

warning level: **CAUTION**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 452



General Situation during May 2016
Forecast until mid-July 2016

(3.06.2016)

The Desert Locust situation in Yemen continued to deteriorate during May as more hopper groups and bands formed in the interior as well as on the Aden coast. Insecurity and remoteness are hampering survey and control efforts. Consequently, swarms will form from early June onwards and are likely to stay in the interior where they could mature and lay eggs if conditions remain favourable until at least mid-July. Otherwise, swarms are likely to move south to the Gulf of Aden where strong monsoon winds could carry them across the Arabian Sea to the Indo-Pakistan summer breeding area. Some of the swarms may transit along the eastern coast of Oman. All efforts are required to increase survey and control operations in Yemen wherever possible and to remain vigilant in other countries. Control operations continued against adult groups in the southern part of the Western Sahara in southern Morocco and adjacent areas of northern Mauritania. A limited number of groups are likely to reach the summer breeding areas in southern Mauritania and lay eggs with the onset of the seasonal rains. Control operations were carried out against locally-bred adult groups in central Algeria.

Western Region. Ground control operations declined during May in the southern portion of the Western Sahara in Morocco and in northern Mauritania, treating 218 ha and 762 ha respectively

of adult groups as well as hopper groups in Mauritania. As vegetation dried out further, adults rapidly increased in density and several groups moved south within this area to oases in western Mauritania. This movement is expected to continue during the forecast period when adult groups are likely to reach the summer breeding areas in southern Mauritania and lay eggs with the onset of the rains. Hatching could commence by the end of the forecast period if early rains and egg-laying occur. In the central Sahara of Algeria, ground teams treated 651 ha of adult groups that formed from local breeding. Scattered adults were reported in southwest Libya, southern Algeria, northern Mali and in the Air Mountains of northern Niger.

Central Region. The situation deteriorated further in the interior of Yemen where more hopper groups and bands formed from local breeding throughout May. Although the full extent of infestations is not well known due to insecurity, it appears that breeding has occurred within a large portion of the interior from Marib to Thamud as well as on the Aden coastal plains. Only limited control operations could be carried out, some by burning hopper bands. Consequently, swarms will almost certainly form from early June onwards. If vegetation remains green, the swarms are expected to remain in the interior and mature with the possibility of another generation of egg-laying by mid-July. On the other hand, if vegetation dries out, then the swarms are likely to 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. Small-scale breeding continued in northeast Oman and occurred near crops in southern Egypt. Good rains fell on the plateau in northern Somalia and eastern Ethiopia.

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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Eastern Region. No locusts were reported and the situation remained calm in the region during May. There is a low to moderate risk that a few small swarms could arrive along the Indo-Pakistan border if vegetation dries out in the interior of Yemen.



Weather & Ecological Conditions in May 2016

Good rains fell in parts of the spring breeding areas in Northwest Africa, the interior of Saudi Arabia and the Horn of Africa. Good rains also fell along the Red Sea and on both sides of the Indo-Pakistan border. Vegetation continued to dry out in southern Morocco and northern Mauritania.

In the **Western Region**, vegetation continued to dry out in northern Mauritania and in the Adrar Settouf area of Western Sahara in southern Morocco during May. In Algeria, breeding conditions remained favourable near cropping areas in the northwest near Beni-Abbes and Bechar, in the central Sahara between Adrar and In Salah and to a lesser extent in the eastern Sahara. Good rains fell primarily in the central and eastern Sahara where Illizi reported 40 while showers fell near Tamanrasset (20 mm) where vegetation was drying out. In Libya, good rains fell at times during May in the west and southwest but vegetation remained dry. In West Africa, the Inter-Tropical Convergence Zone (ITCZ) continued its seasonal movement northwards but remained south of the summer breeding area in the northern Sahel. Its position was nearly normal, having reached Nara and Gao (Mali), Abalak (Niger) and Ati (Chad) by the end of the month. In Niger, moderate rains fell near Agadez while light rains were reported in parts of the Air Mountains but vegetation remained mainly dry. Traces of rain were reported in the summer breeding areas of southeastern Mauritania.

