

Desert Locust Bulletin

General situation during March 2019
Forecast until mid-May 2019

WESTERN REGION: CALM

SITUATION. Local breeding commenced in eastern **Algeria**. There were unconfirmed reports of hoppers and adults in northern **Mali**.

FORECAST. Small-scale breeding will occur south of the Atlas Mountains in **Morocco** and **Algeria**, but locust numbers will remain low. Limited breeding may continue in northern **Mali**.



CENTRAL REGION: THREAT

SITUATION. Control operations continued against second-generation breeding on the Red Sea coast of **Sudan**, **Eritrea**, **Egypt** and **Saudi Arabia** where hopper and adult groups, hopper bands and swarms formed. Breeding continued in eastern **Yemen** and started in the interior of Saudi Arabia.

FORECAST. Breeding will decline on the Red Sea coast but increase in the interior of **Saudi Arabia** where hopper groups and bands are likely to form. Adults may appear and breed in the Nile Valley of northern **Sudan**. Adult groups and perhaps a few small swarms will move from eastern **Yemen** to Hadhramaut and the central interior of Yemen, and breed if rains fall.

Situation improving on Red Sea coast

The Desert Locust situation was slowly improving along both sides of the Red Sea during March as a result of intensive control operations that treated more than 80 000 ha and due to drying conditions. Nevertheless, second-generation breeding continued in those areas of Sudan and Saudi Arabia where ecological conditions remained favourable, giving rise to additional hopper and adult groups, bands and a few swarms. Some adult groups moved to the spring breeding areas in the interior of Saudi Arabia and laid eggs. In southwest Asia, adult groups and a few swarms were breeding on the southern coast of Iran and hatching commenced at the end of March. Adult groups and at least one swarm appeared in adjacent areas of southwest Pakistan in mid-March where they were laying eggs. Control operations were in progress in both countries. Elsewhere, local breeding occurred in eastern Algeria. During the forecast period, locust numbers will decline along both sides of the Red Sea but will increase in the spring breeding areas in the interior of Saudi Arabia, and coastal and interior areas of southern Iran and southwest Pakistan where hopper groups and bands are expected to form. Some of these could eventually form adult groups and perhaps a few small swarms by late May. Adults groups may also appear in the Nile Valley in northern Sudan and breed near cropping areas. Smaller-scale breeding will occur in areas south of the Atlas Mountains in Morocco and Algeria that receive rainfall.

EASTERN REGION: CAUTION

SITUATION. Control operations were undertaken in southern **Iran** and southwest **Pakistan** where breeding by adult groups and a few swarms was in progress.

FORECAST. Breeding will continue in **Iran** and **Pakistan**, giving rise to hopper groups and bands.

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 March 2019

Conditions were becoming dry in the winter breeding areas along both sides of the Red Sea except in northwest Saudi Arabia. Good rains fell in the spring breeding areas of eastern Saudi Arabia, southern Iran and southwest Pakistan.

WESTERN REGION

Very little rain fell during March except for a few light showers in some areas of the central Sahara in Algeria. Consequently, ecological conditions remained generally dry and unfavourable for breeding except for Morocco, south of the Atlas Mountains in parts of the Draa and Ziz-Ghris valleys near the Algerian border, in Wadi Sakia El Hamra, and in Algeria near the edges of irrigated perimeters in the Adrar Valley in the central Sahara, and in the east near Illizi.

CENTRAL REGION

Very little rain fell during March in winter breeding areas along both sides of the Red Sea except for light to moderate showers on the northern coast of Saudi Arabia. Consequently, vegetation remained green on the northern coast from Yenbo to Al Wajh but was drying out elsewhere on the coastal plains along both sides of the Red Sea. Good rains fell in the spring breeding areas of the interior of Saudi Arabia during the last decade of the month from east of Riyadh to the Persian Gulf while vegetation was already green between Gassim and Hail. Although light showers fell at times in northern Oman, breeding conditions remained generally unfavourable.

