Summer breeding imminent in NE Ethiopia & elsewhere

Spring breeding has ended in eastern Ethiopia and northwest Somalia where control operations continue to decline as they reduce the number and size of the spring-bred immature swarms. As anticipated, at least several swarms migrated to northeast Ethiopia where above-average rains since mid-July allowed them to mature and probably lay eggs in the Afar Region and southern Djibouti. Although this could not be confirmed and very few swarms have been seen recently due to difficulties in accessing the breeding areas, hatching and hopper band formation should be expected from early August onwards that could give rise to new swarms after late September. A few swarms may also have continued to the highlands in northern Ethiopia where they could reappear in adjacent areas of Sudan and Eritrea for breeding. In Yemen, a few swarms moved through the highlands and at least one swarm reached the interior where good rains that fell during July will allow at least one generation of summer breeding and the formation of small hopper bands. So far, local breeding is already in progress. Widespread, good rains also fell throughout the summer breeding areas in the northern Sahel between Mauritania and western Eritrea as well as along the Indo-Pakistan border. As few locust infestations are present in these areas, breeding will be on a small scale and locust numbers will only increase slightly.

WESTERN REGION: CALM

SITUATION. Scattered adults in Morocco (30 ha treated); isolated adults in central Algeria and Niger.
FORECAST. Small-scale breeding in the northern Sahel of Mauritania, Mali, Niger, and Chad.

CENTRAL REGION: THREAT

SITUATION. Control declines against last remaining hopper bands and immature swarms in northwest Somalia (27 162 ha treated), eastern Ethiopia (3 788 ha) and southeast Djibouti (55 ha); limited movement of swarms to northeast Ethiopia where rains allowed maturation, but few swarms seen. A few immature swarms in Yemen highlands move to interior where small-scale breeding is in progress. Bands and adult groups form from local breeding in northern Nile Valley of Sudan (525 ha). Immature adult group in southern Egypt (50 ha).
FORECAST. Laying, hatching, and band formation expected in northeast Ethiopia and southern Djibouti. A few immature swarms likely to persist in northwest Somalia. Scattered small-scale breeding in Sudan and western Eritrea. Breeding expected to increase in Yemen interior with possibility of small bands forming.

EASTERN REGION: CALM

SITUATION. No locusts present.
FORECAST. Small-scale breeding along both sides of the Indo-Pakistan border.

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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Internet: www.fao.org/ag/locusts
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Good rains fell throughout the summer breeding areas where conditions are improving. Above-normal rains in northeast Ethiopia.

WESTERN REGION
In the Sahel of West Africa, the Inter-Tropical Convergence Zone (ITCZ) continued its seasonal movement northwards during July, reaching some 225 km further north than usual over northern Chad, north of Faya, in the second decade. During the first decade, light to moderate rains fell in northeast Mali (Adrar des Iforas, Tamesna), northern Niger (Tamesna), and northeast Chad while light rains fell in southeast Mauritania. During the remainder of the month, rainfall increased in these areas and moderate to heavy rains fell throughout the northern Sahel of Chad and in southern Tamesna of Mali and Niger. Rainfall was less widespread in Mauritania where moderate rains fell near Tidjikja and Aioun El Atrous, and light rains occurred near Kiffa and Nema. In southern Algeria, light to moderate rains fell near Tamanrasset and along the Mali border near Timeaouine. Consequently, annual vegetation was becoming green and breeding conditions were improving in southern Tamesna of Mali and Niger, the central pasture areas in Niger, central and eastern Chad (southern Bahr el Gazel, southern Batha, Wadi Fira), and on a limited basis in southeast Mauritania near Timbedra.