In the **Central Region**, good rains fell primarily during the first decade of May along the Red Sea coast of Sudan and northern Eritrea, and in the central interior of Saudi Arabia south of Gassim. The rains extended to the Asir Mountains and the Yemen Highlands where runoff may reach the coastal and

interior plains. Good rains also fell on the western side of the Red Sea Hills in eastern Sudan between Derudeb and Sinkat. During the remainder of the month, little rain fell in these areas except for the Yemen Highlands. Although no rain fell in the interior of Yemen, ecological conditions remained favourable for breeding in currently infested areas as a result of rainfall in April. In the Horn of Africa, good rains fell during the first two decades of May on the plateau in northern Somalia and in adjacent areas of eastern Ethiopia where ecological conditions were favourable for breeding.

In the **Eastern Region**, light rains may have fallen during the first decade of May in parts of the interior in southeast Iran and southwest Pakistan between Suran and Panjgur. However, ecological conditions remained mostly dry in both countries. Good rains fell in the Indo-Pakistan summer breeding areas from Lasbela to Rahimyar Khan and Jaisalmer during the first decade of the month.



Area Treated

Algeria	651 ha (May)
Mauritania	762 ha (May)
Morocco	218 ha (May)
Yemen	159 ha (May)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During the first half of May, a few small groups of fifth instar hoppers at densities up to 60 hoppers/m² remained near Zouerate (2244N/1221W) mixed with immature and a few mature solitairous and *transiens* adults and a few groups at densities up to 8,500 adults/ha. Scattered immature and mature adults and some groups moved south into southwest Adrar, reaching about 100 km south of Oujeft (2003N/1301W). During the second half of the month, several immature and mature groups at densities up to 30,000 adults/ha were reported to have arrived in the north and northwest and moved south to oases in Adrar. Ground teams treated 762 ha during May.

• FORECAST

Adult groups and perhaps a few small swarms may still form early in the forecast period in southern Tiris-Zemmour, supplemented by similar populations

arriving from the west. These will move south to oases in Adrar, Tagant and Trarza, continuing to the summer breeding areas where egg-laying will commence with the onset of the seasonal rains. If early rains fall, hatching could occur by mid-July.

Mali

• SITUATION

During May, isolated immature solitary adults persisted in the Adrar des Iforas west of Aguelhoc (1927N/0052E).

• FORECAST

Low numbers of adults are likely to persist in parts of the Adrar des Iforas. Small-scale breeding will commence with the onset of the summer rains.

Niger

• SITUATION

During May, isolated mature solitary adults were reported in the southeastern Air Mountains east of Timia (1809N/0846E) and one mature adult was seen in Agadez (1658N/0759E).

• FORECAST

Small-scale breeding is likely to commence on the Tamesna Plains with the onset of the summer rains towards the end of the forecast period. 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 May.

• FORECAST

No significant developments are likely.

Senegal

• SITUATION

No reports received.

• 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 May, locust numbers continued to increase in the central Sahara where a number of small groups of hoppers at densities up to 20 hoppers/m² and immature and mature adults at densities up to 4,000 adults/ha formed between Adrar (2753N/0017W) and In Salah (2712N/0229E) as a result of local breeding. Ground teams treated 651 ha during the month.

Scattered immature and mature solitary adults were present west of Tamanrasset (2250N/0528E) and, to a lesser extent, east of Illizi (2630N/0825E) and near Djanet (2434N/0930E). No locusts were present near Bechar (3135N/0217W) and Tindouf (2741N/0811W).

• FORECAST

As vegetation dries out, small groups of adults will continue to form in the central Sahara. Some of these adult groups may move south towards the northern Sahel.

Morocco

• SITUATION

During the first two decades of May, small groups of immature and mature *transiens* and gregarious adults, at densities of up to 5 adults/m², persisted in the southern part of the Western Sahara west of Aousserd (2233N/1419W). Immature and mature solitary and *transiens* adults, and a few groups, at densities up to 1,000 adults/ha were present between Bir Gandouz (2136N/1628W) and Tichla (2138N/1453W). During the last decade, very small groups of immature and mature solitary and *transiens* adults were discovered between Oum Dreyga (2406N/1316W) and Guelta Zemmur (2508N/1222W) at densities up to 14,000 adults/ha. Ground teams treated 218 ha in May.

