

warning level: **CAUTION**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 453

(5.07.2016)



General Situation during June 2016 Forecast until mid-August 2016

The Desert Locust situation remained extremely serious in Yemen during June. New swarms formed in the interior, some of which moved into the highlands and may continue to the Red Sea coast while others could still move to the summer breeding areas along the Indo-Pakistan border. Crop damage was reported in Yemen. More swarms are expected to form during July and another generation of breeding could commence in August. Survey and control operations remain limited due to insecurity. Elsewhere, breeding ended in southern Morocco and northern Mauritania, and adults moved towards summer breeding areas in southern Mauritania. Seasonal rains commenced in the northern Sahel between Mauritania and Sudan where small-scale breeding will cause locust numbers to increase slightly during the forecast period.

Western Region. Locust infestations declined in the southern portion of the Western Sahara in Morocco and in northern Mauritania due to drying conditions and control operations (375 ha) in June. Adults and a few small groups that escaped detection or control moved towards the summer breeding areas of southern and southeastern Mauritania. Isolated adults were present in north and west Niger. As seasonal rains started in the northern Sahel of West Africa in mid-June, small-scale breeding is expected to occur during the forecast period, causing locust numbers to increase primarily in Mauritania and, to a

lesser extent in Mali, Niger and Chad. In Northwest Africa, ground teams treated a few small hopper groups that formed from local breeding in the Central Sahara of Algeria.

Central Region. The locust situation deteriorated further in Yemen as hopper bands continued to form in the interior, supplemented by new swarm formation that led to crop damage and an extension of the current threat to the central highlands and perhaps the Red Sea coast. Limited surveys and control operations (365 ha) were undertaken despite prevailing insecurity. If the swarms remain in Yemen, another generation of breeding could occur. However, there remains a risk that some swarms could move to the southern coast and be carried by strong south-westerly monsoon winds through coastal areas of Oman to the Indo-Pakistan summer breeding area. Elsewhere, the situation remained calm. Isolated adults were present in northern Oman, on the northwest coast of Somalia and on the northern Red Sea coast in Eritrea. Seasonal rains started in the interior of Sudan and western Eritrea where small-scale breeding will cause locust numbers to increase slightly.

Eastern Region. No locusts were reported and the situation remained calm in the region during June. Small-scale breeding is likely to occur with the arrival of the monsoon in July, causing locust numbers to increase slightly. There is a low to moderate risk that a few small swarms from Yemen could arrive along the Indo-Pakistan border.

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 June 2016

Seasonal rains started in the summer breeding areas of the northern Sahel in West Africa and Sudan. Vegetation dried out in Northwest Africa. Mainly warm and dry conditions prevailed in Southwest Asia.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) continued its seasonal movement northwards. By the third decade of June, it had reaching further north than usual in Mali (Kidal), Niger (In Abangharit) and Chad (Kalait) but remained further south than usual in southeast Mauritania. Consequently, light rain began to fall in parts of the summer breeding areas in the northern Sahel during the second half of the month. Although ecological conditions were dry in most areas during June, the rains should allow annual vegetation to become green in July. In Mauritania, rains started in the southeast during the second decade. In Mali, good rains fell in the northeast near Tin Essako and to a lesser extent in the Adrar des Iforas, Timetrine, Tilemsi Valley and Tamesna. In Niger, good rains fell in Tamesna, Air Mountains, on the Djado Plateau and in central areas. In Chad, good rains fell in Kanem, Batha, Ouaddai, Bilthine and in the northeast near Fada. In Northwest Africa, light rain fell along both sides of the Algerian-Libyan border while good rains fell in southern Algeria east of Tamanrasset and along the borders of Mali and Niger. Ecological conditions had dried out in the spring breeding areas south of the Atlas Mountains and in northern Mauritania.

