

warning level: **CAUTION**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 455

(2.09.2016)



General Situation during August 2016 Forecast until mid-October 2016

The Desert Locust situation remained very serious in Yemen during August. Another generation of breeding occurred, causing hopper bands to form in the interior and on the southern coast; however, the situation remained unclear because it was not safe to carry out surveys. At least one swarm migrated to Pakistan and a smaller swarm reached northern Somalia, eastern Ethiopia and perhaps Djibouti. Control operations were initiated in Pakistan and Ethiopia. There remains a risk that more swarms could form in Yemen and move to the Horn of Africa and the Red Sea coast. All countries should remain extremely vigilant. Elsewhere, the situation remained calm. Low numbers of adults were widely distributed throughout the summer breeding area of the northern Sahel in West Africa and Sudan, and along the Indo-Pakistan border due to widespread rainfall and favourable ecological conditions. During the forecast period, small-scale breeding will continue in these areas, causing locust numbers to increase, and a few adult groups could appear in west and northwest Mauritania by mid-October.

Western Region. Ecological conditions became favourable throughout most of the northern Sahel of West Africa during August as a result of good widespread rains. Consequently, low numbers of solitary adults were scattered throughout most of southern Mauritania and Chad. A similar situation may be present in northern Mali and Niger. Summer

breeding will cause locust number to increase throughout the forecast period in all areas and could extend to southern Algeria. By mid-October, an increased number of locusts may suddenly appear in west and northwest Mauritania as vegetation rapidly dries out in the south, leading to the potential formation of small groups.

Central Region. The locust situation remained serious during August in Yemen where a second generation of breeding took place in the interior and on the southern coast, giving rise to hopper bands. Few surveys could be carried out due to insecurity. At least one first-generation swarm migrated to Pakistan while other smaller swarmlets moved to the Horn of Africa along the borders of Djibouti, Ethiopia and northern Somalia where they laid eggs that hatched, causing small hopper bands to form in eastern Ethiopia and northwest Somalia. Ethiopian teams treated 208 ha. More groups and small swarms are likely to form in Yemen that could move through the highlands and onto the Red Sea coast and into adjacent areas of Saudi Arabia while other swarms could move to the Horn of Africa. Elsewhere, scattered adults were present in the interior of Sudan and on the Red Sea coastal plains in Saudi Arabia where small-scale breeding will cause locust numbers to increase.

Eastern Region. In late July, at least one mature swarm from Yemen arrived on the Uthal coast of Pakistan where local breeding was already in progress and laid eggs that hatched and hopper groups formed. Ground teams treated 410 ha. A few gregarious adults reached the Indus Valley while scattered mature adults were present in Cholistan and, to a lesser extent, in adjacent areas of Rajasthan, India. Small-scale breeding will continue along both sides of the Indo-Pakistan border, causing locust numbers to increase slightly. Adult groups could form near Uthal.

The FAO Desert Locust Bulletin is issued every month by the Desert Locust Information Service, AGP Division (Rome, Italy). It is supplemented by Alerts and Updates during periods of increased Desert Locust activity. All products are distributed by e-mail and are available on the Internet.

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Weather & Ecological Conditions in August 2016

Green vegetation and good breeding conditions were present throughout the northern Sahel of West Africa and Sudan as a result of widespread rains that fell much further north than usual. Heavy rains and flooding occurred in Yemen. Good monsoon rains fell along both sides of the Indo-Pakistan border.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) was located up to 300 km further north than usual over Mauritania and Mali during August while it remained slightly above or nearly at its long-term mean position over Niger and Chad. By the end of the month, it had reached north of Ouadane in Mauritania, north of the Algeria-Mali border, near Iferouane and Bilma in Niger and south of Fada in northeast Chad. As a result, good rains fell south of the northern limit of the ITCZ throughout the summer breeding areas. Good rains also fell in northwest and northern Mauritania, southern Algeria, the Djado Plateau in northeast Niger and near Tibesti in northwest Chad. Heavier showers fell in northwest Mali near Taoudenni, in the southern Adrar des Iforas and near Abeche in eastern Chad. Flooding occurred in parts of southern Algeria and in Adrar, Mauritania. Consequently, breeding conditions were favourable over a widespread area of the northern Sahel in West Africa.

