

warning level: **CAUTION**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 454

(2.08.2016)



General Situation during July 2016 Forecast until mid-September 2016

The Desert Locust situation continued to be a cause for major concern in Yemen during July. An unknown number of swarms continued to form in the interior. At least one swarm moved into the central highlands while adult groups moved to the southern coast. Heavy rains and flooding in most areas at the end of July will allow breeding to continue and extend to the Red Sea coastal plains. Survey and control operations are severely limited by insecurity. While most of the swarms are expected to remain in Yemen, there is a low risk that a few could appear in Saudi Arabia, Oman and the Horn of Africa. These countries should remain vigilant. Elsewhere, the situation remained calm. Scattered adults appeared in the summer breeding areas of Mauritania, Niger, Sudan, India, Pakistan and perhaps Mali. Small-scale breeding will cause locust numbers to increase slightly in the northern Sahel from Mauritania to Eritrea and along the Indo-Pakistan border but remain below threatening levels.

Western Region. Low numbers of solitary adults appeared in the summer breeding areas of the northern Sahel in southern Mauritania, Niger and perhaps Mali during July. This coincided with an increase in the seasonal rains. By the end of the month, ecological conditions had become favourable for breeding in many areas. Small-scale breeding commenced in Mauritania in about mid-July and hatching began at the end of the month. During the

forecast period, breeding will continue in Mauritania and commence in northern Mali, Niger, Chad and perhaps in southern Algeria. Hatching will occur during August and locust numbers will increase slightly but should remain below threatening levels.

Central Region. The locust situation was extremely worrying in Yemen during July. An unknown amount of breeding continued in the interior where swarms formed. At least one swarm moved to the central highlands while adult groups moved to the southern coast, and scattered adults appeared on the Red Sea coastal plains. Heavy rains and flooding occurred at the end of the month that will allow further breeding. Survey and control operations could not be carried out due to prevailing insecurity and logistical difficulties. During the forecast period, swarms are likely to remain in the country and lay eggs in areas of recent rainfall on the Red Sea coast and in the interior where hatching and band formation are expected. There is a low risk that a few small swarms could appear in adjacent areas of Saudi Arabia and Oman or move to northern Somalia, Djibouti, Ethiopia and Eritrea. The situation in Yemen is potentially very dangerous. Elsewhere, low numbers of solitary adults were present in the Nile Valley of northern Sudan and isolated adults were reported in eastern Ethiopia. During the forecast period, small-scale breeding will occur in the interior of Sudan and western Eritrea where hatching is expected and locust numbers will increase slightly but remain below threatening levels.

Eastern Region. The locust situation remained calm during July. Low numbers of adults began to appear in summer breeding along both sides of the Indo-Pakistan border. The seasonal monsoon rains arrived by mid-month but rainfall so far has been lower than normal. Nevertheless, small-scale breeding is expected to occur in both countries during the forecast period, causing locust numbers to increase slightly.

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 July 2016

Seasonal rains continued in the summer breeding areas of the northern Sahel in West Africa and Sudan, and ecological conditions became favourable for breeding in most areas. Below-normal monsoon rains fell in the Indo-Pakistan summer breeding areas. Heavy rains fell at the end of the month in Yemen.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) remained further north than usual over West Africa during July. By the end of the month, it was located over the Adrar region in Mauritania, north of the Mali and Niger border in southern Algeria, and in northern Chad. As a result, light to moderate rains fell in Assaba, Tagant and the two Hodhs in central and southern Mauritania, in the Adrar des Iforas and parts of Tamesna in northeast Mali, in Tamesna and central pasture areas of Niger, and throughout central Chad as far north as 15N. Consequently, breeding conditions had become favourable in most of these areas by the end of the month. Light rain fell in southern Algeria near the Hoggar Mountains, causing runoff in several wadis. Annual vegetation was dry or absent in the south, but vegetation was green near irrigated agricultural schemes in the Adrar area of the central Sahara.