CENTRAL REGION
In the Horn of Africa, above-normal rains fell in the Afar region of northeast Ethiopia, extending to the railway area north of Dire Dawa, Djibouti, northwest Somalia, and southern Eritrea. Annual vegetation was becoming green and breeding conditions were improving in southern Afar while green vegetation persisted on the plateau in northwest Somalia where temperatures declined, and strong winds prevailed. In the Arabian Peninsula, light to moderate rains fell along the Red Sea coast of Yemen during the first decade. Widespread moderate rains fell during the second decade throughout southern Saudi Arabia and the interior and Gulf of Aden coast of Yemen. Rainfall declined during the third decade but remained heavy in Yemen and southwest Saudi Arabia. Breeding conditions remain favourable in the interior of Yemen and may improve on the Red Sea coast near Jizan, Saudi Arabia and further south. In Sudan, the Inter-Tropical Convergence Zone (ITCZ) continued is seasonal movement northwards over the summer breeding areas of the interior, reaching north of Karima in the northern Nile Valley, some 250 km further north than usual, during the second decade. During the first decade, moderate rains fell in Darfur and light rains fell in southern North Kordofan. Rains improved during the second decade when moderate to heavy rains fell throughout North Kordofan and White Nile as well as the Bayuda Desert. Lighter rains continued during the third decade, extending to the Red Sea Hills south of Haiya. Good rains fell throughout the western lowlands in Eritrea. Consequently, annual vegetation was becoming green and breeding conditions improved in Darfur (west of El Fasher), in North Kordofan (central areas), north of Kassala, and in the western lowlands of Eritrea north of Teseney.

EASTERN REGION
The monsoon reached the western edge of the Indo-Pakistan summer breeding area on 13 July, which is about one week later than normal. During the third week, moderate rains fell in Rajasthan and adjacent areas of Tharparkar, Nara and Cholistan, and heavier rains fell near Jaisalmer, India and Nagarparkar, Pakistan. Rains were lighter during the last week of the month. So far, the cumulative rainfall total is normal in Rajasthan but below normal in Gujarat. As a result, annual vegetation was becoming green and breeding conditions were improving in most areas.

Control operations declined in July to 31,610 ha compared to 89,722 ha in June.

- Djibouti: 55 ha
- Egypt: 50 ha
- Ethiopia: 3,788 ha
- Morocco: 30 ha
- Somalia: 27,162 ha
- Sudan: 525 ha

WESTERN REGION
MAURITANIA
• SITUATION
No surveys were carried out and no locusts were reported during July.
• FORECAST
Small-scale breeding will cause locust numbers to increase slightly in areas of rainfall in the south and southeast.

MALI
• SITUATION
No surveys were carried out and no locusts were reported during July.
**FORECAST**

Small-scale breeding will cause locust to numbers to increase slightly in areas of rainfall in the Adrar des Iforas, Telmsi Valley, Timetrine and Tamesna.

**NIGER**

**SITUATION**

During the last week of July, isolated mature solitarious adults were seen at two places on the western edge of the Air Mountains between Agadez (1658N/0759E) and Arlit (1843N/0721E). Isolated immature adults were seen at one location southeast of the Air Mountains.

**FORECAST**

Small-scale breeding will cause locust numbers to increase slightly in areas of rainfall in the central pasture areas and on the Tamesna Plains.

**CHAD**

**SITUATION**

During the last decade of July, isolated mature solitarious adults were seen at a few places near Kalait (1550N/2054E) in the east. No locusts were seen in central and northeastern areas between Moussoro (1338N/1629E) and Fada (1714N/2132E).

**FORECAST**

Small-scale breeding will cause locust numbers to increase slightly in central, eastern and northeastern areas.

**SENEGAL**

**SITUATION**

No locusts were reported 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, low numbers of immature and mature solitarious adults were present near irrigated perimeters in the Adrar Valley (2753N/0017W) of the central Sahara.

**FORECAST**

Scattered adults may remain in the Adrar Valley where limited breeding could occur on the edges of irrigated fields. Small-scale may occur in areas of recent rainfall in the extreme south near Tamanrasset and borders of Mali and Niger.

**MOROCCO**

**SITUATION**

During 1–4 July, mature solitarious adults seen at densities up to 800 adults/ha in irrigated palm farms east of Errachidia (3154N/0425W) along the southern side of the Atlas Mountains. Ground teams treated 30 ha.

**FORECAST**

No significant developments are likely.

**LIBYA**

**SITUATION**

No locusts were reported during July.

**FORECAST**

No significant developments are likely.

**TUNISIA**

**SITUATION**

No reports were received during July.

**FORECAST**

No significant developments are likely.

**CENTRAL REGION**

**SUDAN**

**SITUATION**

During July, local breeding occurred in the northern Nile Valley near Karima (1832N/3148E) where a few second to fifth instar hopper bands and groups of hoppers and immature and mature adults formed in the second week. Mature solitarious adults were scattered throughout North Kordofan from Sodiri (1423N/2906E) to Khartoum Province, the Bayuda Desert, in the Nile Valley near Shendi (1641N/3322E), and along the western side of the Red Sea Hills from Kassala (1527N/3623E) and to north of Haiya (1820N/3621E). At the end of the month, an immature adult group was seen near Shendi. Ground teams treated 525 ha.

