for breeding. Light to moderate rains also fell in the northwest during the first two decades.

CENTRAL REGION

The Inter-Tropical Convergence Zone (ITCZ) was present over the summer breeding areas in the interior of Sudan throughout August. During the first and third decades, it moved some 400 km further north than usual, especially in the first decade when it reached the Egyptian border. As a result, light to moderate rains fell much further north than in most years, extending in the first decade to the Libyan and Egyptian borders, and Selima Oasis while heavier rains fell in the Nubian Desert to the Red Sea Hills between the borders of Eritrea and Egypt. During the remainder of the month, good rains fell in North Darfur, North Kordofan, and Kassala states. In the winter breeding areas, widespread moderate to heavy rains fell along both sides of the central and southern Red Sea during the first decade of August from the Egypt border to Djibouti except for the central coast near Port Sudan, and from Bader, Saudi Arabia to Aden, Yemen. During the second decade, light to moderate showers fell on the northern Eritrea coast and on the Tihama of Yemen. Light to moderate rains fell at times in the interior of Yemen and northern Oman. In the Horn of Africa, moderate to heavy rains fell in Afar, Amhara, and

Tigray of northern Ethiopia, and moderate rains fell over the Harar Highlands and, at times, on the plateau of northwest Somalia. In the eastern Ogaden, annual vegetation became green along both sides of the Ethiopia-Somalia border. In northwest Kenya, very little rain fell while low temperatures and local winds inhibited locust migration towards the north.

EASTERN REGION

Monsoon rains continued to fall along both sides of the Indo-Pakistan throughout August. Rainfall was above average in West Rajasthan. Consequently, annual vegetation was green and ecological conditions were favourable for breeding throughout Rajasthan and northern Gujarat in India and in adjacent areas of Tharparkar, Nara, and Cholistan deserts in Pakistan. Conditions were also favourable in the Lasbela valley west of Karachi. On the 27th, extremely heavy rains and flooding occurred in Karachi where a record 345 mm were received in a single day, bringing the week's total to 760 mm.



Area Treated

Control operations treated 153 149 ha in August compared to some 225 254 ha in July.

Eritrea	1 310 ha
Ethiopia	54 703 ha
India	49 124 ha
Kenya	5 454 ha
Oman	58 ha
Pakistan	26 381 ha
Saud Arabia	1 355 ha
Somalia	15 377 ha (July, revised) 8 800 ha
South Sudan	250 ha
Uganda	(not reported)
Yemen	5 909 ha



Desert Locust Situation and Forecast

WESTERN REGION

MAURITANIA

• SITUATION

During August, isolated mature solitarious adults were present in the south to the northeast of Magta Lahjar (1730N/1305W) in Brakna, southern Tagant, northern Hodh El Gharbi east of Aioun El Atrous (1639N/0936W), and near Nema (1636N/0715W) and Oualata (1717N/0701W) in Hodh Ech Chargui.

• FORECAST

Small-scale breeding in the south will cause locust number to increase slightly but remain below threatening levels. If vegetation starts to dry out at the end of forecast period, locusts may concentrate and move towards the northwest.

MALI

• SITUATION

During August, scattered immature solitarious adults were present in the Adrar des Iforas near Aguelhoc (1927N/0052E). No locusts were seen near Tombouctou (1649N/0259W) and in the west to the southeast of Niore (1512N/0935W).

• FORECAST

Small-scale breeding is likely to be in progress and will continue in areas of recent rainfall in Tamesna, the Adrar des Iforas, Tilemsi Valley, and Timetrine. Consequently, locust numbers will increase slightly but remain below threatening levels.

NIGER

• SITUATION

During August, isolated immature and mature solitarious adults were present on the Tamesna Plains near In Abangharit (1754N/0559E) and along the western side of the Air Mountains between Agadez (1658N/0759E) and Arlit (1843N/0721E) as well as the eastern edge of the Air Mountains.

• FORECAST

Small-scale breeding is likely to be in progress and will continue in areas of recent rainfall in the central pasture areas and on the Tamesna Plains. Consequently, locust numbers will increase slightly but remain below threatening levels.

CHAD

• SITUATION

During August, isolated immature and mature solitarious adults were seen in central areas from south of Moussoro (1338N/1629E) to Djedaa (1331N/1834E). Small-scale hatching occurred in some places and solitarious hoppers of various instars were present. In the northeast, low numbers of mature solitarious adults were present and laying between Fada (1714N/2132E) and Amdjarass (1604N/2250E).

• FORECAST

Small-scale breeding will continue in areas of recent rainfall in western, central, and eastern areas, as well as perhaps further north than usual in Tibesti and Mourdi Depression. Consequently, locust numbers will increase slightly but remain below threatening levels.

SENEGAL

• 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.

ALGERIA

• SITUATION

During August, no locusts were seen in the central Sahara near the Adrar Valley (2753N/0017W), in the southeast near Djanet (2434N/0930E), in the south near Tamanrasset (2250N/0528E), along the Mali border near Bordj Badji Mokhtar (2119N/0057E), and along the Niger border near In Guezzam (1934N/0546E).

• FORECAST

Small-scale breeding may occur in areas of recent rainfall in the extreme south near the borders of Mali and Niger, causing locust numbers to increase slightly.

MOROCCO

• SITUATION

No locusts were reported during August.

• FORECAST

No significant developments are likely.

LIBYA

• SITUATION

No reports were received during August.

• FORECAST

No significant developments are likely.

TUNISIA

• SITUATION

No locusts were reported during August.

• FORECAST

No significant developments are likely.

CENTRAL REGION

SUDAN

• SITUATION

During August, low numbers of immature and mature solitarious adults were scattered in the summer breeding areas of North Kordofan and White Nile states, along the Nile Valley from Ed Damer (1734N/3358E) to Dongola (1910N/3027E), and on the western side of the Red Sea Hills from Kassala (1527N/3623E) to Sinkat (1855N/3648E). Unconfirmed reports of locusts on the Red Sea coast near Eritrea could not be confirmed due to inaccessibility because of flooding.

• FORECAST

Locust numbers will increase slightly as a result of small-scale, widespread breeding in West and North Darfur, West

and North Kordofan, White Nile and Kassala states as well as further north than usual in Northern State and on the western side of the Red Sea Hills, including the Nubian Desert. This may cause small groups to form if vegetation starts to dry out at the end of forecast period in the interior. Breeding may occur on the Red Sea coast and northeastern subcoastal areas in areas of recent rains and floods.

ERITREA

• SITUATION

During August, no locusts were seen during surveys in the western lowlands between Kerkebet (1604N/3725E) and the Ethiopia border. On the 19–24th, mature swarms were seen flying and laying on the Red Sea coast west of Massawa near Adi-Shuma (1536N/3905E) and south of the Ghelaelo Peninsula near Buya (1450N/3951E), and in the southern highlands near Adi Keyh (1451N/3922E). Other swarms were reported in the highlands to the south and west of Asmara (1519N/3856E), and as far north as nearly Nakfa (1640N/3828E). Breeding occurred on the southern coastal plains between Tio (1441N/4057E) and Assab (1301N/4247E) where hopper groups were reported. Ground teams treated 1 310 ha.

• FORECAST

Mature swarms from adjacent areas of northern Ethiopia are likely to appear in the highlands and the western and eastern lowlands. Breeding is more likely to occur in both lowlands where good rains fell in August, which could lead to substantial hatching and band formation, especially on the Red Sea coast. This could be further supplemented by additional swarms arriving from Yemen.

ETHIOPIA

• SITUATION

During August, mainly immature and a few mature swarms were present on the northeastern edge of the Rift Valley near Dire Dawa (0935N/4150E), Ayasha (1045N/4234E), and Jijiga (0922N/4250E), and in the Harar Highlands. Cross-border movements occurred near Ayasha and Jijiga. Numerous swarms were maturing and laid eggs on the northwestern edge of the Rift Valley in several districts of Afar region west of Semera (1148N/4100E) and along a 350 km stretch of the eastern escarpment in eastern Tigray and Amhara regions from south of Dese (1108N/3938E) to north of Mekele (1329N/3928E) that hatched after mid-month, giving rise to early instar hopper groups and bands. The swarms were supplemented by maturing and mature swarms that arrived from Yemen about mid-month. In the southern region of SNNPR, an immature swarm arrived from Kenya on the 7th. Control operations treated 54 703 ha of which 37 108 ha were by air.

• FORECAST

Widespread egg-laying and hatching in the northern highlands (Amhara, Tigray) and the northern Rift Valley (Afar) is expected to cause a substantial increase in hopper

bands that could give rise to new immature swarms from early October onwards. Swarms in the northern Somali region that do not mature are likely to spread southwards to the Ogaden and southern areas. This may be supplemented by additional swarms from northwest Somalia and Yemen.

DJIBOUTI

• SITUATION

During August, locals reported seeing swarms flying towards Ethiopia in the second week, and only a few scattered mature adults were seen on the ground. No crop damage was reported.

• FORECAST

A few groups and small swarms may appear at times from Yemen and transit through the country to Ethiopia and Somalia.

SOMALIA

• SITUATION

During August, immature swarms persisted on the northwest plateau between Hargeisa (0931N/4402E) and Boroma (0956N/4313E), extending down the escarpment to the coast near Bulhar (1023N/4425E). A few solitary adults and groups matured on the escarpment and northwest coast near Silil (1058N/4326E). In the northeast, several immature swarms were seen on the plateau northwest of Iskushuban (1017N/5014E) until the 12th, and an immature swarm was reported on the 29th near Erigavo (1040N/4720E). In the central region of Galguduud, immature and mature solitary adults were present between Dusa Mareb (0532N/4623E) and Galkayo (0646N/4725E). Control operations using biopesticides treated 8 800 ha of which 5 700 ha were by air.

• FORECAST

Limited breeding is likely to occur in areas of recent rain on the plateau between Boroma and Burao, giving rise to another generation of hopper bands. However, swarms that do not mature and breed are expected to move southwards from late September onwards to adjacent areas of eastern Ethiopia and beyond. This could be supplemented by additional swarms arriving from Yemen.

KENYA

• SITUATION

During August, low numbers of immature spring-bred swarms persisted in the northwest counties of Turkana and Marsabit while an increasing number of swarms were seen in Samburu county. The swarms were mainly small and mobile, moving with local winds in the Rift Valley and nearby areas as far north as the South Sudan border and west to the Uganda border. A few of the adults were starting to mature. Aerial control operations treated 5 454 ha.

• FORECAST

Any swarms that escape detection and control operations are likely to slowly mature, primarily in Turkana, Marsabit

and Samburu counties where they could eventually lay eggs towards the end of the forecast period in lowland areas of recent rains. This could be supplemented in late October by swarms arriving in the north from Ethiopia, northern Somalia, and Yemen.

UGANDA

• SITUATION

During August, a few immature swarms from adjacent areas of northwest Kenya appeared in the Moroto (0231N/3439E) area of the northeast (Karamoja) on the 12th, 19th and 22nd. The latter swarm contained a few mature adults and was reported to be 8 km long, which spread within Moroto, Amudati, Napak districts. Aerial control operations were undertaken but no details are available.

• FORECAST

A few swarms may continue to arrive at times in Karamoja from adjacent areas of Kenya. The swarms are likely to disperse without breeding.

SOUTH SUDAN

• SITUATION

During August, a large immature swarm from adjacent areas of northern Uganda and Kenya appeared on the 2nd in Budi and Kapoeta South districts of the southeast and reached Kapoeta (0446N/3335E). On 22 August, another swarm was seen near Kapoeta at Namornyang (0440N/3339E) that later moved back to Kenya. Several swarmlets were seen moving north and eastwards in the same area near Narekepai (0445N/3339E) in the following days. On the 31st, a swarm appeared in Budi district near Naguri (0425N/3312E). Ground teams treated 250 ha.

• FORECAST

A few swarms may continue to arrive at times in Eastern Eutoria from adjacent areas of Kenya. The swarms are likely to disperse without breeding.

