



Desert Locust Bulletin

General situation during February 2019
Forecast until mid-April 2019

WESTERN REGION: CALM

SITUATION. Local breeding commenced south of the Atlas Mountains in **Morocco**. There were reports of small-scale breeding 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

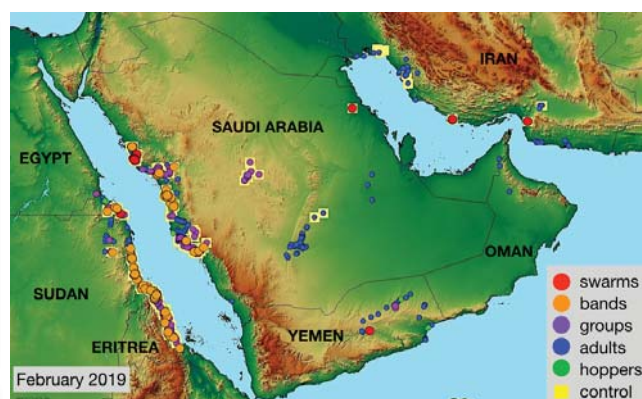
SITUATION. Control operations continued against a second-generation of breeding on the Red Sea coast of **Sudan**, **Eritrea**, **Egypt** and **Saudi Arabia** where hopper and adult groups, hopper bands and swarms formed. Breeding continued in eastern **Yemen**.

FORECAST. Any residual adult groups and swarms that are not detected or controlled along the Red Sea coast will move to the interior of **Saudi Arabia** and the Nile Valley in northern **Sudan** and breed. 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.

EASTERN REGION: CAUTION

SITUATION. Control operations were mounted against adult groups and a few small swarms on the southern coast of **Iran** where laying took place.

FORECAST. Hatching and the formation of hopper groups and perhaps a few bands will occur in southern **Iran**. Small-scale breeding will commence in western **Pakistan**.



Control operations continue along the Red Sea coast

The Desert Locust situation remained serious during most of February along both sides of the Red Sea as second-generation breeding continued in Egypt, Sudan, Eritrea and Saudi Arabia, causing the formation of additional groups of hoppers and adults, bands and swarms. Control operations continued in all countries, treating 80 000 ha. By the end of the month, there were indications that the situation was improving as infestations declined in some areas, mainly in Eritrea, due to the intensive control operations and drying ecological conditions. This will continue during the forecast period as vegetation dries out further along both sides of the Red Sea where a few adult groups and perhaps small swarms are likely to form from residual populations that were not detected or could not be treated. These populations are expected to migrate to spring breeding areas in the interior of Saudi Arabia and, to a lesser extent, the Nile Valley in northern Sudan. One generation of breeding is expected to occur in these areas between March and June, and intensive monitoring and control efforts will be required by the affected countries. Breeding continued in eastern Yemen on the edge of the Empty Quarter in areas that received good rain from cyclones Mekunu and Luban in May and October respectively. From there, adults and at least one swarm moved to cropping areas in Wadi Hadhramaut. In Iran, control operations were mounted against adult groups and a few small swarms that were laying eggs along the southern coast. The situation remained calm in the Western Region.

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

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Weather & Ecological Conditions in February 2019

Vegetation began drying out along parts of the Red Sea coastal plains. Limited rain fell in parts of the spring breeding areas in the Central Region and southwest Asia.

WESTERN REGION

No significant rain fell during February and conditions remained generally dry throughout the region except for small patches of green vegetation in parts of the spring breeding area south of the Atlas Mountains in the Draa and Ziz-Ghris valleys of Morocco near the Algerian border, and in the Adrar Valley in the central Sahara of Algeria.

CENTRAL REGION

Rainfall declined during February in winter breeding areas along both sides of the Red Sea. Light showers fell on the coast of Eritrea and adjacent southern coastal areas of Sudan and on the coast of Saudi Arabia near Qunfidah. Moderate rains fell on the northern coast in Saudi Arabia between Yenbo and Umm Lajj. As a result, vegetation began drying out on the Red Sea coastal plains in Eritrea where it was mostly dry by the end of the month. In Egypt, large areas were drying out near Shalatyn, Egypt and adjacent areas of Wadi Oko/Diib in northeast Sudan. Vegetation was also starting to dry out on the central Red Sea coast in Saudi Arabia south of Jeddah and near Tokar Delta in Sudan. However, vegetation remained green and soil was moist on the northern coast of Saudi Arabia and on the southern coastal plains in Sudan. In the spring breeding areas in the interior of Saudi Arabia, light rains fell on 8 February between Gassim and Tabuk. In Yemen, vegetation remained green on the plateau in the eastern region between Thamud and the Oman border. Mainly dry conditions prevailed in Oman.

EASTERN REGION

Light to moderate rains fell at times during the first half of February in a few places on the southern coast of Iran between Bushehr and Chabahar as well as inland areas of Jaz Murian. Consequently, ecological conditions remained favourable for breeding along the coast from Bushehr to Bandar Abbas and were improving between Jask and Chabahar, and in Jaz Murian. In southwest Pakistan, good rains fell on the 19–20th in coastal and interior areas of Baluchistan that are likely to cause ecological conditions to improve for breeding between Gwadar and Kharan.