In the **Central Region**, the Inter-Tropical Convergence Zone (ITCZ) continued its seasonal movement northwards over Sudan, reaching further north than usual in North Kordofan (Sodori). As a result, light rain began to fall in parts of the summer breeding areas in White Nile State, followed by northern Darfur and Kordofan. Light rain fell in parts of the western lowlands in Eritrea. These rains should allow annual vegetation to become green during July. In the Horn of Africa, light rain fell on the northern Somali plateau at mid-month. Vegetation had dried out in most places on the northwest coast but was green on the plateau. In the Arabian Peninsula, good rains

fell in the Yemeni Highlands and southern portions of the Asir Mountains in southwest Saudi Arabia. Some of these rains extended onto the Red Sea coastal plains. Although no rain fell in the interior of Yemen, vegetation remained green in many areas.

In the **Eastern Region**, dry conditions prevailed during June. Pre-monsoon rains fell in west Rajasthan, India and adjacent border areas of Pakistan at times during the month. By the end of June, the northern extent of the monsoon had reached southern portions of Gujarat.



Area Treated

Algeria	38 ha (June)
Mauritania	375 ha (June)
Yemen	365 ha (June)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During June, breeding nearly ended in the north where only isolated late instar solitarious hoppers remained at mid-month near Zouerate (2244N/1221W). There was an influx of immature and mature solitarious and transiens adults, including a few groups, from adjacent areas of southern Morocco mixed with local populations that moved south in Inchiri and Adrar through several oases towards the summer breeding areas in the south and southeast. By late June, adults had reached Tidjikja (1833N/1126W) and N'Beika (1758N/1215W) in western Tagant. Locust densities declined during the month from 8,200 adults/ha to 3,000 adults/ha due to control operations and dispersion. Ground teams treated 375 ha during June.

• FORECAST

Breeding will commence with the onset of the seasonal rains in the south and southeast, where egg-laying and hatching will cause locust numbers to increase slightly.

Mali

• SITUATION

No locust activity was reported during June.

• FORECAST

Low numbers of adults are likely to be present in parts of the Adrar des Iforas. Small-scale breeding

will commence in the Adrar des Iforas, Tilemsi Valley, Timetrine and Tamesna, causing locust numbers to increase slightly.

Niger

• SITUATION

During June, isolated immature solitary adults were seen in the northern Air Mountains south of the Algerian border near Tidounane (2021N/0848E), in the eastern Air near Timia (1809N/0846E), and on the southeastern Tamesna Plains near In Gall (1651N/0701E). Isolated mature solitary adults were reported in Sahelian pasture areas near Tillaberi (1428N/0127E) in the west.

• FORECAST

Small-scale breeding will commence on the Tamesna Plains and in central areas, causing locust numbers to increase slightly. There is a low risk that a few small groups may arrive in this area from the north.

Chad

• SITUATION

No locust activity was reported during June.

• FORECAST

Small-scale breeding will commence in northern portions of Kanem and Batha, in Bilthine and in the northeast, causing locust numbers to increase slightly.

Senegal

• SITUATION

No locust activity was reported during June.

• 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 June, hopper infestations of all instars persisted near irrigated perimeters in the Adrar (2753N/0017W) area in the central Sahara where a few small groups formed at densities of up to 8 hoppers/m², mixed with isolated immature and mature solitary adults. Ground teams treated 38 ha during the month.

• FORECAST

Low numbers of adults may persist near irrigated areas in the Central Sahara. Small-scale breeding may occur in areas of recent rainfall in the extreme south.

Morocco

• SITUATION

During the first week of June, no locusts were seen in the central part of the Western Sahara near Oum Dreyga (2406N/1316W).

• FORECAST

No significant developments are likely.

Libya

• SITUATION

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

• FORECAST

No significant developments are likely.

Tunisia

• SITUATION

No locust activity was reported during June.

• FORECAST

No significant developments are likely.

CENTRAL REGION

Sudan

• SITUATION

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

• 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.