EGYPT

• SITUATION

During August, isolated mature solitary adults were seen at one place in the Western Desert near Farafra oasis (2710N/2818E). No locusts were seen elsewhere in the Western Desert near Bahariya (2821N/2851E), Sh. Oweinat (2219N/2845E), Tushka (2247N/3126E), and Abu Simbel (2219N/3138E), and on the Red Sea coast between Abu Ramad (2224N/3624E) and Halaib (2213N/3638E).

• FORECAST

No significant developments are likely.

SAUDI ARABIA

• SITUATION

During the last week of August, several mature swarms were seen in the southwest just north of the Yemen border in the Asir Mountains west of Najran (1729N/4408E) and

on the Red Sea coast near Jizan (1656N/4233E). Ground teams treated 1 355 ha.

• FORECAST

Breeding is likely to occur in areas of recent rainfall on the Red Sea coast between Jeddah and Yemen, especially in southern areas near Jizan where heavy rains fell in early August.

YEMEN

• SITUATION

During August, mature adult groups and swarms continued laying in the interior and numerous hopper bands and a few immature adult groups and swarms were present on the edge of Ramlat Sabatyn mainly near Al Hazm (1610N/4446E) but also extending to Nisab (1430N/4629E), Al Abr (1608N/4714E), Sayun (1559N/4844E) and southwest of Hawra (1542N/4817E) in Wadi Hadhramaut, on the plateau north of Mukalla (1431N/4908E) in Wadi Haru, and in the central highlands south of Sana'a (1521N/4412E). Hopper groups were reported on the eastern plateau near Shehan (1746N/5229E) and the Oman border. A few immature adult groups and swarms were seen near Sana'a and Al Hazm. On the southern coast, hopper bands formed near Mayfa'a (1416N/4735E) and between Zinjibar (1306N/4523E) and Ahwar (1333N/4644E). On the northern Red Sea coast, a mature swarm appeared north of Suq Abs (1600N/4312E) on the 4th, and immature and mature solitary adults were scattered along the coast between Suq Abs and Zabid (1410N/4318E). Ground teams treated 5 909 ha.

• FORECAST

More adult groups and swarms will form in the central highlands and interior. Some of the swarms will remain in areas of recent rainfall within the interior and breed in areas that stay favourable, causing another generation of hopper bands to form, while other swarms will move south towards the Gulf of Aden and west towards the Red Sea where breeding will occur on the Tihama, causing hopper bands to form.

OMAN

• SITUATION

During August, most of the hopper groups and bands that remained in the south on the coast and in the Dhofar Hills near Salalah (1700N/5405E) had fledged by mid-month and formed immature adult groups and, in the last week, an immature swarm was seen flying southwards on the 23rd while a few groups of mature adults were reported nearby. Hopper groups and fledglings were also seen at a few places near the coast towards Yemen. Scattered immature and mature adults were present on the interior plains west of the Dhofar Hills near Thumrait (1736N/5401E). In the northeast, mature solitary adults and a few groups appeared near Sur (2234N/5930E) and immature solitary

adults were present in the northwest near Buraimi (2415N/5547E). Ground teams treated 58 ha.

• FORECAST

A few small groups or swarms could form on the Salalah coast and move southwest to Yemen.

BAHRAIN, D.R. CONGO, IRAQ, ISRAEL, JORDAN, KUWAIT, LEBANON, PALESTINE, QATAR, SYRIA, TANZANIA, TURKEY, AND UAE

• FORECAST

No significant developments are likely.

EASTERN REGION

IRAN

• SITUATION

During August, low numbers of mature solitarious adults remained until about mid-month in South Khorasan near the Afghanistan border between Sarbisheh (3234N/5948E) and Nehbandan (3132N/6002E). No locusts were seen during surveys carried throughout the south.

• FORECAST

No significant developments are likely.

PAKISTAN

• SITUATION

During August, hopper groups and bands continued to develop in Tharparkar mainly between Chachro (2507N/7015E), Nagarparkar (2421N/7045E), and the India border in the extreme southeast of Sindh. Fledging commenced during the first week, causing groups of immature adults to form on the border of India. In Cholistan, scattered mature solitarious adults and a few late spring-bred mature adult groups were present and breeding near Islamgarh (2751N/7048E) until about mid-month; thereafter, groups of mid-instar hoppers were seen, and fledging started in the last week. In the Lasbela Valley, numerous hopper groups of various instars were present near Uthal (2548N/6637E). Control operations treated 26 381 ha of which 1 200 ha were by air.

• FORECAST

A second, limited generation of breeding is expected in Tharparkar and perhaps Cholistan with egg-laying and hatching in September, which is likely to give rise to hopper groups and small bands that will begin to fledge in late October. Immature adult groups will form in Lasbela where a second generation of breeding could occur in October.

INDIA

• SITUATION

During August, late spring-bred mature adult groups and swarms laid eggs in northern Rajasthan between Churu (2818N/7458E) and Suratgarh (2919N/7354E) until about mid-month. Widespread hatching and the formation of hopper groups and bands increased throughout Rajasthan in Barmer, Jodhpur, Nagaur, Bikaner, Churu,

and Ganganagar districts in Rajasthan and Kutch district in Gujarat. Limited breeding took place in Jaisalmer, Jalore, Pali, Sikar, and Jhunjhunun districts of Rajasthan. Ground and drone operations treated 49 124 ha on 1–26 August.

• FORECAST

A second, limited generation of breeding is expected in Rajasthan and Gujarat with egg-laying and hatching in September, which is likely to give rise to hopper groups and small bands that will begin to fledge in about late October.

AFGHANISTAN

• SITUATION

No locust reports were received during August.

• FORECAST

Isolated adults may persist near cropping areas in Paktia. 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, 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

No activities are currently scheduled.



Glossary of terms

The following special terms are used in the Desert Locust Bulletin when reporting locusts:

Non-gregarious adults and hoppers

Isolated (few)

- very few present and no mutual reaction occurring
- 0–1 adult/400 m foot transect (or less than 25/ha)

Scattered (some, low numbers)

- enough present for mutual reaction to be possible but no ground or basking groups seen
- 1–20 adults/400 m foot transect (or 25–500/ha)

Group

- forming ground or basking groups
- 20+ adults/400 m foot transect (or 500+/ha)

Adult swarm and hopper band sizes

Very small

- swarm: less than 1 km²
- band: 1–25 m²

Small

- swarm: 1–10 km²
- band: 25–2,500 m²

Medium

- swarm: 10–100 km²
- band: 2,500 m² – 10 ha

Large

- swarm: 100–500 km²
- band: 10–50 ha

Very large

- swarm: 500+ km²
- band: 50+ ha

Rainfall

Light

- 1–20 mm

Moderate

- 21–50 mm

Heavy

- more than 50 mm

Summer rains and breeding areas

- July–September/October
- Sahel of West Africa, Sudan, western Eritrea; Indo-Pakistan border

Winter rains and breeding areas

- October–January/February
- Red Sea and Gulf of Aden coasts; northwest Mauritania, Western Sahara

Spring rains and breeding areas

- February–June/July
- Northwest Africa, Arabian Peninsula interior, Somali plateau, Iran/Pakistan border

Other reporting terms

Breeding

- The process of reproduction from copulation to fledging

Recession

- Period without widespread and heavy infestations by swarms

Remission

- Period of deep recession marked by the complete absence of gregarious populations

Outbreak

- A marked increase in locust numbers due to concentration, multiplication and gregarisation which, unless checked, can lead to the formation of hopper bands and swarms

Upsurge

- A period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to- gregarious breeding in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions

Plague

- A period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously

Decline

- A period characterised by breeding failure and/or successful control leading to the dissociation of swarming populations and the onset of recessions; can be regional or major

Warning levels

Green

- *Calm*. 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

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>

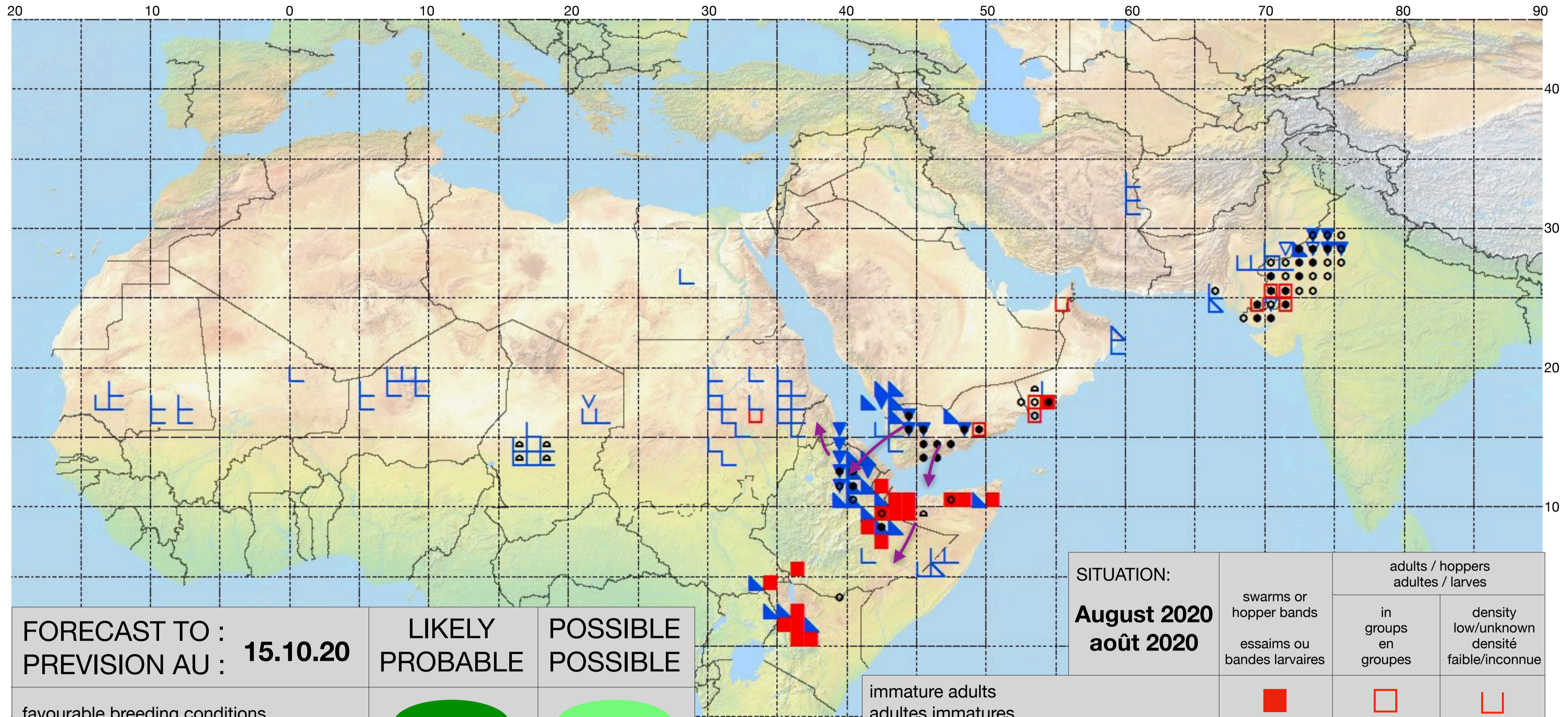
FAOLocust Slideshare. Locust presentations and photos
<http://www.slideshare.net/faolocust>



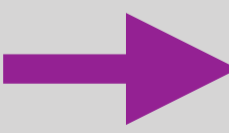
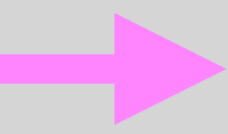
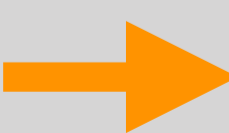



eLERT. Online database of resources and technical specifications for locust emergencies
<http://sites.google.com/site/elertsite>





















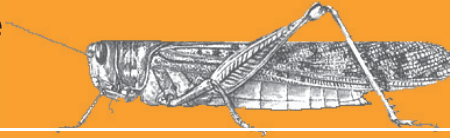
Desert Locust Summary

Criquet pèlerin – Situation résumée



FORECAST TO : PREVISION AU :	15.10.20	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favorables à la reproduction			
major swarm(s) essaim(s) important(s)			
minor swarms(s) essaim(s) limité(s)			
non swarming adults adults non essaimant			

SITUATION: August 2020 août 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)			



Desert Locust Bulletin

General situation during September 2020
Forecast until mid-November 2020

WESTERN REGION: CALM

SITUATION. Isolated adults and small-scale breeding in Chad.