In the **Central Region**, the Inter-Tropical Convergence Zone (ITCZ) was located further north than usual over Sudan during July, reaching Dongola by the end of the month. Consequently, good rains fell in West and North Darfur, North Kordofan, White Nile and Khartoum states and ecological conditions became favourable for breeding in many areas. Light rainfall extended to southern parts of the western lowlands in Eritrea. In Yemen, moderate to heavy rains fell during the last decade of July on the Red Sea coast, in the central highlands and the interior, causing flooding in many areas including Wadi Bayhan and Wadi Hadhramaut. Some of the rains extended to the southern coastal plains in Saudi Arabia near Jizan. As a result, ecological conditions should remain favourable in Shabwah and Hadhramaut and will become favourable for breeding on the Red Sea coast. In Oman, light to moderate showers fell at

times during the last two decades of the month in parts of the northern interior between Buraimi and Sharqiya while heavier than normal showers fell in the south along the Salalah coast. Light rains fell in eastern Ethiopia that may be sufficient to allow limited breeding in a few places.

In the **Eastern Region**, the seasonal southwest monsoon reached summer breeding areas along both sides of the Indo-Pakistan border by mid-July. In India, the monsoon arrived in northern Rajasthan on about the 3rd and by the 12th had covered all of Rajasthan. In some places, the monsoon was nearly two weeks late. On the 13th, it reached adjacent areas of Tharparkar, Nara and Cholistan deserts in Pakistan. By the end of the month, near-normal levels of rainfall had been received in eastern Rajasthan while very little rain had fallen in the western districts of Jaisalmer and Barmer, in Gujarat and in Pakistan. Dry conditions prevailed in southeast Iran.



Area Treated

No control operations were carried out in July.



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During the first decade of July, residual populations of isolated fifth instar hoppers, immature and mature solitary adults persisted in the north near Zouerate (2244N/1221W) while immature solitary adults continued to be present in western Tagant. During the remainder of the month, an increasing number of mature solitary adults were seen in the two Hodhs between Tintane (1623N/1009W) and Nema (1636N/0715W). Hatching commenced during the last decade northwest of Nema where first to third instar hoppers were seen on the 30th.

• FORECAST

Additional laying and hatching will occur in the south, causing locust numbers to increase slightly. Fledging will commence during the second half of August and continue into September.

Mali

• SITUATION

On 7 July, there was an unconfirmed report of immature and mature adults that were said to be

concentrating and forming groups at four places near Gourma (1653N/0155W).

- **FORECAST**

Low numbers of adults are likely to be present and breeding is likely to have commenced in parts of the Adrar des Iforas, Tilemsi Valley, Timetrine and Tamesna where hatching is expected during the forecast period, causing locust numbers to increase slightly.

Niger

- **SITUATION**

On 30 July, isolated immature and mature solitary adults were seen at one place northwest of Agadez (1658N/0759E) and isolated adults were reported to be laying eggs north of Filingué (1421N/0319E) in the western part of the country.

- **FORECAST**

Small-scale breeding is likely to have commenced on the Tamesna Plains and in central areas where hatching is expected during the forecast period, causing locust numbers to increase slightly.

Chad

- **SITUATION**

No surveys were carried out and no locusts were reported during July.

- **FORECAST**

Small-scale breeding may have commenced in northern portions of Kanem and Batha, in Biltine and in the northeast where hatching is expected during the forecast period, causing locust numbers to increase slightly.

Senegal

- **SITUATION**

No reports were received in 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 mature solitary adults were present near irrigated perimeters in the Adrar (2753N/0017W) area of the central Sahara.

- **FORECAST**

Low numbers of adults may persist near irrigated areas in the central Sahara. Small-scale breeding may occur in the extreme south if more rains fall.

Morocco

- **SITUATION**

No locust activity was reported during July.

- **FORECAST**

No significant developments are likely.

Libya

- **SITUATION**

No reports were received in July.

- **FORECAST**

No significant developments are likely.

Tunisia

- **SITUATION**

No locust activity was reported during July.

- **FORECAST**

No significant developments are likely.