**FORECAST**

Fledging will continue in the northern Nile Valley until about mid-August and few small adult groups could form. Small-scale breeding will cause locust numbers to increase within a large area between North Darfur and the Red Sea Hills.

**ERITREA**

**SITUATION**

On 30 July, isolated mature solitarious adults were seen at one place in the southern part of the western lowlands about 10 km north of the Ethiopia border.

**FORECAST**

Small-scale breeding will cause locust numbers to increase slightly in areas of rainfall in the western lowlands. A few small swarms from adjacent areas of northeast Ethiopia may appear in recent areas of rainfall on the southern coast.

**ETHIOPIA**

**SITUATION**

During July, a few fifth instar hopper bands remained west of Ayasha (1045N/4234E) and south of Djibouti on the 1st. Several small immature swarms traversed west across the northern Rift Valley and began appearing along the
eastern escarpment of the Amhara Highlands on the 1st near Kombolcha (1105N/3944E) and continued to mid-month. Most of the swarms were concentrated in the foothills within an area of about 70 x 50 km and some had matured. One immature swarm was seen on the 1st in the Amhara Highlands about 150 km northwest of Kombolcha in North Wollo zone and near Ayasha on the 12th. There were also unconfirmed reports of a few swarms in southeast Tigray and near Gonder in northwest Amhara. Control operations treated 3,788 ha of which 3,538 ha were by air. No operations were conducted after 16 July.

**FORECAST**
Swarm breeding is expected to occur on a small scale in Afar and west of the railway area south of Djibouti. Hatching and the formation of small hopper bands is likely to commence in early August and continue during September. There is a lower risk of limited breeding occurring in parts of the highlands in Amhara and Tigray.

**DJIBOUTI**

* SITUATION
During the first week of July, a few small hopper bands were present in the southwest near As-Eyla (1100N/4206E) and to the east of Grand Barra in the hills north of Ali Sabieh (1109N/4242E) where breeding took place in June. There were also a few reports of immature swarms north of Ali Sabieh, probably from local breeding and adjacent areas of northwest Somalia. Ground teams treated 55 ha. No surveys were conducted after the first week of July.

* FORECAST
Small-scale breeding may occur in areas of recent rainfall in the south that could lead to hatching and hopper band formation from early August onwards.

**SOMALIA**

* SITUATION
During July, a few late instar hopper bands persisted in the northwest (Somaliland) on the escarpment between Hargeisa (0931N/4402E) and Berbera (1028N/4502E) and on the plateau near Boroma (0956N/4313E) until the 9th. The number and size of immature swarms declined steadily, remaining concentrated on the plateau near the escarpment between Boroma and Burco (0931N/4533E) with a few on the coast near Berbera and Bulhar (1023N/4425E), and one about 100 km east of Burao on the plateau. Cooler temperatures on the plateau and strong persistent winds limited swarm movement. There was a dramatic decline in control compared to June as operations using biopesticides treated 27,162 ha during July of which 26,147 ha were by air. No locusts were seen elsewhere in the interior, including on the plateau east of Wadi Hadhramaut to Oman.

* FORECAST
A few small swarms are likely to persist on the plateau and concentrate in areas of recent rainfall. The swarms are expected to remain immature due to low temperatures.

**KENYA**

* SITUATION
During July, surveys continued in northern and central counties, and no locusts were reported.

* FORECAST
No significant developments are likely.

**EGYPT**

* SITUATION
During July, ground teams treated 50 ha of a group of immature adults near Lake Nasser and Tushka (2247N/3126E) on the 18th. No locusts were seen on the Red Sea coast in the southeast between Abu Ramad (2224N/3624E) and the Sudan border and in adjacent subcoastal areas of Wad Diib.

* FORECAST
No significant developments are likely.

**SAUDI ARABIA**

* SITUATION
During July, no locusts were seen in the Asir Mountains from Taif (2115N/4021E) to the Yemen border, on the Red Sea coast near Qunfidah (1909N/4107E) and Jizan (1656N/4233E), and in the southwest interior near Najran (1729N/4408E).

* FORECAST
Locusts could appear and breed in areas of recent rainfall along the southern coastal plains near Jizan and in the interior near Najran.