FORECAST. Locusts will decline in summer areas. Small-scale breeding in northwest Mauritania.

CENTRAL REGION: THREAT

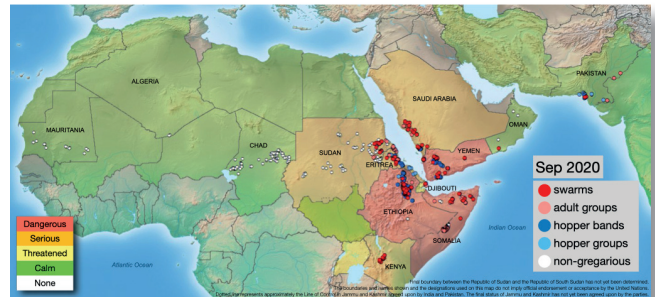
SITUATION. Widespread hatching, band and swarm formation in northeast **Ethiopia** (57 457 ha treated) and **Yemen** (5 828 ha); swarms arrive in southwest **Saudi Arabia** (13 745 ha) and lay on the Red Sea coast where hopper bands form; swarms, groups and breeding in **Eritrea** (5 013 ha); swarms arrive and lay in eastern **Sudan** (9 900 ha) and hopper bands begin to form; immature swarms prevail in northern **Somalia** (17 477 ha) and, to a lesser extent, in northwest **Kenya** (2 100 ha); a swarm seen in southern **Oman**.

FORECAST. More swarms will form in northeast **Ethiopia** that could move to the Highlands and the Ogaden where other swarms may migrate south from **Yemen** and northern **Somalia** towards **Kenya**. Breeding in northern Somalia and eastern Ethiopia. Locusts will increase further in the Yemen interior, eastern **Sudan**, and in the winter breeding areas along both sides of the Red Sea in **Eritrea**, Sudan, Yemen and Saudi Arabia, causing groups, bands and swarms to form.

EASTERN REGION: THREAT

SITUATION. Limited control operations against small second generation breeding in **Pakistan** (3 645 ha). No locusts in **India**.

FORECAST. The situation will return to normal with only small residual populations in Lasbela Valley, **Pakistan** and perhaps Rajasthan, **India**.



Swarm breeding in northeast Africa and Yemen

Even though ground and aerial control operations continued during September against swarms in the Horn of Africa and Yemen, the situation remains worrisome. Substantial hatching and hopper band formation caused numerous immature swarms to form in northeast Ethiopia. Hopper bands and swarms continued to form in Yemen, and some swarms started to move to the southern coast. An increasing number of swarms were reported in northern Somalia. As prevailing winds coming from the north become established over the Horn of Africa, there will be an increased threat of swarm migration from Yemen, northeast Ethiopia and northern Somalia south to eastern Ethiopia and central Somalia in October that could extend to northern Kenya in November. Other swarms were present in Eritrea, some of which moved to eastern Sudan and laid eggs. Additional swarms could arrive from Ethiopia. Winter breeding by swarms started several months earlier than normal along the Red Sea coast, which could allow an extra generation of breeding this season and cause substantial increases in locusts. Hopper bands formed on the coast in Saudi Arabia and Yemen, and groups in Eritrea. In southwest Asia, the upsurge ended, and only small residual infestations remained in Pakistan. In West Africa, small-scale breeding occurred in the northern Sahel, but locust numbers remained very low. Although locusts may concentrate and breed in northwest Mauritania in the coming months, no significant developments are expected.

The FAO Desert Locust Bulletin is issued every month by the Desert Locust Information Service (DLIS) at FAO HQ in Rome, Italy. DLIS continuously monitors the global Desert Locust situation, weather and ecology to provide early warning based on survey and control results from affected countries, combined with remote sensing, historical data and models. The bulletin is supplemented by Alerts and Updates during periods of increased Desert Locust activity.

Telephone: +39 06 570 52420 (7 days/week, 24 hr)

E-mail: eclou@fao.org / faodlislocust@gmail.com

Internet: www.fao.org/ag/locusts

Facebook/Twitter: faolocust



Weather & Ecological Conditions in September 2020

Favourable ecological conditions prevailed in all summer breeding areas while early rains caused breeding conditions to be favourable along both sides of the southern Red Sea.

WESTERN REGION

The Inter-Tropical Convergence Zone (ITCZ) began its seasonal movement southwards at the beginning of September. Nevertheless, it remained some 150 km further north than usual over eastern Niger and Chad during the first decade. During the second decade, it retreated southwards and was located up to 175 km further south than usual, except in western Mauritania and eastern Chad, and reached southern Mauritania (Tamcheppet and Nema), central Mali (Tombouctou), central Niger (Tassara and Tasker), and central Chad (Salal and Iriba). As a result, low to moderate rains fell in southern Mauritania, northeast Mali, and northern Niger while heavier rains fell in eastern Chad during the first decade. Thereafter, rainfall progressively decreased in all summer breeding areas except for Mauritania where moderate to heavy showers fell in the northwest during the second decade and good rains fell in central portions of the south during the third decade. Ecological conditions remained favourable for breeding throughout September; however, vegetation started to dry out in some areas of southeast Mauritania and southwest and northeast Chad after mid-month.

CENTRAL REGION

At the beginning of September, the Inter-Tropical Convergence Zone (ITCZ) began its seasonal movement southwards over the interior of Sudan but remained up to 150 km further north than usual during the first decades. Consequently, low to moderate rains fell in the summer breeding areas from Chad to Eritrea and the western side of the Red Sea Hills, and as far north as the Baiyuda Desert. Low to moderate rains continued in the interior of Yemen during the first decade. Good rains fell during the first two decades in the winter breeding areas along the Red Sea coast of Eritrea, Yemen and in Saudi Arabia as far north as Lith. In the Horn of Africa, heavy rains fell in northern Ethiopia while light to moderate rains fell at times in northeastern Ethiopia and northern Somalia. Heavier rains fell during the third decade on the plateau near Las Anod in northern Somalia near the Ethiopia border. Consequently, ecological conditions were favourable for breeding in nearly all these areas except for the plateau in northern Somalia where conditions were limited to just a few places in the northeast and northwest. In northwest Kenya, relatively low temperatures and green vegetation prevailed.

EASTERN REGION

Monsoon rainfall during September in West Rajasthan was 73% above normal. In general, this year's monsoon resulted in above-normal rains in the summer breeding areas along both sides of the Indo-Pakistan. Consequently, ecological conditions remained favourable in these areas during September. On the 28th, the monsoon began its seasonal withdrawal to the south from Rajasthan, which is about one week later than normal. Dry conditions prevailed elsewhere in the region.



Area Treated

Control operations treated 115 165 ha in September compared to 153 569 ha in August.

Eritrea	5 013 ha
Ethiopia	57 457 ha
Kenya	2 100 ha
Pakistan	3 645 ha
Saud Arabia	13 745 ha
Somalia	9 157 ha (August, revised)
	17 477 ha
Sudan	9 900 ha
Yemen	5 828 ha



Desert Locust Situation and Forecast

WESTERN REGION

MAURITANIA

• SITUATION

Although no reports were received during September, low numbers of mature solitary adults were scattered in the south from Boutilimit (1732N/1441W) and Aguilal Faye (1827N/1444W) in the west to Nema (1636N/0715W) and Oualata (1717N/0701W) in the east. Small-scale breeding occurred in the southeast near Timbedra (1614N/0809W). Isolated mature solitary adults were also present in Inchiri of the northwest.

• FORECAST

Locust numbers and breeding will decline in the south as rains end and vegetation dries out; however, solitary adults may concentrate in the northwest where small-scale breeding could occur.

MALI

• SITUATION

During the first decade of September, no locusts were seen during surveys carried out in the west near Kayes (1426N/1128W) and in the centre north of Mopti (1430N/0415W).

• FORECAST

Small-scale breeding is likely to be in progress but is expected to decline as conditions dry out in areas of recent rainfall in Tamesna, the Adrar des Iforas, Tilemsi Valley, and Timetrine. Consequently, locusts may concentrate in any areas that remain green where they could form a few small groups.

NIGER

• SITUATION

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

• FORECAST

Small-scale breeding is likely to be in progress but is expected to decline as conditions dry out in the central pasture areas and on the Tamesna Plains. Consequently, locusts may concentrate in any areas that remain green where they could form a few small groups.

CHAD

• SITUATION

During September, isolated immature and mature solitary adults were scattered from Nokou (1435N/1446E) in the west to Fada (1714N/2132E) and Amdjarass (1604N/2250E) in the northeast. Isolated mature solitary adults were seen copulating during the second week to the west of Kalait (1550N/2054E).

• FORECAST

Small-scale breeding is likely to be in progress but is expected to decline as conditions dry out in central and northeastern areas. Consequently, locusts may concentrate in any areas that remain green where they could form a few small groups.

SENEGAL

• SITUATION

No locusts were reported during September.

• 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 September, isolated mature solitary adults were present along the Niger border near In Guezzam (1934N/0546E). No locusts were seen in the central Sahara near the Adrar Valley (2753N/0017W), in the south near Tamanrasset (2250N/0528E), and along the Mali border near Bordj Badji Mokhtar (2119N/0057E).

• FORECAST

Local breeding may occur near irrigated areas in the Adrar Valley of the Central Sahara and perhaps in runoff areas of the Hoggar Mountains in the south. No significant developments are likely.

MOROCCO

• SITUATION

No locusts were reported during September.

• FORECAST

No significant developments are likely.

LIBYA

• SITUATION

No reports were received during September.

• FORECAST

No significant developments are likely.

TUNISIA

• SITUATION

No locusts were reported during September.

• FORECAST

No significant developments are likely.

CENTRAL REGION

SUDAN

• SITUATION

During September, mature solitary adults and groups were first reported on the Red Sea coast north of Tokar Delta (1827N/3741E) on the 13th and on the next day along the western side of the Red Sea Hills near Haiya (1820N/3621E), followed by more immature and mature adult groups and swarms from northeast of Haiya to south of Derudeb (1731N/3607E) where egg-laying occurred, and hatching and band formation commenced at the end of the month. These populations most likely originated in Ethiopia and arrived from adjacent areas of Eritrea. Aerial control operations were mounted and treated 9 900 ha. Elsewhere, scattered immature and mature solitary adults were present in North Darfur near El Fasher (1337N/2522E), North Kordofan near Sodiri (1423N/2906E), Umm Saiyala (1426N/3112E), the Baiyuda Desert, the Nile Valley between Shendi (1641N/3322E) and Dongola (1910N/3027E), and along the Atbara River.

• FORECAST

Hatching and band formation are likely to occur in the east between Kassala and Haiya until about mid-October

with fledging and the formation of immature swarms commencing from early November onwards. In the summer breeding areas, a few small groups may form west of the Nile Valley as vegetation dries out. In the winter breeding areas, breeding is expected to start on the Red Sea coast from October onwards, which may be supplemented by groups and small swarms from adjacent areas of Eritrea.