CENTRAL REGION

Sudan

- **SITUATION**

During the second half of July, scattered mature solitary adults were present near Kassala (1527N/3623E) and the Eritrean border, and in the Nile Valley between Shendi (1641N/3322E) and the Egyptian border at Wadi Halfa (2147N/3122E). No locusts were seen in the Baiyuda Desert, on the western side of the Red Sea Hills and in North Kordofan and White Nile states.

- **FORECAST**

Small-scale breeding will commence in West and North Darfur, West and North Kordofan and White Nile states as well as near Kassala, causing locust numbers to increase slightly. Small-scale breeding may also occur near cropping areas in the Nile Valley.

Eritrea

- **SITUATION**

No locusts were seen during a survey in the western lowlands on 26-29 July

- **FORECAST**

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



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Ethiopia

• SITUATION

During July, isolated solitary adults were seen near Ayasha (1045N/4234E) and scattered adults were reported in Teru district of Afar Region.

• FORECAST

Low numbers of adults may persist in Ayasha and Teru areas and could breed on a limited scale in areas of recent rainfall. There is a low risk that adult groups and perhaps a small swarm could appear from Yemen.

Djibouti

• SITUATION

No locust activity was reported during July.

• FORECAST

There is a low risk that adult groups and perhaps a small swarm could appear from Yemen.

Somalia

• SITUATION

No surveys were carried out and no locusts were reported during July.

• FORECAST

There is a low risk that adult groups and perhaps a small swarm could appear from Yemen.

Egypt

• SITUATION

During July, no locusts were seen near irrigated farms in the Tushka (2247N/3126E) area.

• FORECAST

No significant developments are likely.

Saudi Arabia

• SITUATION

No surveys were carried out and no locusts were reported during July.

• FORECAST

There is a low risk that a few small swarms could appear in areas adjacent to Yemen.

Yemen

• SITUATION

On 1-2 July, adult groups and a few immature swarms from the interior appeared in the central highlands near Taiz (1335N/4401E), and groups of adults also arrived on the southern coast near Mukalla

(1431N/4908E). On the 26th, a large immature swarm was reported in Taiz. On the 28th, low numbers of mature solitary adults were seen on the northern coastal plains of the Red Sea to the west of Suq Abs (1600N/4312E). It is difficult to have a complete picture of the situation as ground operations remain problematic in all areas.

• FORECAST

More groups and small swarms are likely to form in the interior between Marib and Thamud. 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. There remains a moderate risk that some groups and small swarms could move to the southern coast.

Oman

• SITUATION

During July, no locusts were seen during surveys carried out in the northern interior near Buraimi (2415N/5547E) 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 July, no locusts were seen on the southeast coast near Chabahar (2517N/6036E) and Jask (2540N/5746E).

• FORECAST

No significant developments are likely.

Pakistan

• SITUATION

During the second half of July, isolated mature solitary adults were reported at a few places near the Indian border in the Nara Desert east of Sukkur (2742N/6854E) and in Cholistan near Islamgarh (2751N/7048E). Isolated mature solitary adults were also seen near the coast west of Karachi (2450N/6702E).

• FORECAST

Small-scale breeding is likely to have commenced and will continue during the forecast period in parts of Tharparkar, Nara and Cholistan deserts. Consequently, hatching will occur in August, causing locust numbers to increase slightly.

India

• SITUATION

No locusts were seen during surveys carried out in Rajasthan and Gujarat during the first fortnight of July.

During the second fortnight, isolated mature solitary adults were seen at one place near Bikaner (2801N/7322E).

• FORECAST

Small-scale breeding is likely to have commenced and will continue during the forecast period in parts of Rajasthan and Gujarat. Consequently, hatching will occur in August, 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 are also encouraged to prepare decadal bulletins summarizing the situation. All information should be sent by e-mail to the FAO/ECLC Desert Locust Information Service (eclc@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, 3 and 18 June.** Archives – Briefs
- **Current threats.** Information
- **Yemen outbreak.** Archives – Threats
- **Summer-winter outlook.** Information – Latest additions
- **SWAC Iran/Pakistan Joint Survey 2016 final report.** Publications – Reports



