

warning level: **CAUTION**

# DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 451

(2.05.2016)



## General Situation during April 2016 Forecast until mid-June 2016

The Desert Locust situation deteriorated further during April in Yemen where adult groups and small swarms formed on the southern coast, moved to the interior and laid eggs. By the end of the month, hatching commenced and further widespread hatching and formation of hopper groups and bands are expected to occur during May within a large area where survey and control operations are difficult due to remoteness and insecurity. This could lead to the formation of new swarms by mid-June. In Northwest Africa, control operations continued against groups of hoppers and adults in the southern part of the Western Sahara in southern Morocco and adjacent areas of northern Mauritania. There is a risk that some groups and perhaps a few small swarms could move towards southern Mauritania and maybe reach Senegal while other groups may move to central Algeria where local breeding was underway. Elsewhere, the situation remained calm.

**Western Region.** Ground control operations continued during April in the southern portion of the Western Sahara in Morocco and in northern Mauritania, treating 6,502 ha and 1,358 ha respectively of hopper and adult groups as well as a few small hopper bands in Morocco. As vegetation was drying out, adult groups started to move within this area and by the end of the month small groups were seen moving south in western Mauritania. Since vegetation will continue to become dry, adult groups

and perhaps a few small swarms are likely to form in the currently infested areas during May and move into oases in western and central Mauritania and perhaps continue towards the summer breeding areas in southern Mauritania and maybe reach northern Senegal. There is also a possibility that some of these adults will move northeast to the central Sahara in Algeria where scattered adults were already present and breeding on a small scale in April. All efforts are required to monitor the situation carefully and undertake control when necessary in the concerned countries. Elsewhere, low numbers of adults were present in northern Mali and Niger.

**Central Region.** The situation worsened in Yemen as adult groups and a few small swarms formed on the southern coast in early April and moved into the interior where widespread rains led to rapid maturation and egg-laying. Hatching and band formation commenced by the end of the month. The extent and scale of current breeding are not well known due to the difficulty of undertaking surveys. However, infestations are likely to be scattered throughout a large, remote and insecure area where control operations cannot be carried out easily. Widespread hatching is expected during May that will cause numerous hopper groups and bands to form, followed by a high risk of swarm formation in June. Scattered adults were present on the Red Sea coast in Yemen and southern Eritrea where small-scale breeding may occur during the forecast period. Small-scale breeding occurred in northern Oman and may take place in the interior of Saudi Arabia during May.

**Eastern Region.** The situation remained calm during April. Small-scale breeding occurred in southeast Iran but locust numbers remained low. No significant developments are likely during the forecast period.

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.

Telephone: +39 06 570 52420 (7 days/week, 24 hr)

Facsimile: +39 06 570 55271

E-mail: [eclo@fao.org](mailto:eclo@fao.org)

Internet: [www.fao.org/ag/locusts](http://www.fao.org/ag/locusts)

Facebook: [www.facebook.com/faolocust](https://www.facebook.com/faolocust)

Twitter: [twitter.com/faolocust](https://twitter.com/faolocust)



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### Weather & Ecological Conditions in April 2016

**Widespread good rains fell in the spring breeding areas of the Arabian Peninsula where breeding conditions were favourable. Good rains also fell in the Horn of Africa. Ecological conditions were drying out in Northwest Africa.**

In the **Western Region**, very little rain fell during April. In Northwest Africa, vegetation was drying out in northern Mauritania and in the Adrar Settouf area of Western Sahara in southern Morocco. Nevertheless, conditions remained favourable for locust breeding and survival in some areas, mainly between Aousserd and Zouerate, Mauritania and in a few places north of Zouerate. In Algeria, light to moderate rains fell in the northwest near Naama and El Bayadh. Vegetation was starting to dry out in the central Sahara and remained dry in the south. In the northern Sahel of West Africa, dry conditions prevailed but light rains may have fallen in southern Tamesna between Menaka, Mali and Tahoua, Niger during the first decade of the month.