ERITREA

• SITUATION

During September, mature groups and swarms continued to be present in the highlands near Asmara (1519N/3856E) and Keren, the eastern foothills near Afabet (1612N/3841E) and Naro (1626N/3840E), and on the southern and central Red Sea coast. Hatching occurred on the Red Sea coast, causing hopper bands to form near Naro, Foro (1515N/3937E), and Ghelaelo (1507N/4004E), and hopper groups along other parts of the coast between Assab (1301N/4247E) in the south and Sheib (1551N/3903E) in the north. A breeding swarm was seen in the western lowlands near Kerkebet (1604N/3725E) on the 18th and a breeding group was seen in the highlands northwest of Asmat (1615N/3803E) on the 23rd. During the last decade, an increasing number of mature groups were seen on the northern coast near Mehimet (1723N/3833E) where they were laying. Ground teams treated 5 013 ha.

• FORECAST

Additional hatching will cause more hopper groups and bands to form on the Red Sea coastal plains and, to a lesser extent, in the western lowlands and the central highlands. Immature groups and swarms are likely to form early in the forecast period onwards that could mature and be ready to lay at the end of the forecast period. This could be supplemented by swarms arriving from northeast Ethiopia.

ETHIOPIA

• SITUATION

During September, substantial hatching and band formation continued in the northern Rift Valley of the Afar region along a 450 km stretch of the eastern escarpment from south of Dese (1108N/3938E) to north of Mekele (1329N/3928E) and west of Semera (1148N/4100E) that included parts of eastern Amhara and Tigray regions. As a result, an increasing number of immature adult groups and swarms formed after mid-month. Similar infestations were present in an area west of Dire Dawa (0935N/4150E). Cross-border swarm movements were reported in the Somali region at the end of the month. Elsewhere, scattered immature and mature adults were reported in the highlands east of Awasa (0703N/3828E) in Oromiya region. No locusts were seen in the Ogaden between Jijiga (0922N/4250E), Kebri Dehar (0644N/4416E), and Gode (0557N/4333E). Control operations treated 57 457 ha of which 30 300 ha were by air.

• FORECAST

More swarms are expected to form in Afar that could spread into the Amhara and Tigray highlands as well as south-eastwards to the Somali region and the northern Ogaden where they could mature and breed or continue southwards. This is likely to be supplemented by additional swarms coming from northern Somalia and Yemen.

DJIBOUTI

• SITUATION

During September, locusts were reported in the southwest near As-Eyla (1100N/4206E) on the 23rd. In the north, groups of immature and mature adults and an immature swarm were seen along the coastal plains north of Obock (1157N/4317E) on the 30th.

• FORECAST

A few groups and small swarms may appear at times from Yemen and transit through the country to Ethiopia and Somalia.

SOMALIA

• SITUATION

During September, immature adult groups and swarms persisted on the northern plateau between Hargeisa (0931N/4402E) and Gardo (0930N/4905E) where some of them were maturing. At least one swarm was seen laying eggs near Erigavo (1040N/4720E). As the month progressed, there were increasing reports of immature swarms in the northeast between Iskushuban (1017N/5014E) and Erigavo. At the end of the month, swarms were reported in the northwest near Boroma (0956N/4313E) that may have come from southern Yemen and adjacent areas of northeast Ethiopia. In the central region of Galguduud, immature and mature solitarious adults persisted near Dusa Mareb (0532N/4623E). Control operations using biopesticides treated 17 477 ha of which 205 ha were by air.

• FORECAST

Any swarms that mature are likely to breed in areas of recent rainfall on the northern plateau in the northwest, northeast, and near the Ethiopian border south of Las Anod, giving rise to hopper groups and bands. Swarms that do not mature are likely to move southwards to central regions and adjacent areas of eastern Ethiopia once the prevailing northerly winds become established. This is likely to be supplemented by additional swarms arriving from Yemen and Ethiopia.

KENYA

• SITUATION

During September, a few immature and slow maturing spring-bred swarms continued to persist in the northwest counties, shifting from Turkana and Marsabit to Samburu and adjacent areas of northeast Baringo and northwest

Laikipia. The swarms were mainly small and mobile. Aerial control operations treated 2 100 ha by air.

• FORECAST

Residual swarms in the northwest are expected to slowly mature and breed in any favourable areas from late October onwards. During November, there will be an increasing threat of low to moderate numbers of swarms arriving in the northeast from Ethiopia and Somalia.

UGANDA

• SITUATION

No locusts were reported during September.

• FORECAST

There remains a low risk that a small swarm or two from adjacent areas of Kenya could stray into Karamoja where it is likely to disperse without breeding.

SOUTH SUDAN

• SITUATION

No locusts were reported during September.

• FORECAST

There remains a low risk that a small swarm or two from adjacent areas of Kenya could stray into Eastern Equatoria where it is likely to disperse without breeding.

EGYPT

• SITUATION

No reports were received during September.

• FORECAST

No significant developments are likely.

SAUDI ARABIA

• SITUATION

During the last week of August, several mature swarms were seen in the southwest just north of the Yemen border in the Asir Mountains west of Najran (1729N/4408E) and on the Red Sea coast near Jizan (1656N/4233E). Ground teams treated 1 355 ha.

During September, mature adult groups and swarms were seen in the Asir Mountains between Abha and Mecca primarily during the first week but also at times thereafter. On the Red Sea coast, mature adult groups and swarms laid eggs north of Jizan up to about mid-month. A few immature swarms were seen further north near Lith where an adult group laid eggs nearby. Numerous hopper bands formed on the coast north of Jizan from hatching that commenced at the beginning of the month. Control operations treated 13 745 ha of which 750 ha were by air.

• FORECAST

An increasing number of immature adult groups and swarms are likely to form during the forecast period on the southern Red Sea coastal plains near Jizan. Breeding is likely to extend to other coastal areas as far north as Jeddah where good rains fell last month.

YEMEN

• SITUATION

During September, substantial hatching occurred, giving rise to numerous hopper bands in the interior, mainly on the western edge of Ramlat Sabatyn near Al Hazm (1610N/4446E) and, to a lesser extent, near Marib (1527N/4519E), Bayhan (1452N/4545E), and Nisab (1430N/4629E). Other hopper bands in the same areas caused immature swarms to form and mature. Immature swarms were also present in Wadi Hadhramaut near Sayun (1559N/4844E) and were seen moving from the interior to the southern coastal plains near Zinjibar (1306N/4523E) where hopper bands persisted. Further swarm laying was reported at mid-month near Al Hazm and Zinjibar. Breeding also occurred in the central highlands where hopper bands and a few immature swarms were present north of Sana'a (1521N/4412E). On the Red Sea coast, swarm laying occurred in the north between Al Zuhrah (1541N/4300E) and Suq Abs (1600N/4312E), causing hopper bands to form. Ground teams treated 5 828 ha.

• FORECAST

Breeding is expected to continue in the interior between Al Hazam and Wadi Hadramout, on the southern coast near Zinjibar, and along the Red Sea coastal plains, causing more hopper bands and swarms to form.

OMAN

• SITUATION

During September, an immature swarm was seen flying in the south near Thumrait on the 21st. No locusts were seen elsewhere in the south except for isolated immature solitary adults in the north near Adam (2223N/5731E).

• FORECAST

No significant developments are likely.

BAHRAIN, D.R. CONGO, IRAQ, ISRAEL, JORDAN, KUWAIT, LEBANON, PALESTINE, QATAR, SYRIA, TANZANIA, TURKEY, AND UAE

• FORECAST

No significant developments are likely.

EASTERN REGION

IRAN

• SITUATION

During September, no locusts were seen during surveys carried out in the southern provinces of Ilam, Khuzestan, Kohgiluyeh, Bushehr, Fars, Hormozgan, Kerman, and Sistan-Baluchistan, and in the northeastern province of South Khorasan.

• FORECAST

No significant developments are likely.

PAKISTAN

• SITUATION

During September, the situation improved dramatically. In Sindh, a very limited second generation of breeding occurred west of Hyderabad (2523N/6822E) and in Tharparkar south of Chachro (2507N/7015E) where early instar hopper groups were present at a few places. In Cholistan, groups of immature adults were present south of Bahawalpur (2924N/7147E) and near Islamgarh (2751N/7048E). In the Lasbela Valley, several hopper groups and bands were present south of Uthal (2548N/6637E) that gave rise to two small immature swarms during the last decade of the month. Ground teams treated 3 645 ha. No locusts were seen elsewhere in Punjab, KPK, Sindh, and on the coast of Baluchistan.

• FORECAST

Locust numbers will continue to decline in all areas. A few small residual infestations may persist in Lasbela. No significant developments are likely.

INDIA

• SITUATION

By early September, the situation had improved dramatically, and no locusts were seen during intensive surveys in Rajasthan and Gujarat throughout the month.

• FORECAST

Small residual populations of scattered adults may be present in a few places in Rajasthan. No significant developments are likely.

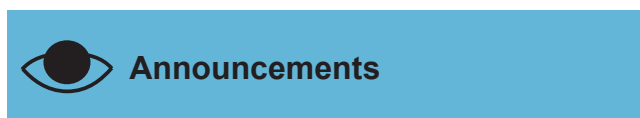
AFGHANISTAN

• SITUATION

No locust reports were received during September.

• FORECAST

No significant developments are likely.



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, 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

SWAC. 32nd session (virtual), 7–9 December 2020 (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 km² • band: 1–25 m²

Small

- swarm: 1–10 km² • band: 25–2,500 m²

Medium

- swarm: 10–100 km² • band: 2,500 m² – 10 ha

Large

- swarm: 100–500 km² • band: 10–50 ha

Very large

- swarm: 500+ km² • band: 50+ ha

Rainfall

Light

- 1–20 mm

Moderate

- 21–50 mm

Heavy

- more than 50 mm

Summer rains and breeding areas

- July–September/October
- Sahel of West Africa, Sudan, western Eritrea; Indo-Pakistan border

Winter rains and breeding areas

- October–January/February
- Red Sea and Gulf of Aden coasts; northwest Mauritania, Western Sahara

Spring rains and breeding areas

- February–June/July
- Northwest Africa, Arabian Peninsula interior, Somali plateau, Iran/Pakistan border

Other reporting terms

Breeding

- The process of reproduction from copulation to fledging

Recession

- Period without widespread and heavy infestations by swarms

Remission

- Period of deep recession marked by the complete absence of gregarious populations

Outbreak

- A marked increase in locust numbers due to concentration, multiplication and gregarisation which, unless checked, can lead to the formation of hopper bands and swarms

Upsurge

- A period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to- gregarious breeding in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions

Plague

- A period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously

Decline

- A period characterised by breeding failure and/or successful control leading to the dissociation of swarming populations and the onset of recessions; can be regional or major

Warning levels

Green

- *Calm*. 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.ideo.columbia.edu/maproom/.Food_Security/.Locusts/index.html

IRI Greenness maps. Dynamic maps of green vegetation evolution every decade
http://iridl.ideo.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>

