



Desert Locust Bulletin

General situation during September 2019
Forecast until mid-November 2019

WESTERN REGION: CALM

SITUATION. A second generation of breeding occurred in **Chad** while small-scale breeding was underway in **Algeria**, **Niger** and probably southern **Mauritania** and northern **Mali**.

FORECAST. Breeding will decline in **Mali**, **Niger** and **Chad** but increase in northwest **Mauritania** where small groups may form, and possibly extend to Western Sahara in **Morocco**. Local breeding may occur in **Algeria**.



Situation remains threatening in eastern and central regions

The current situation deteriorated in Ethiopia and remains serious in Yemen, Pakistan and India. Swarms laid eggs in northeast Ethiopia that gave rise to hopper bands and aerial control operations were carried out. Once new swarms form, they could migrate south to the Ogaden and north to the Eritrean Red Sea coast where breeding already started. Hopper groups and bands formed on the Red Sea coast of Yemen and, to a lesser extent, in adjacent coastal areas of Saudi Arabia while breeding continued in the interior of Yemen. Control operations were undertaken in both countries. Unusually good rains that fell in Yemen will allow breeding to continue, mostly unchecked, in the interior and on the coast, which will cause a substantial increase in locusts. Breeding may eventually occur in central Oman where heavy rains fell from Cyclone Hikka. Ground control operations increased along both sides of the Indo-Pakistan border against swarms and a second generation of breeding that caused hopper groups and bands to form. As monsoon rains lasted longer than usual, infestations will persist in October. Any locusts that are not detected or controlled will form adult groups and small swarms that are expected to migrate west to southwest Pakistan and southeast Iran where rains are forecasted from October onwards. This would allow infestations to persist until temperatures warm up in the spring for breeding. Locust numbers remained low in West Africa despite two generations of breeding in Chad. Adults are expected to concentrate and breed in northwest Mauritania where unusually good rains fell.

CENTRAL REGION: THREAT

SITUATION. Hopper groups and bands formed in **Ethiopia** (4 636 ha treated) and on the Red Sea coast in **Yemen** (245 ha treated) and **Saudi Arabia** (4 195 ha treated). Early breeding occurred on the **Eritrean** coast (53 ha treated). Hopper bands persisted in the Yemen interior. Swarms were present in northern **Somalia**. Summer breeding was limited in **Sudan**.

FORECAST. Breeding on the coast and interior will cause a substantial increase in locust numbers in **Yemen**, supplemented by breeding in **Saudi Arabia**. Adult groups and swarms may form in **Ethiopia** and migrate to the Ogaden and **Eritrea**. Winter breeding will continue on the Red Sea coast in **Eritrea** and start in **Sudan**.

EASTERN REGION: THREAT

SITUATION. Control operations increased further in **India** (84 639 ha) and **Pakistan** (30 210 ha) against second-generation breeding. Isolated adults persisted in southern **Iran**.

FORECAST. As vegetation dries and breeding ends, adult groups and small swarms are expected to form along both sides of the Indo-Pakistan border and migrate to southwest **Pakistan** and southeast **Iran** where they are likely to remain and slowly mature.

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 September 2019

Good rains fell in the summer breeding areas of the northern Sahel in West Africa and continued later than normal along the Indo-Pakistan border. Heavy rains fell in Oman and Yemen from Cyclone Hikka while good rains fell in the Horn of Africa and in some of the winter breeding areas along the Red Sea.

WESTERN REGION

The Inter-Tropical Convergence Zone (ITCZ) remained unusually far north over Mauritania during September. It was some 350 km further north than usual in the northwest during the first decade, reaching Tasiast in the Inchiri region, 200 km further north in the Adrar region during the second decade, and more than 100 km further north than usual near Tidjikja in the last decade. Elsewhere, the ITCZ's position was nearly normal except in northeast Chad during the first decade when it was about 125 km further north than usual. During the third decade, the ITCZ began its seasonal retreat southwards over the Sahel. As a result, moderate to heavy rains fell mainly during the first two decades in western, northwest and northern Mauritania, northern Mali and Niger, and in central Chad. Ecological conditions were favourable for breeding in the northern Sahel of these countries and were improving in northwest and probably northern Mauritania. Some of the rains reached southern areas of Western Sahara in Morocco. In Northwest Africa, light to moderate rains fell in western Algeria and in the southeast where runoff from the Hoggar Mountains is likely to provide suitable ecological conditions for breeding near Tamanrasset, Illizi and Djanet.