EASTERN REGION

Light to moderate rains fell along the coast of southern Iran and southwest Pakistan during March. Rainfall was particularly heavy during the second and third decades between Bushehr and Bandar Abbas in Iran. Light rain fell in the adjacent interior areas of both countries. Consequently, ecological conditions were favourable for breeding in nearly all coastal areas of Iran and were improving in the interior areas of Jaz Murian as well as coastal and interior areas of Baluchistan, Pakistan.

Pakistan	345 ha (March)
Saudi Arabia	45 705 ha (March)
Sudan	25 950 ha (March)



Desert Locust Situation and Forecast

WESTERN REGION

MAURITANIA

• SITUATION

No locust activity was reported during March.

• FORECAST

No significant developments are likely.

MALI

• SITUATION

On 4–12 March, there were unconfirmed reports by nomads, travellers and locals of immature and mature solitary adults mixed with late-instar solitary hoppers present in the north at three places in the Tilemsi Valley to the west of Aguelhoc (1927N/0052E).

• FORECAST

Low numbers of locusts will persist in parts of the Adrar des Iforas. No significant developments are likely.

NIGER

• SITUATION

No locust activity was reported during March.

• FORECAST

Isolated adults may be present in parts of the Air Mountains. No significant developments are likely.

CHAD

• SITUATION

No locust activity was reported during March.

• FORECAST

No significant developments are likely.

SENEGAL

• SITUATION

No locust activity was reported during March.

• 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.



Area Treated

Nearly 86 000 ha were treated during March.

Egypt	4 021 ha (March)
Eritrea	7 115 ha (1–18 March)
Iran	100 ha (24–28 Feb)
	2 760 ha (1–26 March)

ALGERIA

• SITUATION

During March, low numbers of mature solitary adults were present in the east near Illizi (2630N/0825E) where a few adults were copulating, and at one place in the Central Sahara near Reggane. No locusts were seen in the northwest between Bechar (3135N/0217W) and Beni Abbes (3011N/0214W), in the Adrar (2753N/0017W) valley, and in the southern Sahara west of Tamanrasset (2250N/0528E).

• FORECAST

Small-scale hatching will occur near Illizi and limited breeding is expected to occur in other areas of the Sahara that receive rainfall, causing locust numbers to increase slightly.

MOROCCO

• SITUATION

No surveys were carried out and no locusts were reported in March.

• FORECAST

Low numbers of adults are almost certainly present and breeding on a small scale along the Draa Valley and W. Sakia El Hamra. Hatching may have commenced about mid-March and will continue during the forecast period, causing locust numbers to increase slightly.

LIBYA

• SITUATION

No reports were received in March.

• FORECAST

Small-scale breeding is likely to occur between Ghat and Ghadames if rains fall.

TUNISIA

• SITUATION

No locust activity was reported during March.

• FORECAST

No significant developments are likely.

CENTRAL REGION

SUDAN

• SITUATION

During the first week of March, several immature swarms were reported on the southern coastal plains of the Red Sea along the Eritrean border near Karora (1745N/3820E). Second-generation breeding continued along the coast from Karora to Bir Salalah (2034N/3702E) where adult groups were copulating, and hatching occurred during the first half of the month. Consequently, additional hopper groups and bands as well as groups of immature and mature adults formed throughout the month. Control operations treated 25 950 ha during March of which 13 940 ha were by air. In the northeast, scattered immature and mature solitary adults were present in a few places along Wadi Oko/Diib.

• FORECAST

Late second-generation hatching and the formation of hopper groups and bands, adult groups and perhaps a few small swarms are likely to continue during April. Thereafter, the situation is expected to improve along the Red Sea coast due to control operations, drying conditions and emigration to the Nile Valley or east across the Red Sea by any infestations that are not detected or treated.