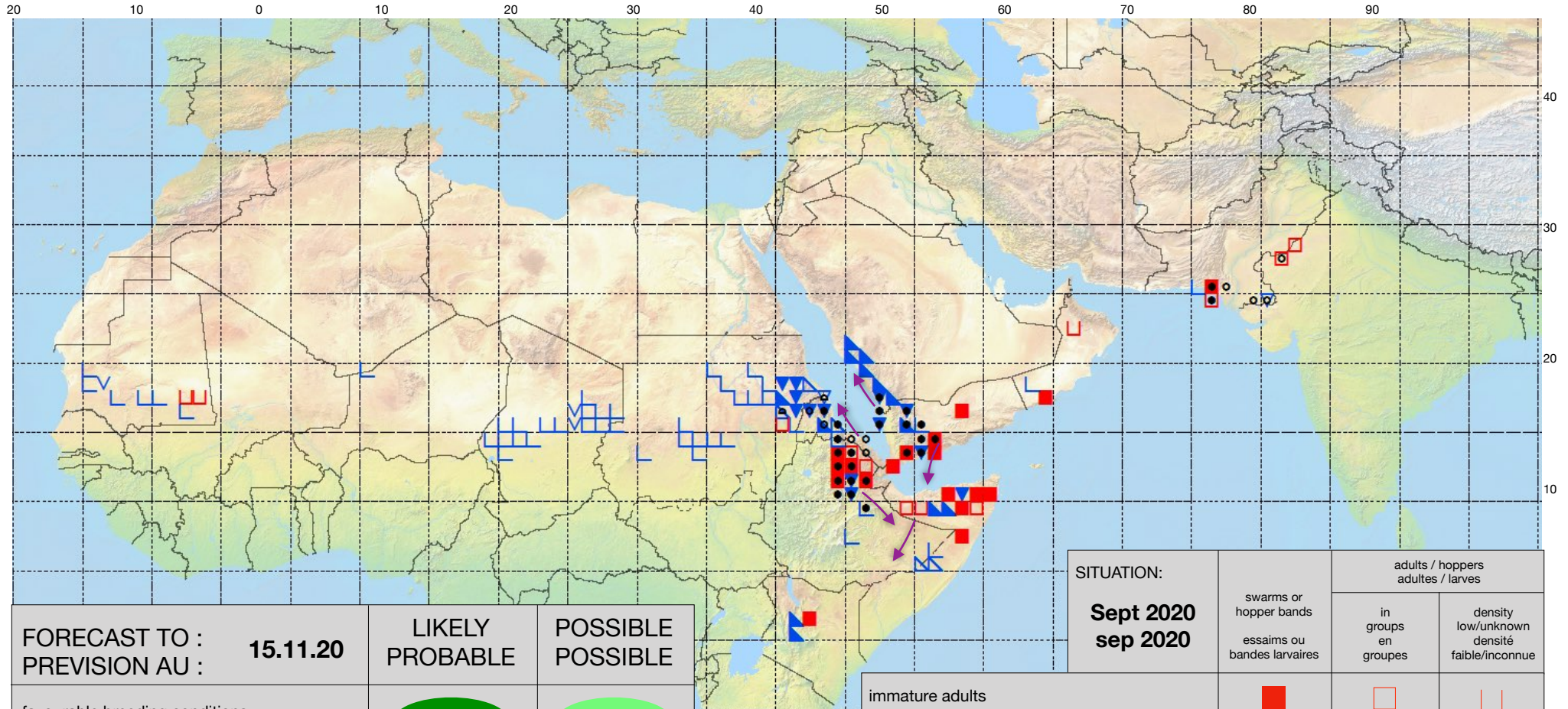
FAOLocust Slideshare. Locust presentations and photos
<http://www.slideshare.net/faolocust>


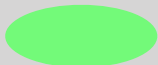






eLERT. Online database of resources and technical specifications for locust emergencies
<http://sites.google.com/site/elertsite>





















Desert Locust Summary

Criquet pèlerin – Situation résumée



FORECAST TO : PREVISION AU :	15.11.20	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favorables à la reproduction			
major swarm(s) essaim(s) important(s)			
minor swarms(s) essaim(s) limité(s)			
non swarming adults adults non essaimant			

SITUATION: Sept 2020 sep 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)			



Desert Locust Bulletin

General situation during October 2020 Forecast until mid-December 2020

WESTERN REGION: CALM

SITUATION. Small-scale breeding in **Mauritania, Niger, Chad, and Algeria.**

FORECAST. Locusts will decline in summer areas. Small-scale breeding in northwest **Mauritania.**

CENTRAL REGION: THREAT

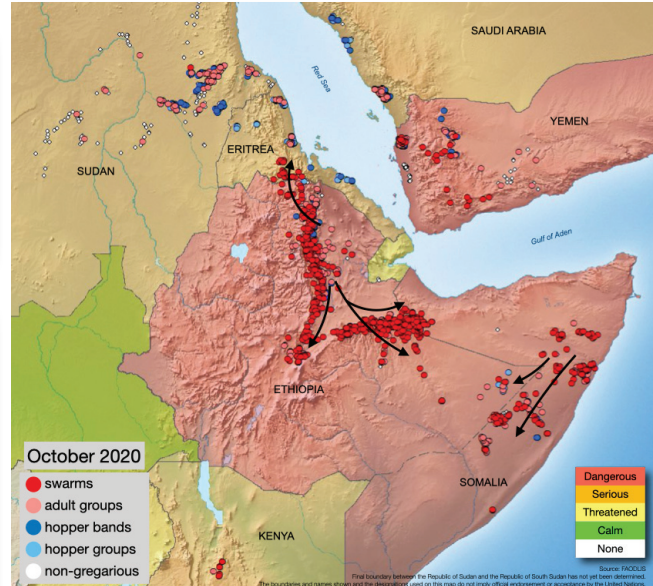
SITUATION. Numerous swarms in northeast **Ethiopia** (335 453 ha treated) that moved north to Eritrea, south to Rift Valley, and east to Somali region; swarms in northeast **Somalia** (12 974 ha) moved south; swarms arrive in Ogaden and central Somalia, lay and new hatching; hopper bands in eastern **Sudan** (52 912 ha); summer breeding ends in Yemen interior; hopper bands on Red Sea coast of **Eritrea** (10 354 ha), **Yemen** (4 609 ha), **Saudi Arabia** (21 290 ha), and **Sudan**; residual swarms maturing in northwest **Kenya** (318 ha).

FORECAST. More hatching and band formation in eastern **Ethiopia** (Ogaden) and **Somalia** with new swarms forming in early December that will threaten southeast Ethiopia, southern Somalia, and northeast Kenya. Local breeding in northwest **Kenya**. Breeding to continue along both sides of Red Sea in **Eritrea, Sudan, Saudi Arabia, and Yemen** with possibility of hopper band and swarm formation, especially in Yemen.

EASTERN REGION: CALM

SITUATION. Limited control operations against residual infestations in **Pakistan** (220 ha); no locusts in **India**; small adult groups in southeast **Iran** (40 ha).

FORECAST. Low numbers of adults are likely to persist in southeast **Iran** and southwest **Pakistan**; no significant developments.



Epicentre shifting to eastern Ethiopia and Somalia

As anticipated, numerous swarms formed in northeast Ethiopia during October. The situation improved by the end of the month due to intensive control operations, and as swarms moved north into the highlands and to Eritrea, south into the Rift Valley, and further east. Consequently, the epicentre will shift to the Somali region in eastern Ethiopia and adjacent areas of Somalia where control operations are in progress. Another generation of breeding started in this vast area where mature swarms in northeast Somalia moved southwards and laid eggs that are hatching and hopper bands are forming. More bands will form during November and a new generation of immature swarms will form in early December that are expected to move south and threaten southeast Ethiopia, southern Somalia, and northeast Kenya. The swarms that moved to Eritrea are likely to reach the Red Sea coast where control operations are in progress against hopper bands. Control continued against hopper bands in eastern Sudan and on the Red Sea coast in Yemen and southwest Saudi Arabia. Breeding ended in the Yemen interior and swarms moved to the coast. Winter breeding along both sides of the Red Sea could cause hopper bands and swarms to form, especially in Yemen. The situation will continue to remain calm in other regions and no significant developments are expected.

The FAO Desert Locust Bulletin is issued every month by the Desert Locust Information Service (DLIS) at FAO HQ in Rome, Italy. DLIS continuously monitors the global Desert Locust situation, weather and ecology to provide early warning based on survey and control results from affected countries, combined with remote sensing, historical data and models. The bulletin is supplemented by Alerts and Updates during periods of increased Desert Locust activity.

Telephone: +39 06 570 52420 (7 days/week, 24 hr)
E-mail: ecl@fao.org / faodlislocust@gmail.com

Internet: www.fao.org/ag/locusts
Facebook/Twitter: faolocust



Weather & Ecological Conditions in October 2020

Good rains fell in eastern Ethiopia and central Somalia, causing favourable breeding conditions. Favourable conditions persisted along both sides of the southern Red Sea. Vegetation was drying out in the summer breeding areas of West Africa and Sudan.

WESTERN REGION

The Inter-Tropical Convergence Zone (ITCZ) continued its seasonal movement southwards during October. Nevertheless, its position was nearly 225 km further north than usual in the first decade from Mali to Chad, which was further north than in the last decade of September. During the second decade, the ITCZ was some 100 km further south than normal and had moved well south of the summer breeding areas in the Sahel. Light to moderate rains fell in southern Mauritania, in northern Mali from Araouane to the Adrar des Iforas, the southern Tamesna Plains in Niger, and central Chad during the first decade while little rainfall occurred in the second decade. Consequently, breeding conditions remained favourable in the south and northwest of Mauritania and northeast Chad but were drying out in Niger and central Chad. In Northwest Africa, very little rain fell except for light to moderate showers in the central Western Sahara near Bir Anzarane. In Algeria, breeding conditions were favourable in the Adrar Valley and on the Niger border near In Guezzam but were drying out west of Tamanrasset.

CENTRAL REGION

The Inter-Tropical Convergence Zone (ITCZ) continued its seasonal movement southwards during October. Nevertheless, its position was nearly 100 km further north than usual in the first decade over Darfur, which was further north than in the last decade of September. During the second decade, the ITCZ was more than 100 km further south than normal and had moved south of the summer breeding area in Sudan and Eritrea. During the first decade, light to moderate rains fell south of Geneina, El Fasher, and En Nahud in Sudan while light rains fell in a few places west of the Red Sea Hills. Breeding conditions remained favourable between the Nile Valley and the Red Sea Hills and along Wadi Oko/Diib in the northeast. In the Horn of Africa, light to moderate rains fell throughout the month in the Ogaden of eastern Ethiopia, adjacent areas of central Somalia, and in southern Somalia, which allowed conditions to become favourable for breeding. In the winter breeding areas, light rains fell on the central coast of the Red Sea in Eritrea during the first decade. Rainfall occurred in the foothills along parts of the Red Sea coast in Yemen and Saudi Arabia that may have run off onto the coastal plains. Breeding conditions remained favourable on the coast of

Eritrea, in Tokar Delta of Sudan, and Yemen but vegetation was drying out in many areas on the coast of Saudi Arabia except near Lith.

EASTERN REGION

No significant rain in the region fell during October. Due to the withdrawal of the monsoon, vegetation continued to dry out in the summer breeding areas along both sides of the Indo-Pakistan border. Elsewhere, dry conditions prevailed.



Area Treated

There was a substantial increase in control operations during October, treating 438 170 ha compared to 115 165 ha in September.

Eritrea	10 354 ha
Ethiopia	335 453 ha (estimated)
Iran	40 ha
Kenya	318 ha
Pakistan	220 ha
Saud Arabia	21 290 ha
Somalia	12 974 ha
Sudan	52 912 ha
Yemen	4 609 ha



Desert Locust Situation and Forecast

WESTERN REGION

MAURITANIA

• SITUATION

During October, small-scale breeding occurred in the west between Aguilal Faye (1827N/1444W), Tidjikja (1833N/1126W), and Akjoujt (1945N/1421W), and in the southeast near Oualata (1717N/0701W). Mature solitary adults were seen copulating and solitary hoppers of all instars, fledglings and immature adults were present. In addition, scattered mature solitary adults were present in the south between Tamcheppet (1714N/1040W) and Nema (1636N/0715W), and in Tagant, northern Brakna, Trarza, southwest Adrar, and Inchiri.

• FORECAST

Locust numbers and breeding will decline in the south but are likely to increase in the west and northwest where hoppers and adults may concentrate and form small groups.

MALI

• SITUATION

No reports were received during October.

• FORECAST

Small concentrations of adults may be present and persist in parts of the Adrar des Iforas.

NIGER

• SITUATION

During October, small-scale breeding occurred on the northern Tamesna Plains near the Algeria border and Assamakka (1920N/0546E) and in the southeast Air Mountains along the Tafidet Valley (ca. 1809N/0926E) where mature solitary adults and first instar hoppers were seen in the last week. A group of mature adults was also reported in Tafidet.