CENTRAL REGION

The Inter-Tropical Convergence Zone (ITCZ) was slightly further south than normal over the interior of Sudan during the first decade of September; thereafter, it began its seasonal retreat southwards, reaching Sodiri and Khartoum by the end of the month. Consequently, light to moderate rains fell as far north as Mellit (North Darfur), Abu Uruq (North Kordofan) and Shendi (River Nile) as well as on the western side of the Red Sea Hills between Kassala and Derudeb, extending to the western lowlands in Eritrea. Ecological conditions were favourable for breeding throughout these areas. In the winter breeding areas, good rains fell on the Red Sea coast in Yemen, Eritrea and southwest Saudi Arabia where conditions were already favourable for breeding much earlier than normal. Breeding conditions were improving further north along the coast of Saudi Arabia to Lith and in subcoastal areas of Wadi Oko/Diib in northeast Sudan. On 24 September, Cyclone Hikka brought heavy rains to the central Oman coast, with up to 119 mm in the Duqm area, and in the interior of Al Waste

Governorate while light to moderate rains extended to the northern interior between Buraimi and Sharqiyah on the 25–27th. These rains are expected to give rise to favourable breeding conditions that may last several months but low temperatures may delay locust maturation. Heavy rains extended to some areas in the interior of Yemen, causing flooding in parts of Al Jawf, Marib, Shabwah and Lahij where favourable breeding conditions will persist. In the Horn of Africa, light to moderate showers fell in northeast and eastern Ethiopia, extending to the Somali plateau as far east as Burao in northern Somalia. Breeding conditions remained favourable in Ethiopia and were improving in northern Somalia.

EASTERN REGION

The retreat of the southwest monsoon from West Rajasthan, India normally begins in early September; however, it is more than one month delayed this year, the first time in 60 years. Consequently, above-average rains continued to fall, especially during the first two decades of the month and ecological conditions remained favourable for breeding along both sides of the Indo-Pakistan border. Monsoon rains in India were 10% above average this year and the highest in 25 years. In the spring breeding areas, light to moderate rains fell during the last decade of September near Turbat in southwest Pakistan and in the coastal mountains between Zarabad and Jaz Murian in southeast Iran.



Area Treated

Nearly 124 000 ha were treated during September compared to 86 000 ha in August.

Eritrea	53 ha (1–10 September)
Ethiopia	4 636 ha (September)
India	84 639 ha (September)
Pakistan	30 210 ha (September)
Saudi Arabia	4 195 ha (1–28 September)
Yemen	245 ha (September)



Desert Locust Situation and Forecast

WESTERN REGION

MAURITANIA

• SITUATION

During September, isolated immature and mature solitarious adults were present in the south and southeast from Oualata (1717N/0701W) to west of Tamchekket (1714N/1040W), near Kiffa (1638N/1124W), Tintane (1623N/1009W) and

Moudjeria (1752N/1219W), and in the northwest between Akjoujt (1945N/1421W) and Oujeft (2003N/1301W).

• FORECAST

Small-scale breeding will cause locust numbers to increase slightly in the south and southeast during October. Adults are expected to move to the west and northwest where they are likely to concentrate and breed in areas of recent rainfall. This will cause locust numbers to increase with the possibility of a few small groups forming.

MALI

• SITUATION

During September, no surveys were carried out in the north due to insecurity and no locusts were reported.

• FORECAST

Small-scale breeding is expected to be in progress and will continue in areas of recent rainfall in the Adrar des Iforas, Tilemsi Valley and Tamesna, causing locust numbers to increase slightly.

NIGER

• SITUATION

A late report indicated that isolated immature and mature adults were present on the northern Tamesna Plains west of Arlit (1843N/0721E) on 31 August. Adults were seen copulating at one place.

During September, isolated mature solitarious adults were present in a few places on the Tamesna Plains near In Abangharit (1754N/0559E).

• FORECAST

Small-scale breeding will continue in areas of recent rainfall, causing locust numbers to increase slightly on the Tamesna Plains and probably in the southeast Air Mountains.

CHAD

• SITUATION

During September, scattered immature and mature solitarious adults were present, mixed with low numbers of solitarious hoppers of all instars, primarily in the northeast near Fada (1714N/2132E) and, to a lesser extent, in the east near Kalait (1550N/2054E) and along the Sudanese border between Goz Beida (1242N/2125E) and Iriba (1507N/2215E). A second generation of breeding commenced as adults laid eggs near Fada and hatching started after mid-month.

• FORECAST

Despite a second generation of breeding, locust numbers are likely to remain low. Nevertheless, second-generation hoppers and adults could concentrate and perhaps form a few very small groups in the northeast once vegetation begins to dry out.