ERITREA

• SITUATION

During March, the situation improved dramatically along the Red Sea coastal plains due to control operations and drying conditions. Consequently, only residual infestations of immature adults and groups, some of which were maturing, were present between Massawa (1537N/3928E) and Embere (1628N/3856E) and, to a lesser extent, near Mehimet (1723N/3833E) and the Sudan border. Ground teams treated 7 115 ha on 1–18 March.

• FORECAST

No significant developments are likely.

ETHIOPIA

• SITUATION

No surveys were carried out and no locusts were reported in March.

• FORECAST

No significant developments are likely.

DJIBOUTI

• SITUATION

No surveys were carried out and no locusts were reported in March.

• FORECAST

No significant developments are likely.

SOMALIA

• SITUATION

No reports were received in March.

• FORECAST

No significant developments are likely.

EGYPT

• SITUATION

During the first half of March, egg-laying by mature adult groups and hatching continued on the Red Sea coastal plains and in Wadi Diib between Abu Ramad (2224N/3624E) and Halaib (2213N/3638E), causing hopper groups and bands to form in a few places. By the end of the month, fledging had started in some areas. Ground control operations treated 4 021 ha during March. Mature solitary adults were present in coastal and subcoastal areas near Berenice (2359N/3524E) and El Sheikh El Shazly (2412N/3438E) while no locusts were seen between Marsa Alam (2504N/3454E) and Hurgkada (2717N/3347E),

and near Lake Nasser. In the southwest, numerous maturing solitary adults were seen at Jebel Uweinat (2154N/2458E) near the Libya/Sudan border.

• **FORECAST**

Fledgling will continue during April and, as vegetation dries out, a limited number of immature adult groups and perhaps a few very small swarms could form between Abu Ramad and Halaib. Thereafter, the situation is expected to improve due to control operations and drying conditions.

SAUDI ARABIA

• **SITUATION**

During March, second-generation laying by mature adult groups and swarms continued on the northern Red Sea coast near Umm Lajj (2501N/3716E) in the first week, giving rise to additional hopper groups and bands. Elsewhere on the Red Sea coastal plains, hopper groups and bands and immature adult groups were present between Lith (2008N/4016E) and Umm Lajj. One immature swarm formed on the 20th near Thuwal (2215N/3906E) while some of the adult groups along the coast became mature from mid-month onwards. In the spring breeding areas of the interior, a mature swarm was seen copulating on the 20th west of Jubail (2700N/4939E) and mature adult groups were copulating to the northwest and southeast of Gassim (2621N/4358E). Control operations treated 45 705 ha during March of which 4 300 ha were by air.

• **FORECAST**

The situation on the Red Sea coast is expected to improve due to control operations, drying conditions and emigration to spring breeding areas. Nevertheless, adult groups and perhaps a few small swarms are likely to form from any infestations that are not detected or treated and move to the interior between Gassim, Hail and Jubail where one generation of breeding is likely to lead to the formation of hopper groups and small bands.

YEMEN

• **SITUATION**

During 1–3 March, no locusts were seen on the southern coastal plains near Aden (1250N/4503E). In the eastern province of Al Maharah, early instar hopper groups and bands were reported on the 21st in Wadi Seaf (1618N/5100E) where breeding occurred during February. No surveys were carried out in Wadi Hadhramaut or the interior.

• **FORECAST**

Hopper groups and bands are likely to be present in the eastern region between Thamud and the Omani border, giving rise to adult groups and a few small swarms that are expected to move to Wadi Hadhramaut, Shabwah and Marib where they could eventually breed in areas that receive rainfall.

OMAN

• **SITUATION**

During March, isolated immature solitary adults were present at one place on the Batinah coast near Jamma (2333N/5733E). No locusts were seen elsewhere on the northern coast, in the northern interior near Buraimi (2415N/5547E), Nizwa (2255N/5731E), Ibra (2243N/5831E) and to the west and east of the Wahiba Sands.

• **FORECAST**

Small-scale breeding will occur in areas that receive rainfall in the northern interior and on the Batinah coast, causing locust numbers to increase slightly.