• FORECAST

Locust numbers will decline further on the Tamesna Plains as vegetation dries out. A few small adult groups may persist in southeastern Air Mountains.

CHAD

• SITUATION

During October, small-scale breeding occurred and solitary hoppers of all instars were present in central areas near Beurkia (1523N/1800E) in the centre and west of Fada (1714N/2132E) in the northeast. Low numbers of immature and mature solitary adults were scattered mainly between Beurkia, Kalait (1550N/2054E) and Fada and, to a lesser extent, in the west near Mao (1406N/1511E) and in the east near the Sudan border and Iriba (1507N/2215E). In the last week, *transiens* adults were seen copulating near Fada.

• FORECAST

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

SENEGAL

• SITUATION

No locusts were reported during October.

• 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 October, small-scale breeding occurred in the extreme south on the border of Niger southwest of In Guezzam (1934N/0546E) where hopper groups were seen in one area and scattered mature solitary adults were

present nearby. Isolated immature solitary adults were seen in a few places west of Tamanrasset (2250N/0528E). No locusts were seen in the Adrar Valley (2753N/0017W) of the Central Sahara.

• FORECAST

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

MOROCCO

• SITUATION

During October, no locusts were seen during surveys carried out in the northern Western Sahara between Laayoune (2709N/1311W), Guelta Zemmur (2508N/1222W) and Smara (2644N/1140W), including Wadi Sakia El Hamra.

• FORECAST

No significant developments are likely.

LIBYA

• SITUATION

No reports were received during October.

• FORECAST

No significant developments are likely.

TUNISIA

• SITUATION

No locusts were reported during October.

• FORECAST

No significant developments are likely.

CENTRAL REGION

SUDAN

• SITUATION

During October, hatching and hopper band formation continued in the east between the Atbara River and the Red Sea Hills where fledging occurred during the last week, giving rise to immature adult groups. Although swarm laying was last reported on the 11th west of Haiya (1820N/3621E), mature adult groups laid in the Baiyuda Desert and near the Nile south of Abu Hamed (1932N/3320E) up to next two weeks later. Immature and mature solitary adults and a few groups were present in North Kordofan while mature adult groups continued to appear west of the Red Sea Hills probably moving towards the coast. In the winter breeding areas, hopper bands were present on the Red Sea coast in the Tokar Delta (1827N/3741E) where some fledged and formed immature adult groups during the last decade. Scattered mature solitary adults were seen further south near Karora (1745N/3820E). Scattered immature and mature solitary adults were present in subcoastal areas of the northeast where a few adults were laying in Wadi Oko/Diib between Tomala (2002N/3551E) and Sufiya (2119N/3613E). Control operations treated 52 912 ha, of which 36 600 were by air.

• FORECAST

Locust infestations will decline in the summer breeding areas and west of the Red Sea Hills as adult groups move to the Red Sea coastal plains where they will mature and breed in the Tokar Delta and other areas that receive rainfall. Consequently, locust numbers will increase, and hopper groups could form. Small-scaler breeding is expected to continue in Wadi Oko/Diib.

ERITREA

• SITUATION

During October, hatching occurred in a few places in the western lowlands and adjacent highlands north of Kerkebet (1604N/3725E) that caused hopper groups to form. Breeding continued on the Red Sea coast from Tio (1441N/4057E) in the south to Mehimet (1723N/3833E) in the north. Hatching occurred near Sheib (1551N/3903E), south of Mehimet and, to a lesser extent, near Tio, causing hopper groups to form. At least one hopper band formed near Mehimet and a few hopper bands were present near Tio and south of Foro (1515N/3937E) from earlier breeding. During the last decade of the month, fledging near Sheib caused a few immature adult groups to form, and numerous immature swarms, up to 50 km² in size, from adjacent areas of northern Ethiopia appeared in the highlands south of Asmara (1519N/3856E), continuing north to Anseba region. Ground teams treated 10 354 ha.

• FORECAST

Locust numbers should decline in the western lowlands but increase further on the Red Sea coastal plains where another generation of breeding will occur in areas that receive rainfall. Some swarms from northeast Ethiopia could appear early in the forecast period in the southern highlands and continue to the Red Sea coast.

ETHIOPIA

• SITUATION

During October, late instar hopper bands prevailed in the northern Rift Valley of the Afar region along a 450 km stretch of the eastern escarpment from south of Dese (1108N/3938E) to north of Mekele (1329N/3928E) and west of Semera (1148N/4100E), including parts of eastern Amhara and Tigray regions until mid-month. Smaller infestations were present in the Harar Highlands between Dire Dawa (0935N/4150E) and Jijiga (0922N/4250E). Substantial numbers of immature adult groups and swarms formed in both areas. Many of the immature swarms moved from Afar to the Somali region where they were seen in the Harar Highlands as well as further east towards Kebri Dehar (0644N/4416E) in the Ogaden. After mid-month, swarms from Afar nearly reached Addis Ababa (0901N/3845) while others moved south of Nazreth (0832N/3916E) in the Rift Valley, and northwest to eastern highland areas of Amhara and Tigray, reaching Axum (1407N/3843E) and the Eritrean border. Some of the swarms near Jijiga had matured, and a

few swarms were seen copulating north of Dese and west of Dire Dawa. In the eastern Ogaden, mature groups and at least one swarm, which originated from infestations in central Somalia, laid eggs between Warder (0658N/4520E) and the Somali border from late September onwards. Hatching increased during the last week in Warder, Galadi and Bokh districts, and groups of hoppers had reached the third instar. By the end of the month, the situation improved in the north and northeast. Control operations reportedly treated 335 453 ha of which 127 334 ha were by air.

• FORECAST

Locusts will decline in the north and northeast as most of the swarms move to the Somali region while a few could move south in the Rift Valley. Cross border movements between Somalia are likely. Consequently, locust numbers will increase in the Somali region, particularly in eastern areas (Ogaden), as more laying, hatching and band formation occurs. A new generation of immature swarms are expected to form from late November onwards and move southwards to southern areas.

DJIBOUTI

• SITUATION

During the first decade of October, scattered immature and mature solitarious adults persisted in the southwest near As-Eyla (1100N/4206E).

• FORECAST

A few groups and small swarms may appear at times from Yemen and transit through the country to Ethiopia and Somalia.

SOMALIA

• SITUATION

During October, the immature swarms that prevailed in the northeast between Garowe (0824N/4829E) and Gardo (0930N/4905E) matured, and many moved south to central areas of Mudug and Galguduud, reaching the northern part of Hirshabelle to the northeast of Belet Weyne (0444N/4512E) by mid-month and the coast north of Mogadishu (0202N/4520E) at the end of October. Although copulating swarms were seen southeast of Garowe and north of Dusa Mareb (0532N/4623E), widespread egg-laying is thought to have occurred over a large area between Gardo and Belet Weyne. Hatching and band formation commenced during the last week southeast of Garowe and Galkayo (0646N/4725E). In the northwest, a few immature swarms from adjacent areas of Ethiopia and perhaps Yemen were seen early in the month between Boroma (0956N/4313E) and Hargeisa (0931N/4402E), followed by more immature swarms after mid-month, some of which were maturing. Control operations using biopesticides treated 12 974 ha of which 10 414 ha were by air.

• FORECAST

Widespread hatching and band formation are expected to occur between Gardo and Belet Weyne, which could cause

substantial swarms to start forming from early December onwards that would move southwards. Smaller scale breeding is likely on the northwest plateau where hatching and band formation is expected in November. This could be supplemented by cross border swarm movements from adjacent areas of Ethiopia and low numbers of swarms coming from southern Yemen.

KENYA

• SITUATION

During October, a few small residual swarms were slowly maturing in the northwest where the counties of Baringo, Laikipia and Samburu come together some 125 km south of Lake Turkana. Aerial control operations treated 318 ha.

• FORECAST

Residual swarms in the northwest are expected to breed in favourable areas that will cause hatching and band formation from November onwards. This could be supplemented by a few swarms from Ethiopia and Somalia arriving at times in the northeast, which is likely to increase substantially from early December onwards as a new generation of swarms form in Ethiopia and Somalia.

UGANDA

• SITUATION

During October, no locusts were reported in the northeast between Abim (0242N/3339E) and Moruita (0153N/3445E).

• FORECAST

There remains a low risk that a small swarm or two from adjacent areas of Kenya could stray into Karamoja where it is likely to disperse without breeding.

EGYPT

• SITUATION

During September, isolated immature solitary adults were seen at a few places on the Red Sea coast between Abu Ramad (2224N/3624E) and Halaib (2213N/3638E). No locusts were seen elsewhere on the coast and subcoastal areas north to El Sheikh El Shazly (2412N/3438E) and in the Lake Nasser area near Tushka (2247N/3126E), Abu Simbel (2219N/3138E) and Garf Husein (2317N/3252E). During October, small-scale breeding occurred in Wadi Diib to the west of Halaib near the Red Sea coast in the southeast where solitary hoppers and immature solitary adults were present. No locusts elsewhere along the Red Sea coast south of Marsa Alam (2504N/3454E), near Lake Nasser in the Tushka and Abu Simbel areas, and in the northwest near Salum (3131N/2509E).

• FORECAST

Locust numbers may increase slightly on the Red Sea coast in the southeast where breeding could occur in areas that receive rainfall.

SAUDI ARABIA

• SITUATION

During October, mainly late instar hopper groups and bands were present on the southern Red Sea coast north of Jizan (1656N/4233E) that fledged and formed groups of immature adults. Earlier instar hoppers, groups and bands were present between Qunfidah (1909N/4107E) and Lith (2008N/4016E) where hatching started at the end of last month. By the end of October, locust numbers were reported as declined along the coast. No locusts were seen north of Lith to Bader (2346N/3847E). Ground teams treated 21 290 ha.

• FORECAST

Mature adult groups are likely to form north of Jizan where another generation of breeding could commence from late November onwards. A few adult groups could also form north of Qunfidah and breed in December. Breeding is likely to extend to other coastal areas that receive good rains.

YEMEN

• SITUATION

During October, late instar hopper bands persisted in the interior near Al Hazm (1610N/4446E) until about mid-month. Immature adult groups and swarms formed mainly near Al Hazm while immature adults and groups were present also from Bayhan (1452N/4545E) to Ataq (1435N/4649E), Mayfa'a (1416N/4735E), and Shabwah (1522N/4700E). Some swarms moved through the central highlands near Sana'a (1521N/4412E) towards the Red Sea coast while others were seen further flying south in the highlands east of Ibb (1358N/4411E) and Ad Dali (1341N/4443E), and near Al Baydha (1405N/4542E). On the Red Sea coast, hatching at the beginning of the month caused additional hopper bands to form in the north between Al Zuhrah (1541N/4300E) and Suq Abs (1600N/4312E) where late instar bands were already present that gave rise to immature adult groups and swarms. Scattered immature and mature adults were also present on the Tihama from Zabid (1410N/4318E) to Suq Abs. Ground teams treated 4 609 ha.

• FORECAST

Locust infestations will decline in the interior but increase on the Red Sea coast as another generation of breeding occurs, giving rise to more hopper bands and swarms. Breeding will also occur on the southern coast near Aden if rains fall.

OMAN

• SITUATION

During October, isolated immature solitary adults were present on the plateau near Thumrait (1736N/5401E) in the southern region of Dhofar early in the month. No locusts were seen elsewhere in Dhofar, eastern coastal areas, and in the north near Adam (2223N/5731E), Nizwa (2255N/5731E), Buraimi (2415N/5547E), and Rustaq (2323N/5725E).

• FORECAST

No significant developments are likely.

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

• FORECAST

No significant developments are likely.

EASTERN REGION

IRAN

• SITUATION

During October, a small group of immature adults was seen on the 27th and 31st in the Bashagard Mountains north of Jask (2540N/5746E) near Gouharan (2636N/5753E) in Hormozgan province. These are likely to be remnants from earlier breeding. Ground teams treated 4 ha. No locusts were seen during surveys carried out in the southern provinces of Khuzestan, Kohgiluyeh, Bushehr, Fars, Hormozgan, Kerman, and Sistan-Baluchistan, and in the northeastern province of South Khorasan.