• FORECAST

Small but dense groups may still form in the Western Sahara between Tichla and Guelta Zemmur early in the forecast period and move towards the summer breeding areas in southern Mauritania.

Libya

• SITUATION

During May, scattered immature solitary and *transiens* adults were seen at two places in the southwest near Ghat (2459N/1011E).

• FORECAST

Small-scale breeding may occur in areas of recent rainfall in the southwest near Ghat during June.

Tunisia

• SITUATION

No locust activity was reported during May.

• FORECAST

No significant developments are likely.



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CENTRAL REGION

Sudan

• **SITUATION**

No reports received.

• **FORECAST**

Isolated adults may be present and could breed on a small scale along the Nile Valley in Northern and River Nile states. Low numbers of adults may start to appear in summer breeding areas of Northern Kordofan and Darfur where small-scale breeding is expected to commence with the onset of the summer rains.

Eritrea

• **SITUATION**

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

• **FORECAST**

Low numbers of adults may appear in the western lowlands and breed on a small scale once summer rains commence.

Ethiopia

• **SITUATION**

During May, no locusts were seen in the Somali region. Further details are awaited.

• **FORECAST**

Isolated adults may appear in areas of recent rainfall in the eastern region between Ayasha and Jijiga, and breed on a small scale.

Djibouti

• **SITUATION**

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

• **FORECAST**

No significant developments are likely.

Somalia

• **SITUATION**

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

• **FORECAST**

Scattered adults may appear in recent areas of rainfall on the plateau between Boroma and Burao and breed on a small scale in early June.

Egypt

• **SITUATION**

During May, isolated mature solitary adults were seen at two places near crops in the Tushka (2247N/3126E) area, one in which isolated fourth instar solitary hoppers and egg-laying adults were also present. No locusts were seen on the Red Sea coast between Berenice (2359N/3524E) and the Sudan border, and along both sides of Lake Nasser.

• **FORECAST**

Small-scale breeding will occur near crops in the Tushka area but locust numbers will remain low.

Saudi Arabia

• **SITUATION**

During May, no locusts were seen during surveys carried out in the spring breeding areas of the interior between Khaybar (2542N/3917E) and Gassim (2621N/4358E), and west of Riyadh (2439N/4642E). No locusts were seen on the Red Sea coast between Jeddah (2130N/3910E) and Umm Lajj (2501N/3716E).

• **FORECAST**

No significant developments are likely.

Yemen

• **SITUATION**

During May, numerous small, high density hopper bands were present in wadis on the plateau north of W. Hadhramaut between Thamud (1717N/4955E) and Minwakh (1650N/4812E) mixed with scattered immature and mature adults. Adult groups were laying eggs until the 12th. By the end of the month, fledging had commenced. Limited ground control operations were carried out, treating 39 ha at mid-month. Small groups of early instar hoppers bands were reported in the interior between Safer (1534N/4547E) and Al Abr (1608N/4714E) and near Bayhan (1452N/4545E), and on the southern coast near Zinjibar (1306N/4523E) from the second week onwards. Ground teams treated 120 ha in the Bayhan area. Isolated solitary hoppers and mature adults were present on the coast west of Aden (1250N/4503E).

• **FORECAST**

Groups and small swarms will form in the interior between Marib and Thamud and on the southern coast east of Aden from early June onwards. The adults are likely to remain in the interior and mature as long as vegetation stays green. This could allow another generation of breeding to commence by the end of the forecast period. However, if vegetation dries out, swarms are likely to move to the southern coast and then northeast along the Gulf of Aden towards the Indo-Pakistan summer breeding area.

Oman

• SITUATION

During May, isolated second to fifth instar solitarious hoppers and mature solitarious adults were present in the northern Sharqiya region near Bidiya (2222N/5856E). Isolated mature adults were present about 165 km south of Ibri (2314N/5630E). Elsewhere, no locusts were seen in the northern interior, Musandam Peninsula and in the south near Shehan (1746N/5229E) close to the Yemen border.

• 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 May, no locusts were seen on the southeast coast near Chabahar (2517N/6036E).

• FORECAST

No significant developments are likely.