Area Treated

Nearly 80 000 ha were treated during February.

Egypt	4 022 ha (February)
Eritrea	22 219 ha (February)
Iran	4 852 ha (3–23 February)
Saudi Arabia	18 468 ha (February)
Sudan	38 207 ha (February)



Desert Locust Situation and Forecast

WESTERN REGION

MAURITANIA

• SITUATION

No locust activity was reported during February.

• FORECAST

No significant developments are likely.

MALI

• SITUATION

Although surveys were not carried out during February, there were reports of immature and mature adults mixed with mainly fifth instar hoppers present in the north.

• FORECAST

Low numbers of locusts are likely to be present in parts of the Adrar des Iforas where small-scale breeding may occur.

NIGER

• SITUATION

No locust activity was reported during February.

• FORECAST

No significant developments are likely.

CHAD

• SITUATION

No locust activity was reported during February.

• FORECAST

No significant developments are likely.

SENEGAL

• SITUATION

No locust activity was reported during February.

• 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 February, no locusts were seen in the Adrar (2753N/0017W) valley of the central Sahara, and no locusts were reported elsewhere in the country.

• FORECAST

Low numbers of adults may be present near Wadi Amded in the south and near irrigated perimeters in the Adrar Valley. Small-scale breeding will occur in parts of the Central Sahara that receive rainfall, causing locust numbers to increase slightly.

MOROCCO

• SITUATION

During February, low numbers of immature and mature solitarious adults were present at a few places along W. Draa south of Fom El Hassan (2901N/0853W) and Tata (2944N/0758W) near the Algerian border. Some of the mature adults were seen copulating during the third decade. No locusts were seen throughout the Western Sahara.

• FORECAST

Small-scale breeding will occur along the Draa Valley with hatching from mid-March onwards. This will be supplemented by breeding in other areas that receive rainfall south of the Atlas Mountains, causing locust numbers to increase slightly.

LIBYA

• SITUATION

No reports were received in February.

• FORECAST

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

TUNISIA

• SITUATION

No locust activity was reported during February.

• FORECAST

No significant developments are likely.

CENTRAL REGION

SUDAN

• SITUATION

During February, second-generation breeding continued along the Red Sea coastal plains from Port Sudan (1938N/3713E) to the Eritrean border where groups of first-generation mature adults and at least two swarms continued to lay, hatching was in progress, hoppers formed groups and small bands, and fledglings formed small immature adult groups. One immature swarm was reported on the Eritrean border on the 22nd. Control operations treated 38 207 ha during of which 23 715 ha were by air. In the northeast, scattered immature and mature solitarious adults and a few immature and mature groups were present in Wadi Oko/Diib. In the Nile Valley, scattered mature adults

were seen laying on the 25th at one place north of Dongola (1910N/3027E).

• FORECAST

Second-generation hatching should end by mid-March on the Red Sea coast. Hoppers and adults that are not detected or treated are expected to form groups, small bands and perhaps a few swarms. This could be supplemented by adult groups and a few small swarms arriving on the southern coast from further south. As vegetation dries out, adult groups may move to the Nile valley and perhaps the Gasht valley near Kassala. Any swarms that escape detection and control are likely to emigrate east across the Red Sea. The situation is expected to improve on the Red Sea coast by the end of the forecast period due to control operations, drying vegetation and emigration.

ERITREA

• SITUATION

During February, a few late first-generation mature adult groups were present on the northern Red Sea coast near Mehimet (1723N/3833E). Second-generation breeding continued along the coast between Foro (1515N/3937E) and the Sudanese border where hoppers formed groups and small bands, and fledglings formed groups of immature adults. One immature swarm was reported on the 15th. By the end of the month, the situation was improving as infestations declined due to control operations and drying vegetation. Ground teams treated 22 219 ha in February.

• FORECAST

The situation is expected to improve further on the Red Sea coastal plains as a result of control operations, drying conditions and the possible emigration of any immature groups and perhaps a few small swarms that were not detected or could not be treated. Consequently, residual populations of hoppers and adults may still concentrate and form a few small groups in those areas that remain green early in the forecast period.

ETHIOPIA

• SITUATION

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

• FORECAST

No significant developments are likely.

DJIBOUTI

• SITUATION

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

• FORECAST

No significant developments are likely.

SOMALIA

• SITUATION

No reports were received in February.

• FORECAST

No significant developments are likely.

EGYPT

• SITUATION

During February, scattered first-generation late instar solitary hoppers were present at a few places on the coast between Abu Ramad (2224N/3624E) and Shalatyn (2308N/3535E) in the first decade. Numerous mature groups continued to appear throughout the month on the Red Sea coast and in Wadi Diib between Abu Ramad and Halaib (2213N/3638E) where they laid eggs. One swarm was seen laying on the 10th. Hatching commenced shortly after mid-month and second-generation hoppers formed small groups and bands. By the end of the month, some of the hoppers had reached second instar. Ground teams treated 4 022 ha. No locusts were present in the Lake Nasser area near Tushka (2247N/3126E), Abu Simbel (2219N/3138E) and Garf Husein (2317N/3252E).