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- **CRC/SWAC 8th inter-regional workshop for Desert Locust Information Officers final report.** Publications – Reports
- **Results of Desert Locust Information Officer questionnaire on DLIS.** Activities – DLIS

2016 events. The following activities are scheduled or planned:

- **CLCPRO.** Regional training on crisis communication, Oran, Algeria (31 Jul - 3 Aug)
- **CLCPRO.** Regional training of trainers on Health and Environment standards, Agadir, Morocco (5-9 September)
- **CLCPRO.** Regional training for new survey officers 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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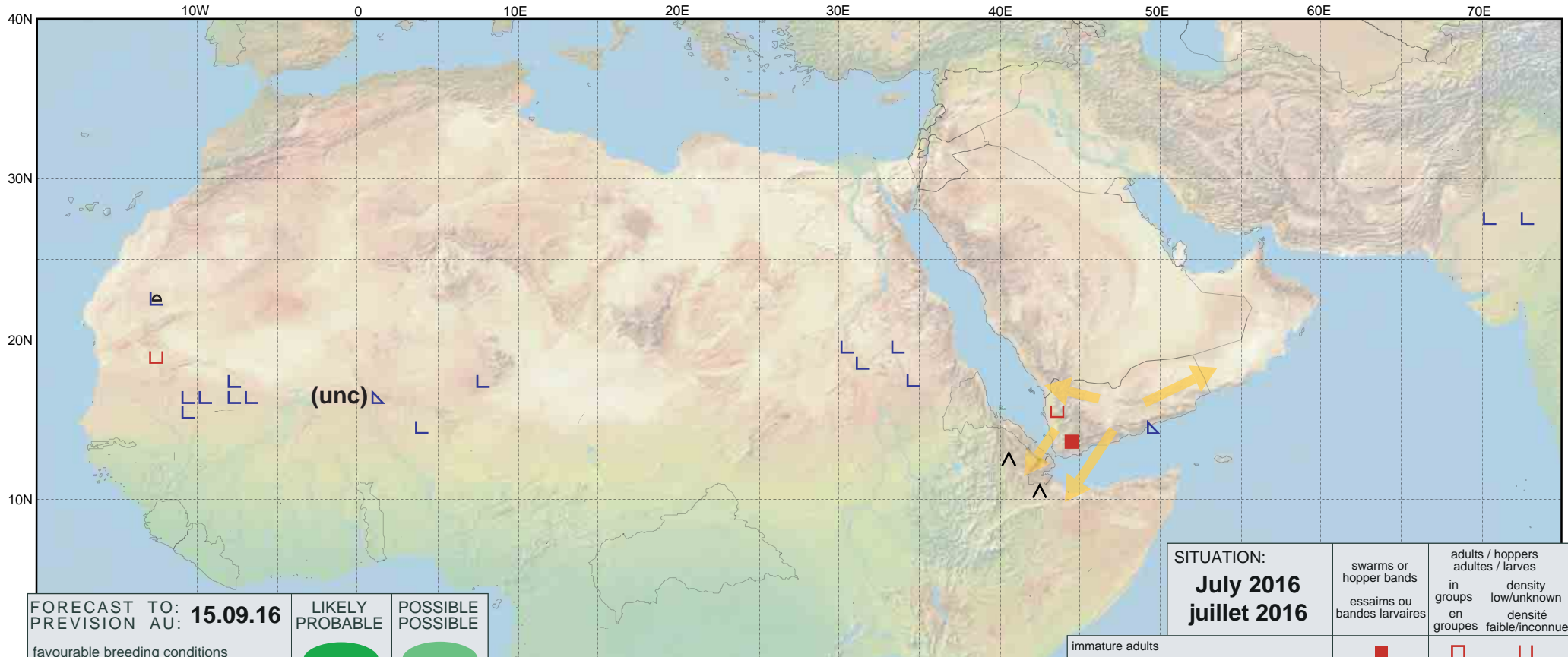
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Desert Locust Summary

Criquet pèlerin - Situation résumée



FORECAST TO: PREVISION AU: 15.09.16	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: July 2016 juillet 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)			