In the **Central Region**, the Inter-Tropical Convergence Zone (ITCZ) was located slightly south of its long-term mean position during the first two decades of August, and retreated some 150 km further south than normal during the third decade, reaching Khartoum and north of Hamrat Esh Sheikh in North Kordofan. Widespread, good rains fell throughout the month in all summer breeding areas from West Darfur to the Red Sea Hills, reaching almost as far north as Dongola. Similar rains fell in the western lowlands of Eritrea. Consequently, breeding conditions were favourable over a widespread area of Sudan and western Eritrea. In Yemen, moderate to heavy rains continued to fall at the beginning of August and again at mid-month, causing flooding in many areas including the interior from Bayhan to

Al Jawf, Wadi Hadhramaut and Thamud plateau as well as Sana'a and parts of the Red Sea coast. This should allow breeding conditions to remain favourable in most areas. Showers fell at times in northern Oman. In the Horn of Africa, good rains fell in the Afar Region, along the railway and in parts of the Somali region of eastern Ethiopia, extending to southern Djibouti and the escarpment and plateau areas in northwest Somalia near the Ethiopian border. As a result, conditions were favourable for breeding.

In the **Eastern Region**, good rains associated with the seasonal southwest monsoon continued to fall in the summer breeding areas along both sides of the Indo-Pakistan border during August. In India, normal amounts were received in Barmer and Jaisalmer districts while above-normal rains fell in Bikaner and Jodhpur as well as in other districts. In Pakistan, good rains fell mainly during the first and third decades in Cholistan, Nara and Tharparkar deserts and in the Uthal area. As a result, breeding conditions were favourable in both countries. Dry conditions prevailed in southeast Iran.



Area Treated

Ethiopia	208 ha (August)
Pakistan	410 ha (August)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During August, mature solitary adults were scattered throughout the summer breeding areas of the south between Boutilimit (1732N/1441W) and Rosso (1629N/1553W) in Trarza, north of Magta Lahjar (1730N/1305W) in Brakna, north of Kiffa (1638N/1124W) in Assaba, east of Aioun El Atrous (1639N/0936W) in Hodh El Gharbi, and near Nema (1636N/0715W) and Oualata (1717N/0701W) in Hodh Ech Chargui. Hatching occurred early in the month on the coast north of the Senegal River and in the southeast on the plateau east of Nema.

• FORECAST

Small-scale breeding will continue over a widespread area of the south, causing locust numbers to increase. As vegetation starts to dry out, an increasing number of adults are expected to appear in the west and northwest where small groups may form by the end of the forecast period.

Mali

• SITUATION

No reports were received in August.

• FORECAST

Low numbers of adults are likely to be present and breeding in the Adrar des Iforas, Tilemsi Valley, Timetrine and Tamesna, causing locust numbers to increase slightly.

Niger

• SITUATION

During August, isolated immature and mature solitary adults were present in a few places on the western edge of the Air Mountains north of Agadez (1658N/0759E), on the Tadress plains south of Agadez and northeast of Filingué (1421N/0319E) in the western part of the country.

• FORECAST

Small-scale breeding will cause locust numbers to increase slightly on the Tamesna and Tadress plains and in the Filingué area.

Chad

• SITUATION

During August, isolated immature and mature solitary adults were scattered in Kanem, Batha, Bilthine and the northeast between Mao (1406N/1511E) and Fada (1714N/2132E). Small-scale hatching occurred from late July onwards, and isolated fifth instar solitary hoppers were reported at two places after mid-August. Adults were seen laying eggs between Moussoro (1338N/1629E) and Salal (1448N/1712E), and near Fada during the last week of August.

• FORECAST

Locust numbers will increase slightly as small-scale breeding continues in Kanem, Batha, Bilthine and in the northeast. A new generation of adults will appear from early September onwards and continue during October.

Senegal

• SITUATION

A late report indicated there was no locust activity 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 August, isolated immature solitary adults were present near Silet (2201N/0409E) west of Tamanrasset (2250N/0528E) in the southern Sahara.

• FORECAST

Small-scale breeding is likely to cause locust numbers to increase in the south between Tamanrasset and the Malian border.

Morocco

• SITUATION

No locust activity was reported during August.

• FORECAST

No significant developments are likely.

Libya

• SITUATION

A late report indicated that low-density adults were seen in the southwest in W. Tazoft just north of Ghat (2459N/1011E) on 13 July and low-density hoppers were reported on the 26th just south of Ghat in W. Essyen. No locust activity was reported during August.

• FORECAST

No significant developments are likely.

Tunisia

• SITUATION

No locust activity was reported during August.