BURKINA FASO

• SITUATION

No reports were received during September.

• FORECAST

No significant developments are likely.

SENEGAL

• SITUATION

No locust activity was reported during September.

• 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 September, local breeding occurred in the central Sahara between Timimoun (2916N/0014E) and El Golea (3034N/0252E). Low numbers of mature solitarious adults were present in the east near Illizi (2630N/0825E), in the southern Sahara west of Tamanrasset (2250N/0528E) where laying was in progress, and along the Niger border near In Guezzam (1937N/0552E). A few immature solitarious adults were seen near Djanet (2434N/0930E).

• FORECAST

Low numbers of locusts may persist near agricultural areas in the central Sahara where small-scale breeding could continue. Breeding is expected to occur in areas of runoff from the Hoggar Mountains near Tamanrasset, Illizi and Djanet. No significant developments are likely.

MOROCCO

• SITUATION

No locust activity was reported during September.

• FORECAST

Low numbers of adults may appear in the Adrar Souttoug of the extreme south and breed on a small scale in areas of recent rainfall.

LIBYA

• SITUATION

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

• FORECAST

Low numbers of adults are likely to persist in those areas that remain green from recent flooding near Ghat where hatching is likely, causing locust numbers to increase and groups to form.

TUNISIA

• SITUATION

No locust activity was reported during September.

• FORECAST

No significant developments are likely.

CENTRAL REGION

SUDAN

• SITUATION

During September, scattered mature solitary adults continued to be present in the summer breeding areas of the interior in North Kordofan, Khartoum, River Nile, Northern and Kassala states. Similar infestations were also seen early in the month in the subcoastal areas of the northeast along Wadi Oko/Diib north of Tomala (2002N/3551E). Immature solitary adults were seen in some areas, which suggests that one generation of breeding may have occurred as a result of egg-laying in about mid-July. By the end of September, mature adults had formed a few small groups in North Kordofan.

• FORECAST

As vegetation dries out and summer breeding ends, a few small groups may form in the interior. Adults will move to the Red Sea coastal plains where small-scale breeding will commence with the onset of the winter rains.

ERITREA

• SITUATION

During the first decade of September, hatching occurred on the Red Sea coastal plains between Massawa (1537N/3928E) and Wekiro (1548N/3918E) and near Ghelaelo (1507N/4004E), giving rise to groups of gregarious hoppers. Scattered immature and mature solitary adults were present between Wekiro and Sheib (1551N/3903E), and some adults were copulating. Ground teams treated 53 ha on 1–10 September.

• FORECAST

Breeding will continue on the Red Sea coastal plains, causing locust numbers to increase between Mersa Fatma and the Sudanese border. Small hopper and adult groups are likely to form in some areas. There is a low to moderate risk of a few groups and swarms appearing on the coast from northeast Ethiopia.

ETHIOPIA

• SITUATION

During September, several more swarms laid eggs during the first half of the month in previously infested areas on the western edge of the Awash Valley north of Bati (1111N/4001E) in the Afar region. Hatching caused numerous hopper groups and bands to form that had reached mid-instar by the end of the month. Hopper bands also formed in a few places west of Dire Dawa (0935N/4150E). In the railway area in the east, a few groups and swarms laid eggs at mid-month south of Ayasha (1045N/4234E). Control operations treated 4 636 ha of which 2 423 ha were by air.

• FORECAST

Breeding will continue in Afar and along the railway area where additional hatching will cause an increasing number of hopper groups and small bands to form. Fledging will

occur by mid-October, giving rise to an increasing number of immature groups and perhaps small swarms. There is a moderate risk that some of these could move towards the Ogaden, especially if rainfall occurs during the forecast period while others may move north towards the Red Sea coast in Eritrea.

DJIBOUTI

• SITUATION

No reports were received during September.

• FORECAST

There remains a risk of a few small swarms from Yemen transiting through the country towards Ethiopia.

SOMALIA

• SITUATION

During the last week of August, several maturing swarms were seen on the northwest plateau between Boroma (0956N/4313E) and Sheikh (0956N/4511E) and further east on crops and pastures between Hadaaftimo (1056N/4807E) and Iskushuban (1017N/5014E) in mid-September.

• FORECAST

Breeding may occur in areas of recent rainfall on the northwest plateau between Burao and Boroma, causing locust numbers to increase and groups and small bands to form. Breeding is less likely to occur in the northeast unless further rains fall. There remains a risk of a few small swarms from Yemen appearing on the plateau.