Eritrea

• SITUATION

During June, no locusts were seen during surveys on the northern coastal plains of the Red Sea between Afabet (1612N/3841E) and the Sudanese border except for low-density scattered mature solitary adults at two places between Mehimet (1723N/3833E) and Karora (1745N/3820E).

• FORECAST

Low numbers of adults are expected to appear in the western lowlands and breed on a small scale in areas that receive summer rains.

Ethiopia

• SITUATION

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



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- **FORECAST**

No significant developments are likely.

Djibouti

- **SITUATION**

No reports received.

- **FORECAST**

No significant developments are likely.

Somalia

- **SITUATION**

During June, low numbers of immature solitary adults were seen at three places on the northwest coast near Lughaye (1041N/4356E). Small-scale breeding occurred nearby where scattered mid-instar solitary hoppers were present.

- **FORECAST**

No significant developments are likely.

Egypt

- **SITUATION**

During June, no locusts were seen by surveys carried out 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 June.

- **FORECAST**

No significant developments are likely.

Yemen

- **SITUATION**

During June, hopper bands were present in the interior and immature swarms started to form in the second week in W. Hadhramaut near Sayun (1559N/4844E), on the plateau to the north, in Shabwah and near Bayhan (1452N/4545E). During the last week, some swarms moved west into the highlands and were seen near Al Hazm (1609N/4447E), west of Al Baydha (1405N/4542E), and south of Sana'a (1521N/4412E). Crop damage was reported in Hadhramaut, Al Jawf and Marib. Ground teams treated 355 ha of hopper bands near Marib, Bayhan and Sana'a. On the southern coast,

scattered solitary hoppers of all instars, fledglings and immature solitary adults were present near Zinjibar (1306N/4523E), Ahwar (1333N/4644E) and Bir Ali (1401N/4820E) and 10 ha were treated.

- **FORECAST**

More groups and small swarms will form in the interior between Marib and Thamud. If additional rainfall occurs, adults will remain in the interior and breed. Otherwise, groups and swarms will move into the highlands and perhaps reach the Red Sea coast. In both areas, egg-laying, hatching and band formation could commence by the end of the forecast period. There remains a moderate risk that swarms could move to the southern coast and then northeast along the Gulf of Aden towards the Indo-Pakistan summer breeding area.

Oman

- **SITUATION**

During June, locust numbers declined in the northern Sharqiya region near Bidiya (2222N/5856E) where only low-density immature and mature solitary adults remained in Wadi Batha. Elsewhere, no locusts were seen in the northern interior near Buraimi (2415N/5547E) and on the Musandam Peninsula.

- **FORECAST**

Locust numbers will decline in the north. There is a low to moderate risk that a few small swarms from Yemen may briefly appear in coastal areas between the Yemen border and Sur as they move towards the Indo-Pakistan summer breeding area.

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

- **FORECAST**

No significant developments are likely.

Pakistan

- **SITUATION**

No locusts were seen during surveys carried out in Sukkur (2742N/6854E) and Mirpurkhas (2533N/6905E) areas in June.

- **FORECAST**

Small-scale breeding will commence with the onset of the monsoon rains in Cholistan, Nara and Tharparkar deserts, causing locust numbers to increase slightly. There remains a low risk that a few swarms from Yemen may arrive in Tharparkar to coincide with the arrival of the summer monsoon rains.

India

- **SITUATION**

No locusts were seen during surveys carried out in Rajasthan and Gujarat during June.

- **FORECAST**

There remains a low to moderate risk that a few small swarms from Yemen may arrive in Gujarat and Rajasthan. Small-scale breeding will occur with the onset of the summer monsoon.

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.