• FORECAST

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

PAKISTAN

• SITUATION

During October, a few mid-instar hopper groups were seen in Tharparkar south of Chachro (2507N/7015E) and along the Indus River near Hyderabad (2523N/6821E) at the beginning of the month. Scattered immature solitarious adults mixed with a few mature adults were present in Cholistan near Islamgarh (2751N/7048E). In the Lasbela Valley, a few immature adult groups were seen south of Uthal (2548N/6637E) on the 17th. Ground teams treated 220 ha. No locusts were seen elsewhere in Punjab, KP, Sindh, and in Baluchistan on the coast and in eastern interior.

• FORECAST

Locust numbers will continue to decline in summer breeding areas. A few small residual infestations may persist in Lasbela, and low numbers of adults may appear in Baluchistan. No significant developments are likely.

INDIA

• SITUATION

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

• FORECAST

No significant developments are likely.

AFGHANISTAN

• SITUATION

No locust reports were received during October.

• 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, 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

SWAC. 32nd session (virtual), 7–9 December 2020



Glossary of terms

The following special terms are used in the Desert Locust Bulletin when reporting locusts:

Non-gregarious adults and hoppers

Isolated (few)

- very few present and no mutual reaction occurring
- 0–1 adult/400 m foot transect (or less than 25/ha)

Scattered (some, low numbers)

- enough present for mutual reaction to be possible but no ground or basking groups seen
- 1–20 adults/400 m foot transect (or 25–500/ha)

Group

- forming ground or basking groups
- 20+ adults/400 m foot transect (or 500+/ha)

Adult swarm and hopper band sizes

Very small

- swarm: less than 1 km² • band: 1–25 m²

Small

- swarm: 1–10 km² • band: 25–2,500 m²

Medium

- swarm: 10–100 km² • band: 2,500 m² – 10 ha

Large

- swarm: 100–500 km² • band: 10–50 ha

Very large

- swarm: 500+ km² • band: 50+ ha

Rainfall

Light

- 1–20 mm

Moderate

- 21–50 mm

Heavy

- more than 50 mm

Summer rains and breeding areas

- July–September/October
- Sahel of West Africa, Sudan, western Eritrea; Indo-Pakistan border

Winter rains and breeding areas

- October–January/February
- Red Sea and Gulf of Aden coasts; northwest Mauritania, Western Sahara

Spring rains and breeding areas

- February–June/July
- Northwest Africa, Arabian Peninsula interior, Somali plateau, Iran/Pakistan border

Other reporting terms

Breeding

- The process of reproduction from copulation to fledging

Recession

- Period without widespread and heavy infestations by swarms

Remission

- Period of deep recession marked by the complete absence of gregarious populations

Outbreak

- A marked increase in locust numbers due to concentration, multiplication and gregarisation which, unless checked, can lead to the formation of hopper bands and swarms

Upsurge

- A period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to-gregarious breeding in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions

Plague

- A period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously

Decline

- A period characterised by breeding failure and/or successful control leading to the dissociation of swarming populations and the onset of recessions; can be regional or major

Warning levels

Green

- *Calm*. 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

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>

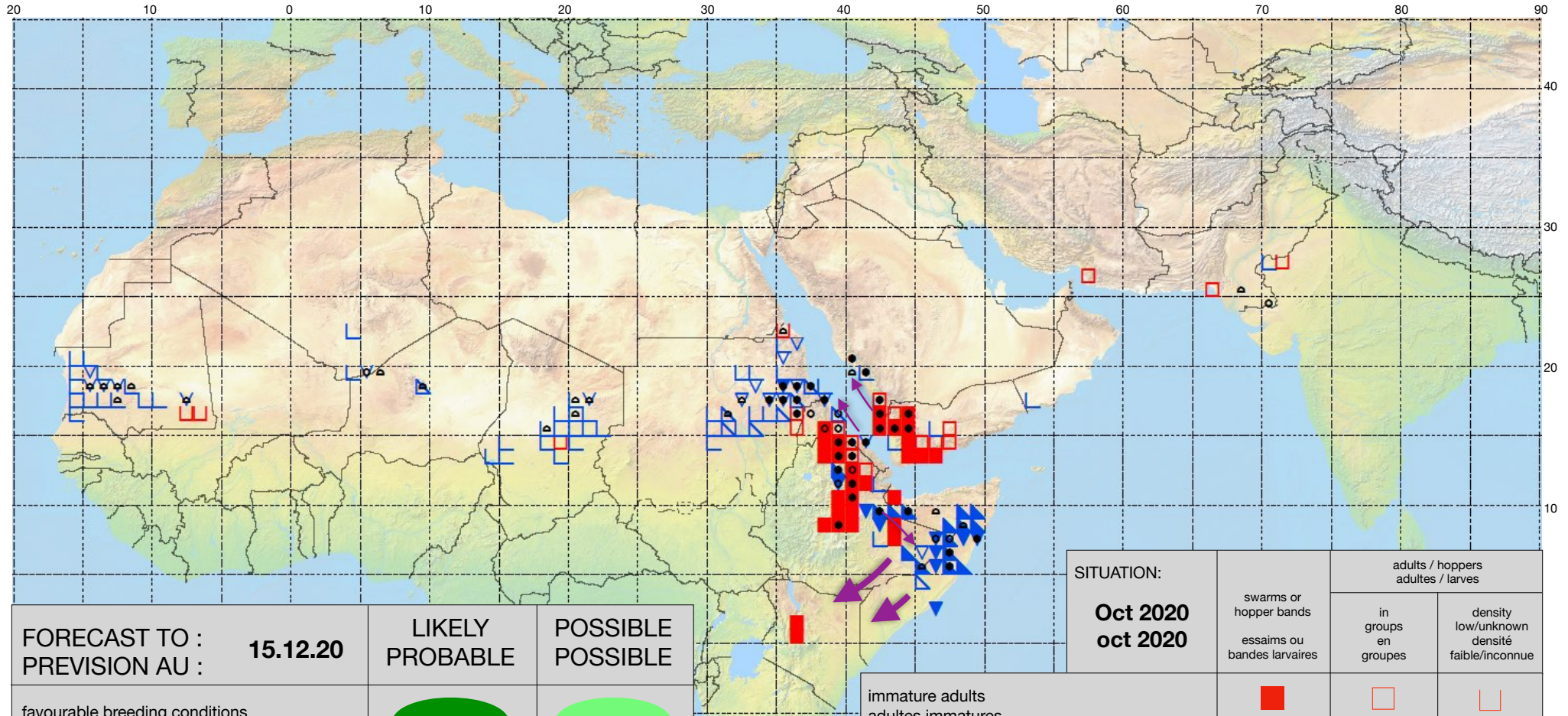
FAOLocust Slideshare. Locust presentations and photos
<http://www.slideshare.net/faolocust>









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





















Desert Locust Summary

Criquet pèlerin – Situation résumée



FORECAST TO : PREVISION AU :	15.12.20	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favorables à la reproduction			
major swarm(s) essaim(s) important(s)			
minor swarms(s) essaim(s) limité(s)			
non swarming adults adults non essaimant			

SITUATION: Oct 2020 oct 2020	swarms or hopper bands essaims ou bandes larvaires	adults / hoppers adultes / larves	
		in groups en groupes	density low/unknown 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)			



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

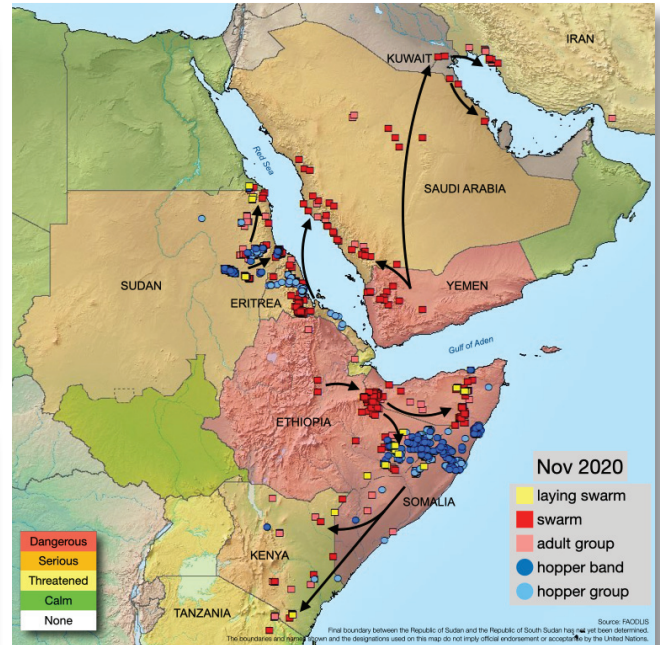
SITUATION. Swarms move into eastern **Ethiopia** (85 382 ha treated) with widespread breeding and numerous hopper bands there and in central **Somalia** (30 323 ha), and mature swarms lay in northeast; local breeding in northwest **Kenya** (167 ha) as mature swarms arrive and lay in the east; swarmlet 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.

Telephone: +39 06 570 52420 (7 days/week, 24 hr)
E-mail: ecl@fao.org / faodlislocust@gmail.com

Internet: www.fao.org/ag/locusts
Facebook/Twitter: faolocust



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 22nd 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 23rd. 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 23rd 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 29th, 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 24th. 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 23rd 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 27th. 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 12th when a few continued to the Asir Mountains while others reached Riyadh (2439N/4642E) on the 17th, and the Iraq/Kuwait border on the 21st. The swarms then moved from Kuwait to the eastern coast on the 24th 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 21st, spreading to Mecca (2125N/3949E) and Bader (2346N/3847E). Swarms were seen in the Asir Mountains near Taif (2115N/4021E) on the 25th and east of Masturah (2309N/3851E) on the 26th. 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 1-4th. An immature swarm were seen near Suq Abs on the 10th, 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 27th. 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 24th, 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 2nd. 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 27–30th. 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 and 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 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. 32nd session (virtual), 14–16 December 2020

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 km²
- band: 1–25 m²

Small

- swarm: 1–10 km²
- band: 25–2,500 m²

Medium

- swarm: 10–100 km²
- band: 2,500 m² – 10 ha

Large

- swarm: 100–500 km²
- band: 10–50 ha

Very large

- swarm: 500+ km²
- band: 50+ ha

Rainfall

Light

- 1–20 mm

Moderate

- 21–50 mm

Heavy

- more than 50 mm

Summer rains and breeding areas

- July–September/October
- Sahel of West Africa, Sudan, western Eritrea; Indo-Pakistan border

Winter rains and breeding areas

- October–January/February
- Red Sea and Gulf of Aden coasts; northwest Mauritania, Western Sahara

Spring rains and breeding areas

- February–June/July
- Northwest Africa, Arabian Peninsula interior, Somali plateau, Iran/Pakistan border

Other reporting terms

Breeding

- The process of reproduction from copulation to fledging

Recession

- Period without widespread and heavy infestations by swarms

Remission

- Period of deep recession marked by the complete absence of gregarious populations

Outbreak

- A marked increase in locust numbers due to concentration, multiplication and gregarisation which, unless checked, can lead to the formation of hopper bands and swarms

Upsurge

- A period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to-gregarious breeding in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions

Plague

- A period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously

Decline

- A period characterised by breeding failure and/or successful control leading to the dissociation of swarming populations and the onset of recessions; can be regional or major