• FORECAST

No significant developments are likely.

CENTRAL REGION

Sudan

• SITUATION

During August, scattered mature solitary adults were present near Kassala (1527N/3623E), in the Nile Valley between Ed Debba (1803N/3057E) and Dongola (1910N/3027E), and mixed with some immature adults in North Kordofan and White Nile states between Abu Uruq (1554N/3027E) and Ed Dueim (1400N/3220E). No locusts were seen in the Baiyuda Desert and east of the Nile to the Red Sea Hills.

• FORECAST

Locust numbers will increase slightly as a result of small-scale breeding that is almost certainly in progress in West and North Darfur, West and North Kordofan and White Nile states as well as near



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Kassala and near cropping areas in the Nile Valley. Once vegetation begins to dry out in summer breeding areas, locusts could concentrate between the Nile Valley and the Red Sea Hills towards the end of the forecast period.

Eritrea

• SITUATION

During August, no locusts were seen on the Red Sea coast between Sheib (1551N/3903E) and the Sudanese border except for a few isolated immature solitary adults in the north near Mehimet (1723N/3833E) and isolated mature solitary adults in the centre near Shelshela (1553N/3906E).

• FORECAST

Low numbers of adults are likely to be present and breeding on a small scale in the western lowlands. There is a low risk that adult groups and perhaps a small swarm could appear on the southern coastal plains from Yemen.

Ethiopia

• SITUATION

On 10 August, a medium-density mature swarm of about 200 ha was seen in the railway area near Ayasha (1045N/4234E) that laid eggs, giving rise to dozens of small second instar hopper bands by the end of the month. Ground teams treated 208 ha. In the Afar Region, low numbers of solitary adults and second to fifth instar hoppers were present near Sifani (1216N/4021E).

• FORECAST

Breeding will cause locust numbers to increase along the railway where small groups, bands and perhaps swarmlets could form. There is a low to moderate risk that adult groups and perhaps a few small swarms could appear from Yemen.

Djibouti

• SITUATION

During the last week of July and in early August, locust adults were reportedly seen moving in the south near Ali Sabieh (1109N/4242E) towards Ethiopia.

• FORECAST

There is a low to moderate risk that adult groups and perhaps a few small swarms could appear in coastal or interior areas.

Somalia

• SITUATION

During August, isolated immature and mature solitary adults were seen at four places on the northwest coastal plains southwest of Lughaye (1041N/4356E). At the end of the month, a second instar hopper band, a fifth instar band and isolated mature solitary adults were present on the escarpment in the Jidhi (1037N/4304E) area near the Ethiopian border where there had been earlier unconfirmed sightings of mature swarmlets moving back and forth across the Ethiopian border. On the plateau to the east, there was an unconfirmed report of hopper bands at two places between Burao (0931N/4533E) and the Ethiopian border on the 29th.

• FORECAST

A few groups and perhaps a small swarm could form on the escarpment near the Ethiopian border. There is a low to moderate risk that a few adult groups and perhaps a small swarm could appear from Yemen.

Egypt

• SITUATION

During August, no locusts were seen near Lake Nasser in the Tushka (2247N/3126E) and Abu Simbel (2219N/3138E) areas, and on the Red Sea coast between Abu Ramad (2224N/3624E) and the Sudanese border.

• FORECAST

No significant developments are likely.

Saudi Arabia

• SITUATION

During August, scattered immature solitary adults were present on the Red Sea coastal plains near Lith (2008N/4016E) while scattered mature solitary adults were reported further south near Jizan (1656N/4233E) where some adults were seen laying eggs at mid-month.

• FORECAST

Small-scale breeding with hatching from early September onwards will cause locust numbers to increase slightly in areas of recent rainfall on the Red Sea coastal plains between Lith and Jizan. There is a low to moderate risk that a few small swarms could appear in areas adjacent to Yemen.

Yemen

• SITUATION

During August, the situation remained unclear throughout the country. Locals and scouts reported hatching and numerous small hopper groups and bands on the southern coastal plains to the west of Aden (1250N/4503E) between W. Am Shaibi (1304N/4437E) and Am Rija (1302N/4434E) on the 20th. Scattered mature solitary adults were seen

nearby during a survey. In the interior, hatching and first to second instar hopper groups were reported on the plateau west of Thamud (1717N/4955E) in the Khaf Al Awamer area (1625N/4849E) on the 21st.