• FORECAST

Second-generation breeding will continue with additional hatching until about mid-March and the formation of hopper groups and small bands. Any infestations that are not detected or controlled will start to fledge by the end of March, causing the formation of immature groups and perhaps a few small swarms.

SAUDI ARABIA

• SITUATION

During February, second-generation breeding continued along the Red Sea coast from Lith (2008N/4016E) to south of Al Wajh (2615N/3627E) where groups of adults and two swarms laid eggs and hoppers, groups and bands were present near Lith, between Thuwal (2215N/3906E) and Masturah (2309N/3851E), and near Yenbo (2405N/3802E). Control operations treated 18 468 ha during February of which 4 125 ha were by air. Residual populations of scattered immature and mature solitary adults were present on the western and northern edges of the Empty Quarter, and one copulating swarm was seen south to the northwest of Jubail (2700N/4939E) and south of Kuwait on the 24th. In the spring breeding areas of the interior, adult groups laid eggs between Zalim (2248N/4210E) and Gassim (2621N/4358E) during the first week.

• FORECAST

Hopper and adult groups, small bands and probably a few small swarms will continue to form on the Red Sea coast. As vegetation dries out on the coast, any adult groups or swarms that escape detection and control are expected to move to the spring breeding areas of the interior, mature and lay in areas that receive rainfall. This could

be supplemented by immature swarms arriving from the western side of the Red Sea from early March onwards.

YEMEN

• SITUATION

During February, breeding continued in the eastern province of Al Maharah on the plateau between Remah (1727N/5034E) and Hat (1719N/5205E) where adult groups were seen laying and solitary and *transiens* hoppers of all instars were present at densities up to 30 hoppers/m². Scattered immature and mature solitary adults were present throughout these areas as well as in W. Hadhramaut east of Sayun (1559N/4844E), north of W. Hadhramaut and on the coast near Al Ghaydah (1612N/5210E). Limited breeding occurred on the coast near Al Ghaydah. One mature swarm appeared in a few cultivated areas of W. Hadhramaut east of Sayun on the 26th. No locusts were seen elsewhere on the southern coast to Aden (1250N/4503E) or northwest of Thamud.

• FORECAST

Another generation of hatching is expected about mid-March that will cause hopper groups and perhaps a few small bands to form in the eastern region between Thamud and the Omani border. Adult groups and a few small swarms could start to form at the end of the forecast period and move to Wadi Hadhramaut, Shabwah and Marib, and eventually breed in areas that receive rainfall. Scattered locusts are likely to be present on the Red Sea coast, but breeding is likely to be limited unless further rains fall.

OMAN

• SITUATION

During February, isolated immature solitary adults were present at three places in the northern interior near Ibri (2314N/5630E) and Buraimi (2415N/5547E). No locusts were seen elsewhere in the northern interior, on the northern Batinah coast and on the Musandam Peninsula. In the southern region of Dhofar, no locusts were seen near the Yemen border at Maziuna (1750N/5239E) and on the edge of the Empty Quarter on 20–21 February.

• 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

During the last decade of February, no locusts were seen during surveys carried out in the southwest near the Gulf of Aqaba between Aqaba (2932N/3500E) and the border of Saudi Arabia.

• FORECAST

There is a very low risk of a few adult groups or perhaps a small swarm arriving in the south during periods of southerly winds.

ISRAEL

• FORECAST

There is a very low risk of a few adult groups or perhaps a small swarm arriving in the extreme south during periods of southerly winds.

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 February, several immature groups and swarms, and laying mature groups and swarms were seen on the southern coast in the Nakhilou area (2652N/5329E) to the west of Bander-e Lengheh (2634N/5452E) in the first week. Several mature groups and swarms were also seen laying further east in subcoastal areas near Minab (2708N/5705E) on the 23rd. Scattered mature solitarious adults were seen copulating on the southwest coast between Bushehr (2854N/5050E) and the Iraq border during the second and third weeks while scattered mature solitarious adults were present in the Jaz Murian Basin near Ghale Ganj (2731N/5752E) and on the southeast coast near Jask (2540N/5746E). Control operations treated 4 582 ha on 3–23 February of which 480 ha were by air.

• FORECAST

Breeding will occur on the southern coastal plains from Bushehr to Minab, causing hopper groups and perhaps small bands to form. Fledging is expected to start by the end of March that could give rise to immature groups and perhaps a few small swarms. Smaller-scale breeding is likely to occur in the Jaz Murian Basin and on the southeast coastal plains from Jask to Chabahar.

PAKISTAN

• SITUATION

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

• FORECAST

Low numbers of adults are expected to appear in coastal and interior areas of Baluchistan and breed on a small scale in areas that receive rainfall.

INDIA

• SITUATION

No locusts were seen in Rajasthan and Gujarat during February.

• 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/ECLO Desert Locust Information Service (eclo@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, Tunis, 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 (April)
- **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, 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>

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>