**YEMEN**

* SITUATION
During July, a few immature and mature swarms were present in the highlands between Sada’a (1656N/4345E) to Sana’a (1521N/4412E) in the first week. Thereafter, an immature swarm was seen further south near Ibb (1358N/4411E) in the second week and southwest of Al Baydha (1405N/4542E) in the third week. On the 23rd, a mature swarm reached the edge of the summer breeding areas in the interior south of Ataq (1435N/4649E). Scattered immature and mature solitarious adults were present in the interior near Marib (1527N/4519E) and in Wadi Hadhramaut and the plateau to the north. Small-scale breeding occurred near Nisab (1430N/4629E) and Shabwah (1522N/4700E), giving rise to low numbers of solitarious hoppers. No locusts were seen elsewhere in the interior, including on the plateau east of Wadi Hadhramaut to Oman.

* FORECAST
Locust numbers are expected to increase as small-scale breeding continues and extends in the interior from Marib and Ataq to Wadi Hadhramaut and the eastern plateau. A limited number of hopper bands could form from swarm laying.
OMAN
• SITUATION
During July, no locusts were seen in the northern interior between Adam (2223N/5731E) and Buraimi (2415N/5547E), on the Musandam Peninsula, and in the south between Salalah (1700N/5405E) and Marmul (1808N/5516E).
• FORECAST
No significant developments are likely.

BAHRAIN, D.R. CONGO, IRAQ, ISRAEL, JORDAN, KUWAIT, LEBANON, PALESTINE, QATAR, SOUTH SUDAN, SYRIA, TANZANIA, TURKEY, UGANDA, AND UAE
• FORECAST
No significant developments are likely.

EASTERN REGION
IRAN
• SITUATION
During July, no locusts were seen or reported in coastal and interior areas of the south, and in the northeast.
• FORECAST
No significant developments are likely.

PAKISTAN
• SITUATION
During July, no locusts were seen or reported in coastal and interior areas of Baluchistan, and in the summer breeding areas in Tharparkar, Nara and Cholistan deserts.
• FORECAST
Small-scale breeding is expected to occur in parts of Cholistan, Nara and Tharparkar. No significant developments are likely.

INDIA
• SITUATION
During July, no locusts were seen by surveys in Rajasthan and Gujarat.
• FORECAST
Small-scale breeding is expected to occur in parts of Rajasthan and Gujarat. No significant developments are likely.

AFGHANISTAN
• SITUATION
No locust reports were received during July.
• FORECAST
No significant developments are likely.

**Desert Locust posters**
FAO in collaboration with OCHA has developed six simple, easy to understand posters for communities that may be affected by locusts. The purpose is to provide basic messaging on pesticide containers, safety measures, pesticide exposure, farmer advice, Desert Locust, and following instructions. The posters can be edited. [http://www.fao.org/ag/locusts/en/publicat/2581/index.html]

**Desert Locust animation**
FAO in collaboration with SWABO has produced a simple animation that explains the danger of Desert Locust. [https://www.youtube.com/watch?v=3TOhuA-v1m4]

**Locust Hub**
FAO in partnership with ESRI operates 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]

**Hand-in-Hand geospatial platform**
FAO has developed the Hand-in-Hand geospatial platform that also integrates Desert Locust data from the Locust Hub. [https://data.apps.fao.org]

**Calendar**
- **CLCPRO.** 10th session, Algiers, Algeria (October, tbc)
- **CRC.** 32nd session, Jeddah, Saudi Arabia (14–18 November)
- **DLCC.** 42nd session, Nairobi, Kenya (8–11 March 2022, tbc)

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**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 upsurges and 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 upsurges and plagues only: Bahrain, D.R. Congo, 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

**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)

**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-mPDhhGNg5So

**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/elertssite
Desert Locust Summary
Criquet pèlerin – Situation résumée

FORECAST TO: 15.09.21
PREVISION AU: ...

favourable breeding conditions
conditions favorables à la reproduction

major swarm(s)
 essaïm(s) important(s)

minor swarm(s)
 essaïm(s) limité(s)

non swarming adults
adults non essaimant

LIKELY PROBABLE POSSIBLE

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)

SITUATION:
July 2021
juillet 2021

adults / hoppers
adultes / larves

in groups
en groupes

density
densité
low/unknown
faible/inconnue