EGYPT

• SITUATION

During September, no locusts were seen on the southern coastal plains and in subcoastal areas of the Red Sea between Halaib (2213N/3638E) and El Sheikh El Shazly (2412N/3438E), and in the Allaqi area east of Lake Nasser.

• FORECAST

Low numbers of adults may appear on the Red Sea coastal plains in the southeast where small-scale breeding will occur in areas that receive rainfall.

SAUDI ARABIA

• SITUATION

During September, hatching occurred on the southern Red Sea coastal plains near Jizan (1656N/4233E) where hopper groups and at least one band formed. Mature solitary, *transiens* and gregarious adults were also present near Jizan while immature and mature solitary and *transiens* adults were seen further north along the coast near Lith (2008N/4016E). No locusts were seen elsewhere along the coast. Ground teams treated 4 195 ha on 1–28 September.

• FORECAST

Locust numbers will continue to increase on the southern coastal plains of the Red Sea mainly near Jizan where hopper and adult groups are likely to form, and a second generation of laying could start in the last week of October

with hatching by mid-November. Breeding will also occur in areas of recent rainfall between Jizan and Lith.

YEMEN

• SITUATION

During September, only limited survey and control operations could be carried out. Hatching and hopper band formation were in progress on the northern Red Sea coast between Al Zuhrah (1541N/4300E) and Midi (1619N/4248E) from August breeding. By mid-month, most of the hoppers were second and third instar. Scattered mature solitarious adults were also present on the coast between Zabid (1410N/4318E) and Midi. In the interior, late instar hopper bands were present near Marib (1527N/4519E), Nisab (1430N/4629E) and in Wadi Hadhramaut where fledging occurred and adults formed immature groups. Ground teams treated 245 ha.

• FORECAST

A substantial increase in locust numbers is expected to occur as a result of unchecked breeding on the Red Sea coast. This will be further exacerbated by an increasing number of groups and perhaps small swarms forming in the interior that are likely to mature and breed along the edge of Ramlat Sabatyn between Marib and Shabwah where good rains and flooding occurred in September.

OMAN

• SITUATION

During September, scattered immature solitarious adults were present near Khasab (2610N/5615E) on the Musandam Peninsula. Elsewhere, no locusts were seen during surveys on the northern coast, in the northern interior between Buraimi (2415N/5547E) and Sur (2234N/5930E), and in interior and coastal areas of the southern governorate of Dhofar.

• FORECAST

Small-scale breeding may occur in coastal and interior areas of Al Waste Governorate where good rains fell from Cyclone Hikka.

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

• FORECAST

No significant developments are likely.

EASTERN REGION

IRAN

• SITUATION

During September, isolated immature and mature solitarious adults persisted in a few places in the southern provinces of Ilam near the Iraqi border, Bushehr, southern Fars, Hormozgan and southern Sistan-Baluchistan.

• FORECAST

There is a moderate risk that adult groups and small swarms may arrive in Sistan-Baluchistan and Hormozgan provinces from the Indo-Pakistan summer breeding areas. As rains are unusually predicted during the forecast period in the southeast, the adults are likely to persist, but maturation will be delayed as temperatures decline.

PAKISTAN

• SITUATION

During September, first-generation adult groups continued to mature and lay eggs primarily in Cholistan near the Indian border and Islamgarh (2751N/7048E) and, to a lesser extent, in Nara Desert south and east of Sukkur (2742N/6854E), and Tharparkar Desert north of Khokhropar (2542N/7012E) and near Nagarparkar (2421N/7045E). Second-generation hatching caused additional hopper groups to form and, by the last week of the month, fledging had commenced, giving rise to groups of immature adults. Ground teams treated 30 210 ha.

• FORECAST

As second-generation breeding continues, an increasing number of immature adult groups and small swarms will form along the Indo-Pakistan border where they will remain until vegetation dries out. Thereafter, adult groups and swarms will move west to coastal and interior areas of Baluchistan where they are likely to persist if rains occur by the end of the forecast period. These movements are likely in October and November when they are expected to be supplemented by similar populations from adjacent areas of Rajasthan.

INDIA

• SITUATION

During September, first-generation adult groups and swarms continued to mature and lay eggs over a widespread area of Rajasthan from Barmer (2543N/7125E) to north of Bikaner (2801N/7322E). Second-generation hatching caused hopper groups to form but no hopper bands due to substantial control operations. By the last week of the month, hoppers began to fledge and form groups of immature adults. Ground teams treated 84 639 ha.