JORDAN

• **SITUATION**

No locusts were reported during March.

• **FORECAST**

No significant developments are likely.

ISRAEL

• **SITUATION**

No locusts were reported during March.

• **FORECAST**

No significant developments are likely.

BAHRAIN, IRAQ, KENYA, KUWAIT, LEBANON, PALESTINE, QATAR, SOUTH SUDAN, SYRIA, TANZANIA, TURKEY, UAE AND UGANDA

• **FORECAST**

No significant developments are likely.

EASTERN REGION

IRAN

• **SITUATION**

During March, breeding continued on the southeast coast where a mature swarm was seen copulating near Minab (2708N/5705E) on the 3rd, adult groups laid eggs near Chabahar (2517N/6036E) throughout the month, and solitary adults continued to lay eggs on the southwest coast near Bushehr (2854N/5050E) and Bander-e Lengheh (2634N/5452E). Hatching started during the second week and, by the 25th, groups of first to third instar hoppers formed in the Nakhilou area (2652N/5329E) to the west of Bander-e Lengheh. During the last week, hatching of solitary hoppers commenced on the southeast coast west of Chabahar. Ground control operations treated 2 760 ha on 1–26 March.

• **FORECAST**

Breeding will continue on the southern coastal plains from Bushehr to Chabahar where further hatching is expected between Jask and Chabahar with the possibility of hoppers forming groups and small bands. Fledging is expected to start by mid-April initially on the southwest coast, followed by the southeast, which could give rise to immature groups and perhaps a few small swarms. Breeding is likely to extend to the Jaz Murian Basin.

PAKISTAN

• SITUATION

During March, isolated immature and mature solitary adults first appeared on the Baluchistan coast in the Uthal (2548N/6637E) area west of Karachi. On the 16th, a small mature swarm was seen copulating on the coast at Pasni (2515N/6328E). During the following week, an immature adult group and several groups of mature adults were reported in the Kulanch Valley to the west of Pasni. The mature adults were copulating and laying eggs. Ground teams treated 345 ha. No locusts were seen between Uthal and Khuzdar (2749N/6639E) and along the coast east of Pasni.

• FORECAST

Hatching will commence in early April in the Kulanch Valley, giving rise to hopper groups and a few small hopper bands that will start to fledge at the end of the forecast period and form immature adult groups. Additional breeding will occur in coastal and interior areas that receive rainfall. Local infestations may be further supplemented by additional adults, small groups and perhaps a swarm arriving from adjacent areas of southeast Iran.

INDIA

• SITUATION

No locusts were seen in Rajasthan and Gujarat during March.

• FORECAST

No significant developments are likely.

AFGHANISTAN

• SITUATION

No reports received.

• 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). 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/ECLD Desert Locust Information Service (eclod@fao.org). Reports received by the first two days of the new month will be included in the FAO Desert Locust Bulletin for the current month; 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.

Calendar

The following activities are scheduled or planned:

- **CLCPRO.** 9th Regional workshop on Desert Locust information management in the Western Region, Tunisia, Tunisia (8–11 April)
- **CLCPRO.** Training of master trainers on Desert Locust survey techniques, Agadir, Morocco (21–27 April)
- **SWAC.** 25th Desert Locust joint survey in the spring breeding areas of Iran and Pakistan (5 April – 8 May)
- **CRC/SWAC.** 11th Interregional workshop for Desert Locust Information Officers, Addis Ababa, Ethiopia (24–28 June)
- **CLCPRO.** 14th Executive committee meeting, Agadir, Morocco (24–28 June)
- **DLCC.** 41st Session [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.