- **FORECAST**

More groups and small swarms are likely to form in the interior between Marib and Thamud as well as on the Aden coastal plains. Some of these are expected to remain in areas of recent rainfall while others will move into the central highlands and continue to the Red Sea coast. Breeding is expected to occur in both areas and band formation is likely.

Oman

- **SITUATION**

During August, no locusts were seen during surveys carried out in North and South Sharqiya regions and on the Musandam Peninsula.

- **FORECAST**

There remains a low risk that a few small swarms from Yemen may appear in some areas of the south.

Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Lebanon, Palestine, Qatar, Syria, Tanzania, Turkey, UAE and Uganda

- **FORECAST**

No significant developments are likely.

EASTERN REGION

Iran

- **SITUATION**

During August, no locusts were seen on the southeast coast near Chabahar (2517N/6036E) and Jask (2540N/5746E) or in the Jaz Murian Basin in the interior near Ghale Ganj (2731N/5752E).

- **FORECAST**

No significant developments are likely.

Pakistan

- **SITUATION**

At least one mature swarm arrived on about 27 July in coastal areas of Uthal (2548N/6637E) and subsequently dispersed, mixing with local populations of solitary hoppers and adults, and laid eggs. Hatching commenced during the second week of August, giving rise to groups of *transiens* and gregarious hoppers. Groups of mature adults and a mature swarm were reported on the 11th. Ground teams treated 410 ha.

In the summer breeding areas, gregarious adults appeared on the eastern side of the Indus Valley south of Sukkur (2742N/6854E) on the 10th, probably arriving from Uthal. Throughout the month, isolated mature solitary were present in a few places near the Indian border in Cholistan and Nara deserts.

Adults were seen laying eggs at one place in the Nara Desert on the Indian border at the end of August.

- **FORECAST**

Small-scale breeding will continue during the forecast period in Tharparkar, Nara and Cholistan deserts as well as Uthal, causing locust numbers to increase slightly. Small adult groups could form in Uthal from mid-September onwards.

India

- **SITUATION**

During the first fortnight of August, isolated mature solitary adults persisted at one place near Bikaner (2801N/7322E). No locusts were seen during the second fortnight.

- **FORECAST**

Small-scale breeding will continue in parts of Rajasthan and Gujarat, causing locust numbers to increase slightly.

Afghanistan

- **SITUATION**

No reports received.

- **FORECAST**

No significant developments are likely.



Announcements

Desert 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 bulletin's header. 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. During calm (green) periods, countries should report at least once/month and send RAMSES data with a brief interpretation. During caution (yellow), threat (orange) and danger (red) periods, often associated with 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. Affected countries



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are also encouraged to prepare decadal bulletins summarizing the situation. All information should be sent by e-mail to the FAO/ECLO Desert Locust Information Service (eclo@fao.org). Information received by the end of the month will be included in the FAO Desert Locust Bulletin for the current month; otherwise, it will not appear until the following month. Reports should be sent even if no locusts were found or if no surveys were conducted.

Locust tools and resources. FAO has developed a number of tools that National locust information officers and other interested individuals can use for Desert Locust early warning and management:

- **MODIS.** Vegetation imagery every 16 days (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/Regional/MODIS/index.html)
- **MODIS.** Daily rainfall imagery in real time (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/index.html)
- **RFE.** Rainfall estimates every day, decade and month (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/index.html)
- **Greenness maps.** Dynamic maps of green vegetation evolution every decade (http://iridl.ldeo.columbia.edu/maproom/Food_Security/Locusts/Regional/greenness.html)
- **eLocust3 training videos.** A set of 15 introductory training videos are available on YouTube: <https://www.youtube.com/playlist?list=PLf7Fc-oGpFHEdv1jAPaF02TCfpcnYoFQT>
- **RAMSESv4 training videos.** A set of basic training videos are available on YouTube: <https://www.youtube.com/playlist?list=PLf7Fc-oGpFHGyzXqE22j8-mPDhhGNq5So>
- **RAMSESv4 and eLocust3 updates.** Updates can be downloaded from <https://sites.google.com/site/rv4elocust3updates/home>
- **FAOLOCUST Twitter.** The very latest updates are posted on Twitter (<http://www.twitter.com/faolocust>)
- **FAOLocust Facebook.** A social means of information exchange using Facebook (<http://www.facebook.com/faolocust>)
- **Slideshare.** Locust presentations and photos available for viewing and download (<http://www.slideshare.net/faolocust>)