In the **Central Region**, good rains fell in the spring breeding areas of the interior of the Arabian Peninsula during April, causing floods in some places. Widespread moderate to heavy rains fell in the interior of Yemen between Thamud and Marib during the first two decades, in Saudi Arabia east of the Asir Mountains and as far north as Hail throughout the month, and in northern Oman as well as on the central coast and subcoastal areas south of Hayma during the first decade. Consequently, ecological conditions were favourable for breeding in all of these areas. On the Red Sea coast, light to moderate rains fell at mid-month in Yemen and in Saudi Arabia as far north as Thuwal, on the central coast of Sudan between Port Sudan and Mohamed Qol, in Eritrea between Mehimet and Embere as well as on the southern coast from Mersa Fatma to Djibouti. In the Horn of Africa, moderate to heavy rains fell throughout the month in eastern Ethiopia and on the escarpment and plateau in northern Somalia. As a result, ecological conditions are likely to become favourable for breeding in these areas.



### Area Treated

Algeria	26 ha (Apr)
Mauritania	1,358 ha (Apr)
Morocco	6,502 ha (Apr)



### Desert Locust Situation and Forecast

( see also the summary on page 1 )

#### WESTERN REGION

##### **Mauritania**

###### • SITUATION

During April, solitary hoppers and groups of transiens hoppers at densities up to 900 hoppers/m<sup>2</sup> mixed with groups of immature and mature adults at densities up to 6,800 adults/ha persisted near Zouerate (2244N/1221W) and south of Bir Moghreïn (2510N/1135W). Egg-laying continued in some areas during the first two decades. Some groups of adults may have arrived from adjacent areas to the west. On 26 April, small adult groups were seen moving south of Atar (2032N/1308W). Ground teams treated 1,358 ha during April.

###### • FORECAST

*Hatching is likely to continue between Zouerate and Bir Moghreïn early in the forecast period. As vegetation dries out, small groups of hoppers and adults, and perhaps a few small swarms, will form mainly near Zouerate. Some of these could move northeast towards central Algeria while others are likely to move south and appear in oases in Adrar, Tagant and Trarza, and perhaps continue to the Senegal River Valley and summer breeding areas.*

##### **Mali**

###### • SITUATION

During April, immature and mature solitary adults persisted in the Adrar des Iforas between Aguelhoc (1927N/0052E) and Ti-n-kar (1926N/0022W). A mature adult group was reported on the 11<sup>th</sup> near Aguelhoc.

###### • FORECAST

*Low numbers of adults are likely to persist and form a few small groups in parts of the Adrar des Iforas and perhaps Timetrine and the Tilemsi Valley.*

## Niger

### • SITUATION

During April, isolated mature solitarious adults were reported on the Tamesna Plains at two places in W. Anou-n-Aguerouf between Agadez (1658N/0759E) and Arlit (1843N/0721E).

### • FORECAST

*No significant developments are likely.*

## Chad

### • SITUATION

No reports were received.

### • FORECAST

*No significant developments are likely.*

## Senegal

### • SITUATION

No locust activity was reported during the first half of April.

### • FORECAST

*There is a low risk that a few groups and maybe a small swarm could arrive in the north from Mauritania.*

## 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 April, an increasing number of scattered mature solitarious adults appeared in the central and southern Sahara near Adrar and between In Salah (2712N/0229E) and Tamanrasset (2250N/0528E). Adults were laying eggs near Adrar and scattered early instar solitarious hoppers were seen at one place. A group of mature adults was reported southeast of In Salah. Ground teams treated 26 ha. No locusts were seen in the west and northwest.

### • FORECAST

*Small-scale breeding will cause locust numbers to increase slightly in the central Sahara with hatching continuing in May. Fledging of current hoppers will commence from mid-month. Small groups and perhaps a few small swarms from adjacent areas in Morocco and Mauritania could initially appear near Tindouf, move towards the central Sahara and breed, especially in any areas that receive rainfall.*

## Morocco

### • SITUATION

During April, locust infestations persisted in the southern part of the Western Sahara where late instar hoppers, hopper groups and a few hopper bands mixed with groups of immature and mature adults

concentrated in small areas that remained green to the west of Aousserd (2233N/1419W) and Tichla (2138N/1453W). Locust densities progressively increased during the month, reaching 7 adults/m<sup>2</sup> and 60 hoppers/m<sup>2</sup>. Ground teams treated 6,502 ha during April. In the northeast, isolated immature solitarious adults appeared near Figuig (3207N/0113W).