Warning levels

Green

- *Calm*. 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

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>

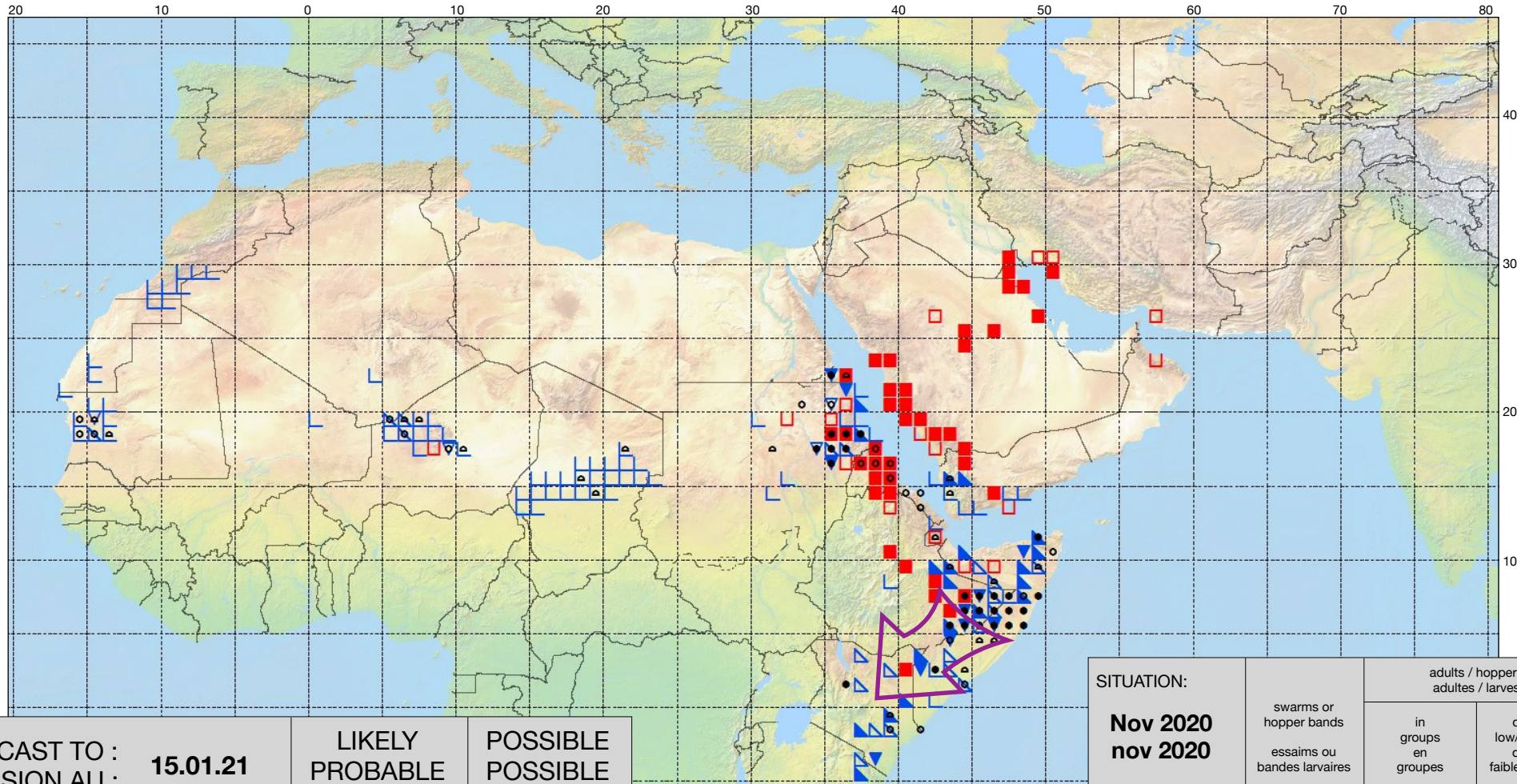
FAOLocust Slideshare. Locust presentations and photos
<http://www.slideshare.net/faolocust>

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



Desert Locust Summary

Criquet pèlerin – Situation résumée



FORECAST TO : PREVISION AU :	15.01.21	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favorables à la reproduction			
major swarm(s) essaim(s) important(s)			
minor swarms(s) essaim(s) limité(s)			
non swarming adults adults non essaimant			

SITUATION: Nov 2020 nov 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)			



Desert Locust Bulletin

General situation during December 2020 Forecast until mid-February 2021

WESTERN REGION: CALM

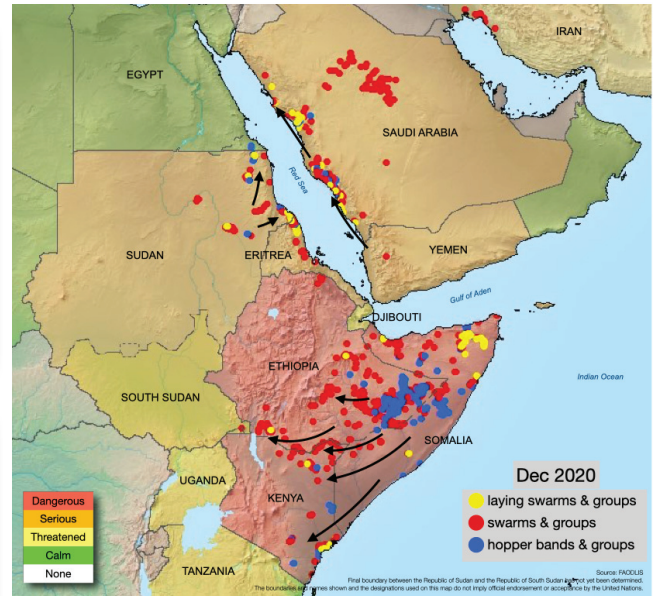
SITUATION. Control operations against groups that formed from previous breeding in **Mauritania** (485 ha treated), **Niger** (2 470 ha), and **Algeria** (43 ha); adult groups in **Mali**; isolated adults in **Chad** and **Morocco**.
FORECAST. Small infestations will persist in **Mauritania**, **Mali**,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



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 solitary 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 solitary 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 solitary hoppers and scattered immature and mature solitary 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 solitary 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 solitary 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 solitary adults were present in the southern part of the Western Sahara between Aousserd (2233N/1419W) and the Mauritania border. Immature and mature solitary 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 (1813N/3811E) 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 solitary 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 solitary 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 solitary adults were present south of Halaib (2213N/3638E) while isolated mature solitary 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 solitary 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 solitary 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 solitary adults persisted between Am Rijja (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 solitary 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 km²
- band: 1–25 m²

Small

- swarm: 1–10 km²
- band: 25–2,500 m²

Medium

- swarm: 10–100 km²
- band: 2,500 m² – 10 ha

Large

- swarm: 100–500 km²
- band: 10–50 ha

Very large

- swarm: 500+ km²
- band: 50+ ha

Rainfall

Light

- 1–20 mm

Moderate

- 21–50 mm

Heavy

- more than 50 mm

Summer rains and breeding areas

- July–September/October
- Sahel of West Africa, Sudan, western Eritrea; Indo-Pakistan border

Winter rains and breeding areas

- October–January/February
- Red Sea and Gulf of Aden coasts; northwest Mauritania, Western Sahara

Spring rains and breeding areas

- February–June/July
- Northwest Africa, Arabian Peninsula interior, Somali plateau, Iran/Pakistan border

Other reporting terms

Breeding

- The process of reproduction from copulation to fledging

Recession

- Period without widespread and heavy infestations by swarms

Remission

- Period of deep recession marked by the complete absence of gregarious populations

Outbreak

- A marked increase in locust numbers due to concentration, multiplication and gregarisation which, unless checked, can lead to the formation of hopper bands and swarms

Upsurge

- A period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to- gregarious breeding in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions

Plague

- A period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously

Decline

- A period characterised by breeding failure and/or successful control leading to the dissociation of swarming populations and the onset of recessions; can be regional or major

Warning levels

Green

- *Calm*. 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.ideo.columbia.edu/maproom/.Food_Security/.Locusts/index.html

IRI Greenness maps. Dynamic maps of green vegetation evolution every decade
http://iridl.ideo.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>

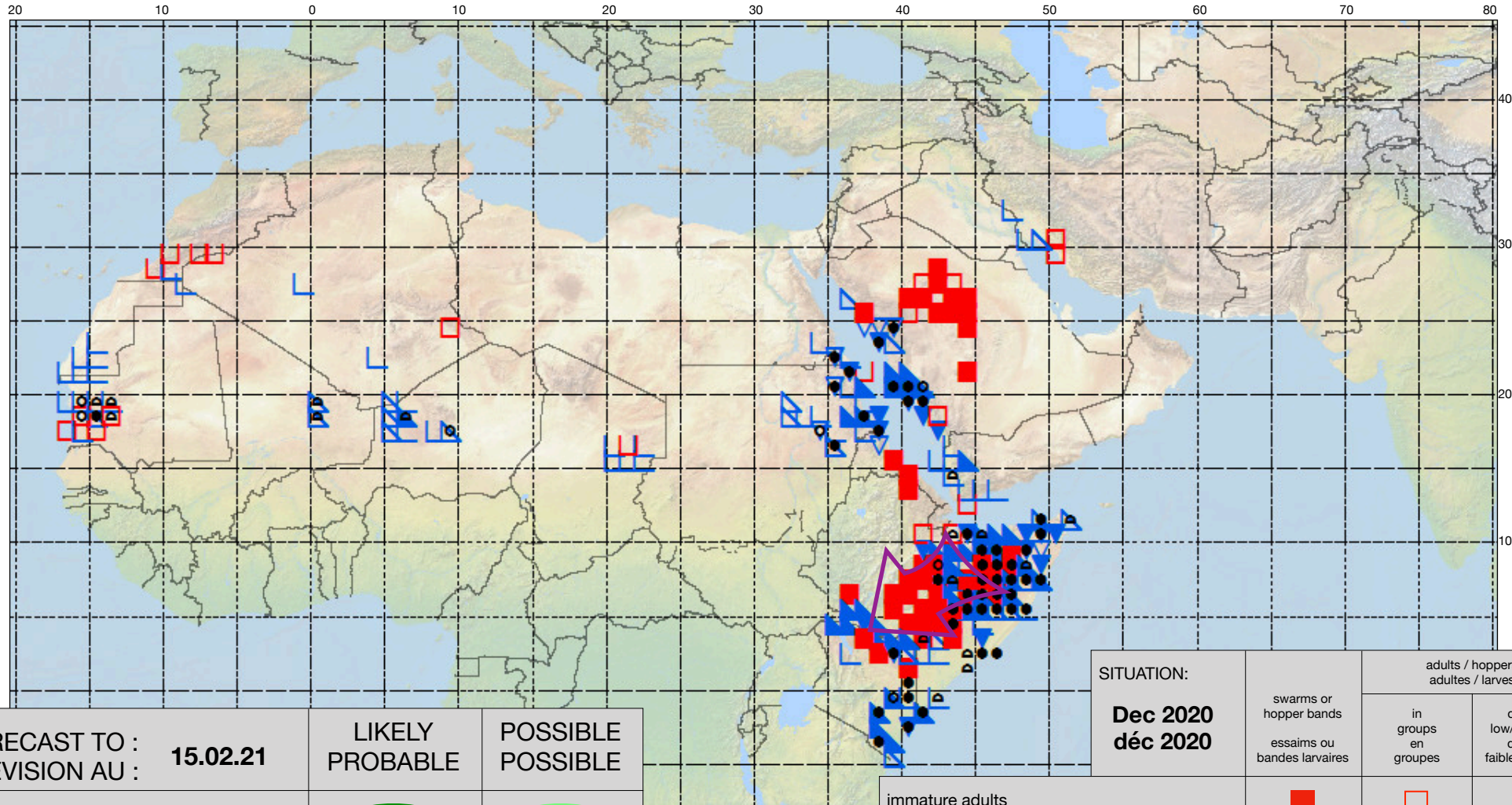
eLERT. Online database of resources and technical specifications for locust emergencies
<http://sites.google.com/site/elertsite>




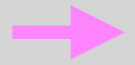


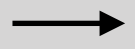


















Desert Locust Summary

Criquet pèlerin – Situation résumée

507 



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

SITUATION: 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)	