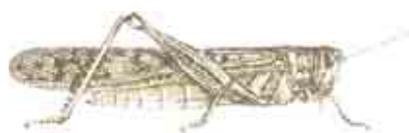
Locust reporting. During calm (green) periods, countries should report at least once/month and send RAMSES data with a brief interpretation. During caution (yellow), threat (orange) and danger (red) periods, often associated with locust outbreaks, upsurges and plagues, RAMSES output files with a brief 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/ECLo Desert Locust Information Service (ecllo@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



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- **Summer-winter outlook.** Information – Latest additions
- **SWAC Iran/Pakistan Joint Survey 2016 final report.** Publications – Reports
- **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.** 8th session, Dakar, Senegal (18-22 July)
- **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 (20 Sep - 5 Nov)
- **CRC.** Regional workshop on health and environment standards, Hurgada, Egypt (25-29 September)
- **SWAC.** Regional contingency planning workshop, Tehran, Iran (20-23 November)
- **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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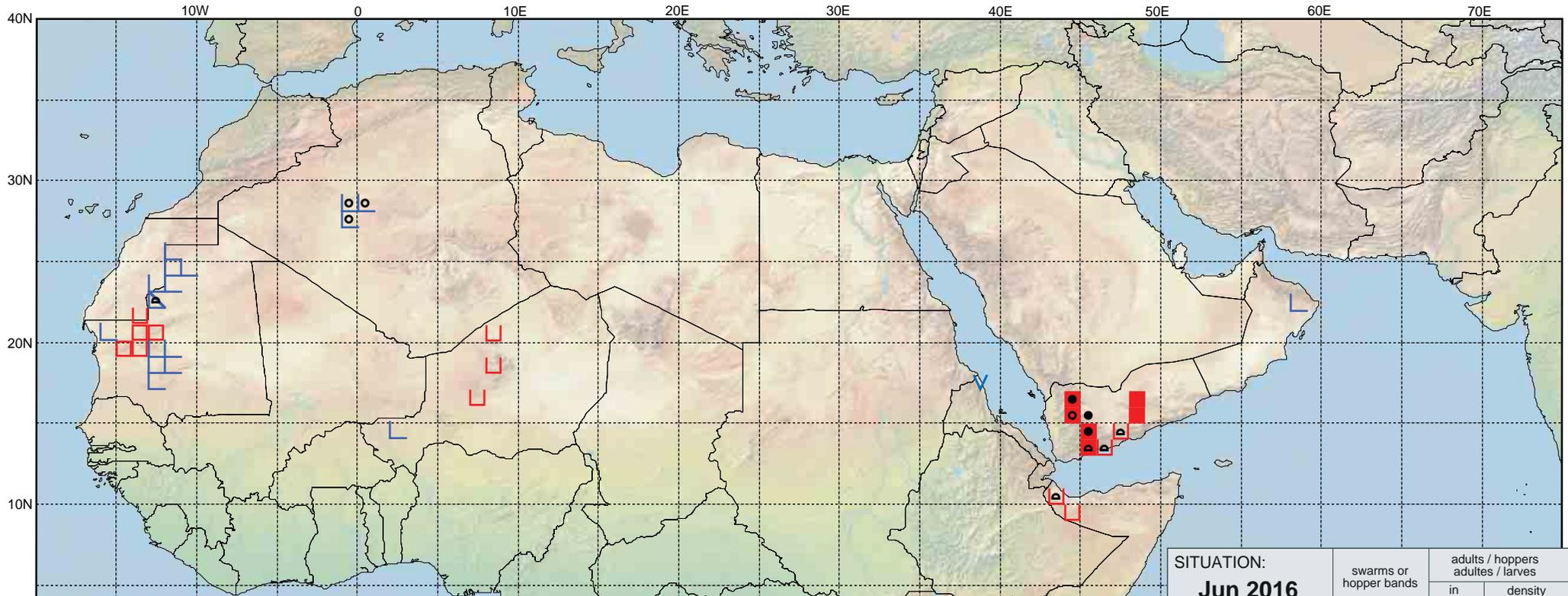
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Desert Locust Summary

Criquet pèlerin - Situation résumée



FORECAST TO: PREVISION AU:	15.08.16	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: Jun 2016 juin 2016	swarms or hopper bands	adults / hoppers adultes / larves	
	essaims ou bandes larvaires	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)			