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>

RAMSESV4 training videos. A set of basic training videos are available on YouTube
<https://www.youtube.com/playlist?list=PLf7Fc-oGpFHGyzXqE22j8-mPDhhGNq5So>

RAMSESV4 and eLocust3. Installer, updates, videos, inventory and support
<https://sites.google.com/site/rv4elocust3updates/home>

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

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

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

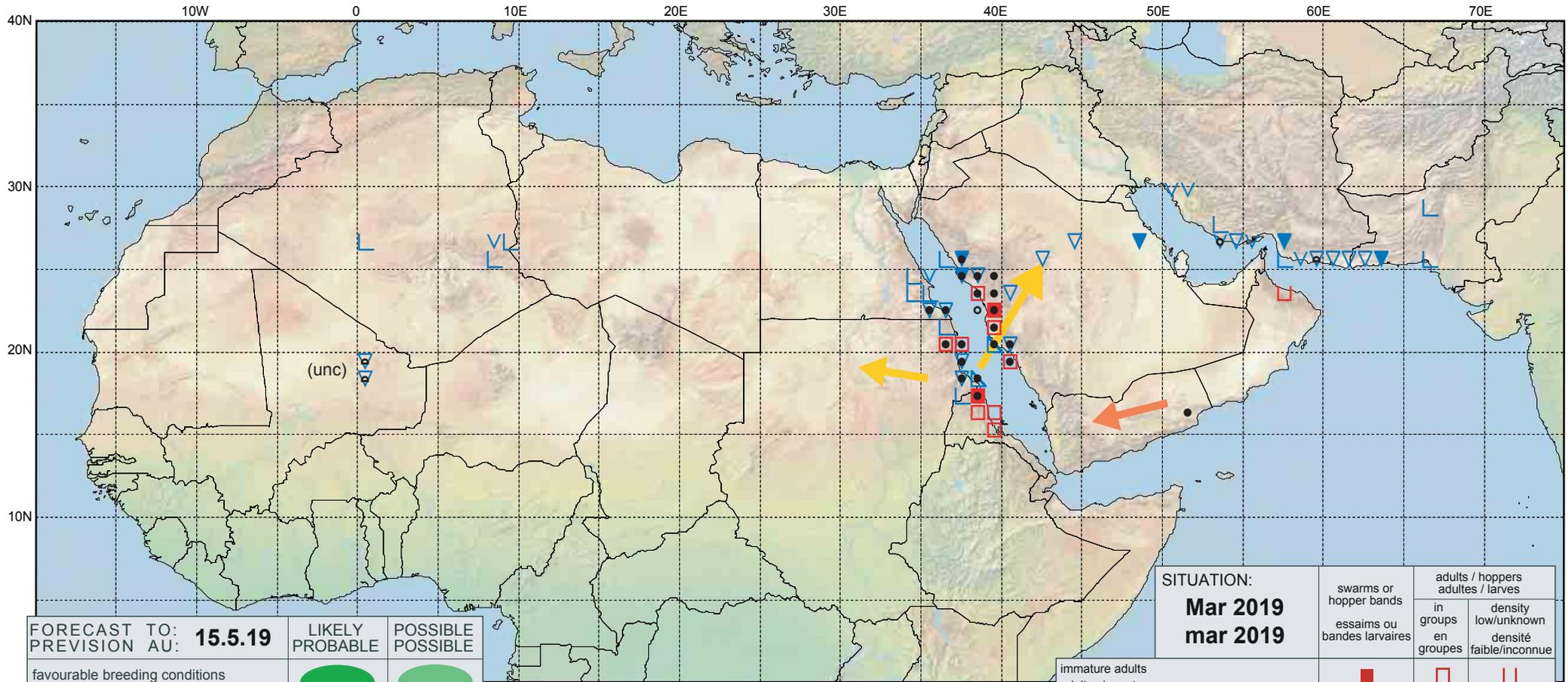
eLERT. Online database of resources and technical specifications for locust emergencies
<http://sites.google.com/site/elertsite>



Desert Locust Summary

Criquet pèlerin - Situation résumée

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FORECAST TO:
PREVISION AU: **15.5.19**

LIKELY
PROBABLE

POSSIBLE
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:

Mar 2019
mar 2019

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)	◼	◼	◼