- **eLERT.** A dynamic and interactive online database of resources for locust emergencies (<http://sites.google.com/site/elertsite>)

New information on Locust Watch. Recent additions to the web site (www.fao.org/ag/locusts) are:

- **Desert Locust situation updates, 9 and 12 August.** Archives – Briefs
- **Current threats.** Information
- **Yemen outbreak.** Archives – Threats
- **Climate change and Desert Locust (infographic).** Activities – Climate change

2016 events. The following activities are scheduled or planned:

- **CLCPRO.** Regional training of trainers on Health and Environment standards, Agadir, Morocco (5-9 September)
- **CLCPRO.** Regional training of trainers on survey techniques, Aioun, Mauritania (19-25 Sep)
- **CRC.** Regional workshop on Health and Environment Standards, Hurghada, Egypt (25-29 Sep)
- **SWAC.** 30th session, Islamabad, Pakistan (12-14 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 of rainfall.

MODERATE

- 21 - 50 mm of rainfall.

HEAVY

- more than 50 mm of rainfall.

OTHER REPORTING TERMS

BREEDING

- the process of reproduction from copulation to fledging.

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)

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: Burkino Faso, Cape Verde, Gambia, Guinea and Guinea-Bissau.

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, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

EASTERN

- locust-affected countries in South-West Asia: Afghanistan, India, Iran and Pakistan.

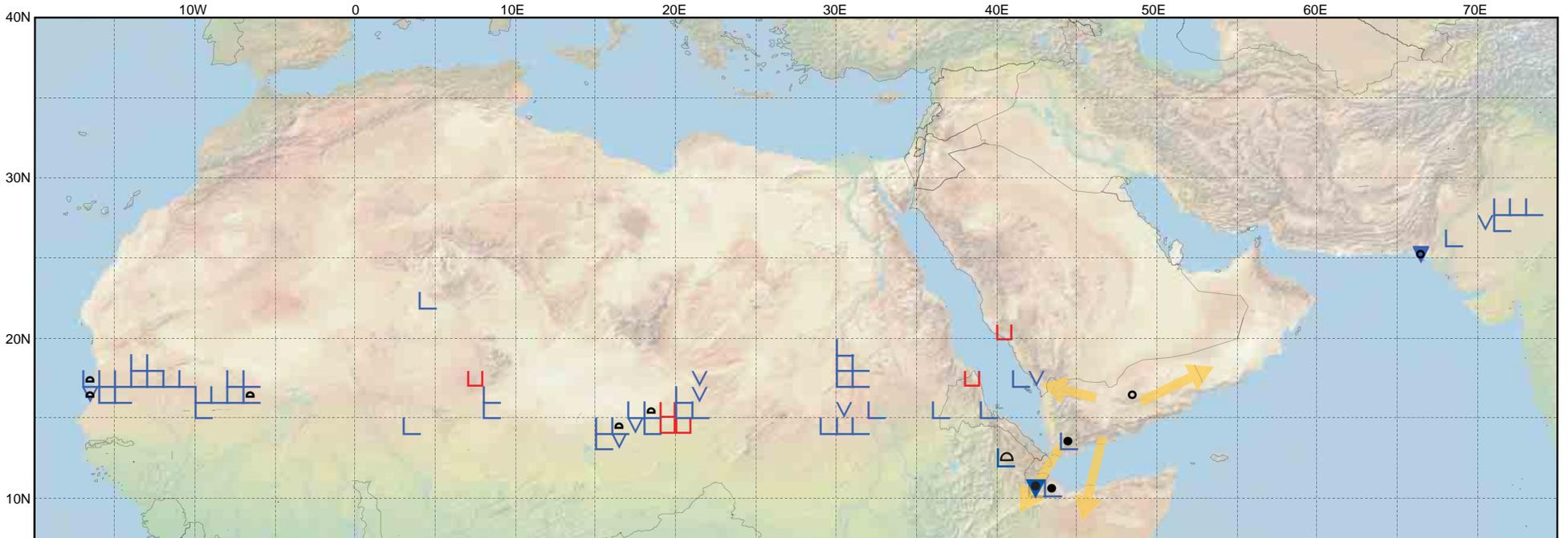


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Desert Locust Summary

Criquet pèlerin - Situation résumée



FORECAST TO: PREVISION AU:	LIKELY PROBABLE	POSSIBLE POSSIBLE
15.10.16		
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: Aug 2016 août 2016	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)			