• FORECAST

As second-generation breeding continues, an increasing number of immature adult groups and perhaps a few small swarms will form in Rajasthan where they are likely to remain until vegetation dries out. Thereafter, any adult infestations that are not detected or controlled will move towards the west. This movement is expected to increase during November.

AFGHANISTAN

• SITUATION

No reports were received during September.

• FORECAST

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



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 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.

Calendar

The following activities are scheduled:

- **CRC.** ULV sprayer maintenance workshop, Muscat, Oman (11–14 November)
- **SWAC.** Regional Desert Locust Information Officer workshop, Tehran, Iran (26–28 November)
- **DLCC.** 41st Session, Addis Ababa, Ethiopia (10–13 December)



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.



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>

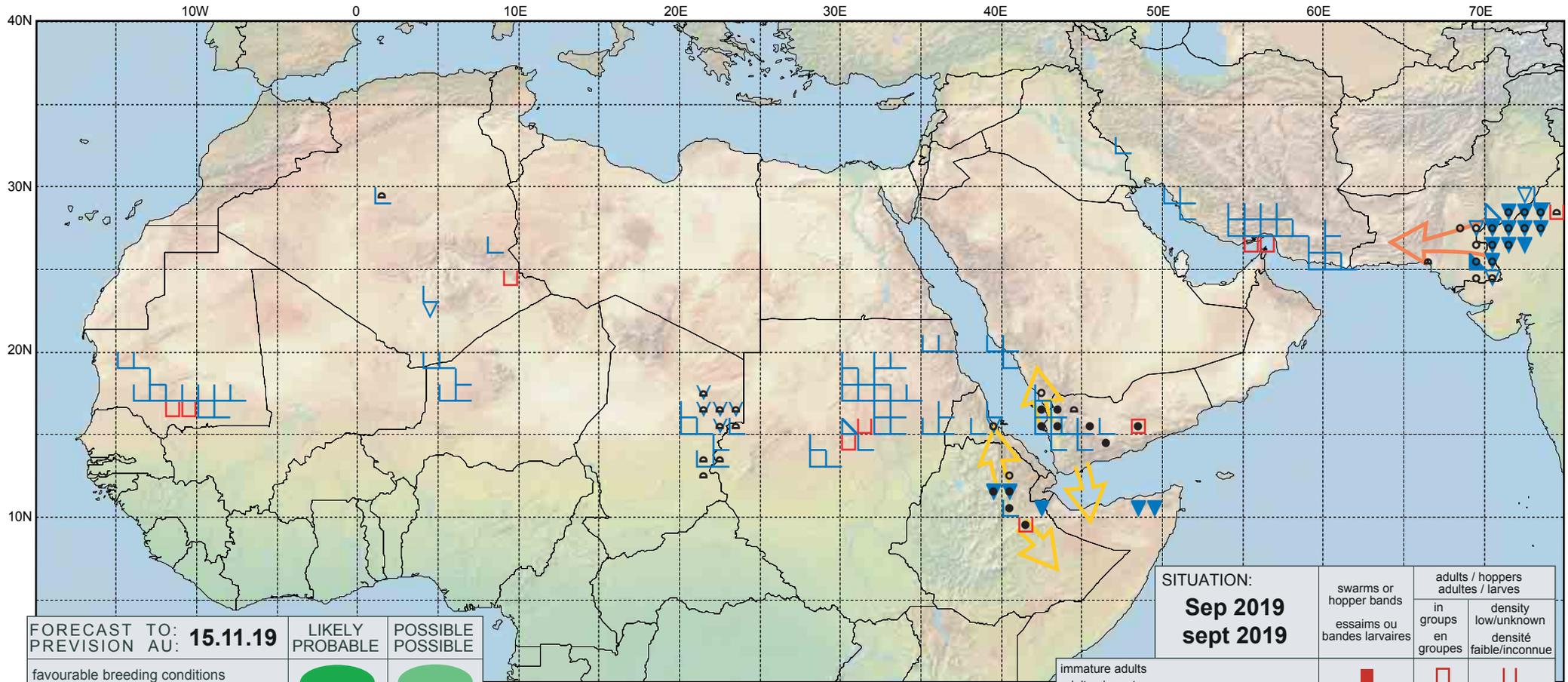
FAOLocust Slideshare. Locust presentations and photos
<http://www.slideshare.net/faolocust>

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



Desert Locust Summary

Criquet pèlerin - Situation résumée



FORECAST TO:
PREVISION AU: **15.11.19**

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:
Sep 2019
sept 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)	◼	◼	◼