Pakistan

• SITUATION

During May, no locusts were seen on the coast west of Karachi near Lasbela (2614N/6619E) and Uthal (2548N/6637E).

• FORECAST

If swarms form and vegetation dries out in the interior of Yemen, a few swarms could migrate across the Arabian Sea and 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 May.

• FORECAST

If swarms form and vegetation dries out in the interior of Yemen, a few swarms could migrate across the Arabian Sea and arrive in Gujarat and Rajasthan to coincide with the arrival of the summer monsoon rains.

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/ECLD Desert Locust Information Service (eclod@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)



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- **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, 2 and 18 May.** Archives – Briefs
- **Google Earth Engine.** Activities – DLIS
- **Weather & remote sensing links updated.** Information – Links

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)

- **SWAC.** Regional contingency planning workshop, Tehran, Iran (20-23 November)
- **SWAC.** 30th session, Kabul, Afghanistan (12-14 December) [to be confirmed]



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.



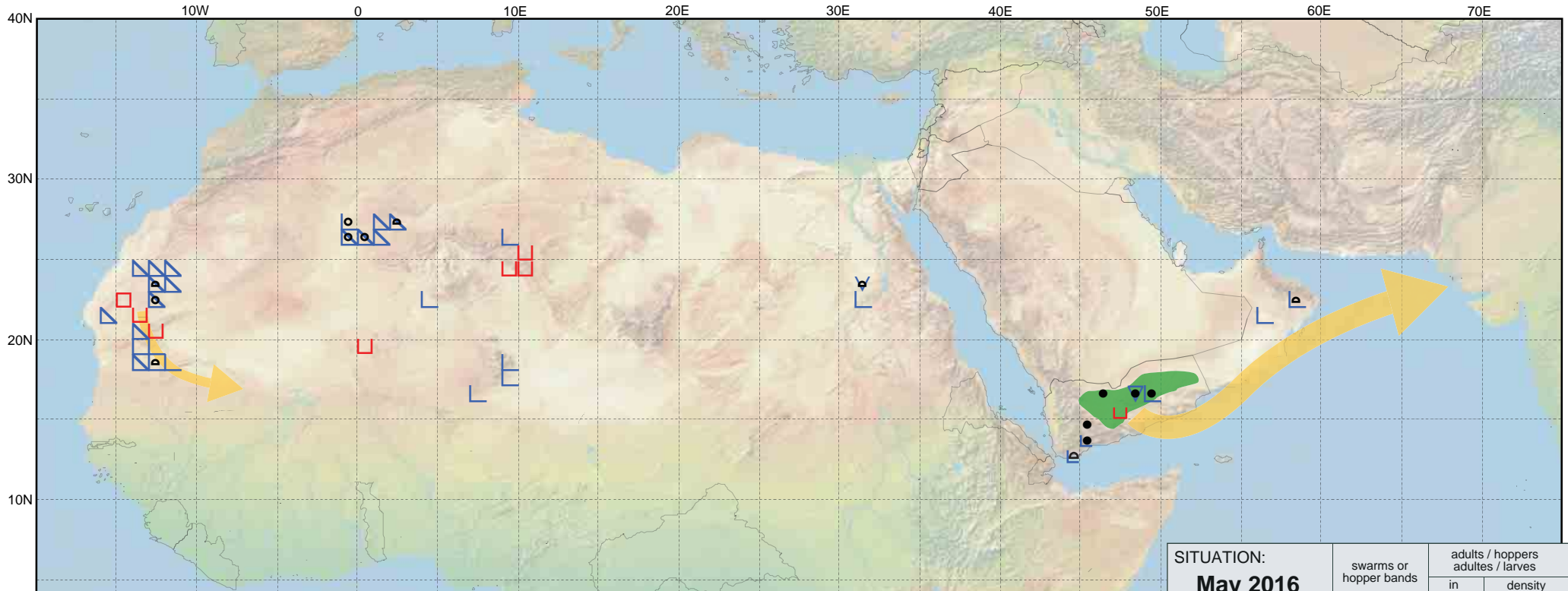
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Desert Locust Summary

Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU: 15.07.16	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: May 2016 mai 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)			