### • FORECAST

*As vegetation dries out, groups of adults and perhaps a few small swarms are likely to form in the Western Sahara between Tichla and Aousserd. Some of these adults may move northeast to the Draa Valley in May if rainfall occurs; otherwise, they are likely to move into adjacent areas of northwest and southwest Mauritania.*

## Libya

### • SITUATION

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

### • FORECAST

*Scattered adults may be present in the southwest near Ghat and breeding on a small scale. No significant developments are likely.*

## Tunisia

### • SITUATION

No locust activity was reported during April.

### • FORECAST

*No significant developments are likely.*

## CENTRAL REGION

### Sudan

#### • SITUATION

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

#### • FORECAST

*Isolated adults may appear and breed on a small scale along the Nile Valley in Northern and River Nile states. No significant developments are likely.*

### Eritrea

#### • SITUATION

During April, scattered immature solitarious adults were present on the southern coast of the Red Sea near Tio (1441N/4057E).



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### • FORECAST

*Low numbers of adults are likely to persist near Tio where small-scale breeding may occur in areas of recent rainfall.*

### Ethiopia

#### • SITUATION

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

#### • FORECAST

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

### Djibouti

#### • SITUATION

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

#### • FORECAST

*No significant developments are likely.*

### Somalia

#### • SITUATION

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

#### • FORECAST

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

### Egypt

#### • SITUATION

During April, no locusts were seen on the Red Sea coast between Shalatyn (2308N/3535E) and the Sudan border, and along both sides of Lake Nasser.

#### • FORECAST

*No significant developments are likely.*

### Saudi Arabia

#### • SITUATION

During April, no locusts were seen during surveys carried out in the spring breeding areas of the interior near Tabuk (2823N/3635E), Hail (2731N/4141E), Gassim (2621N/4358E), Riyadh (2439N/4642E), Wadi Dawasir (2028N/4747E) and near the Yemen border between Najran (1729N/4408E) and Sharawrah (1729N/4706E). No locusts were also seen on the northern Red Sea coast near Yenbo (2405N/3802E).

### • FORECAST

*Low numbers of adults may be present in the interior between Wadi Dawasir and Hail where small scale breeding could occur in areas of recent rainfall.*

### Yemen

#### • SITUATION

During the first half of April, groups of late instar hoppers and adults continued to form along one section of the southern coast that could be surveyed between Arkha (1340N/4724E) and Bir Ali (1401N/4820E). An increasing number of adults, groups and at least one swarm moved into the interior and dispersed over a wide area between Marib (1527N/4519E), Al Abr (1608N/4714E), W. Hadhramaut and Thamud (1717N/4955E), including the numerous small wadis in the plateau north of W. Hadhramaut. Egg-laying started at mid-month and hatching commenced by the end of the month, causing hopper groups and small bands to form.

On the Red Sea coast, isolated immature and mature solitarious adults were present in few places near Bajil (1458N/4314E) and Al Zuhrah (1541N/4300E).

#### • FORECAST

*A few more groups and small swarms may form on the southern coast in early May and move into the interior where breeding will continue within a large area between Marib and Thamud. Widespread hatching is expected to give rise to numerous hopper groups and bands during May and adult groups and small swarms in June.*

### Oman

#### • SITUATION

During April, isolated immature and mature solitarious adults were seen in the northern Sharqiya region near Bidiya (2222N/5856E) where breeding took place last month. Consequently, low numbers of first to fourth instar solitarious hoppers were present. Isolated immature adults were present near Ibri (2314N/5630E). Elsewhere, no locusts were seen in the northern interior and coastal areas and in the south between Thumrait (1736N/5401E) and Shehan (1746N/5229E).

#### • FORECAST

*Small-scale breeding will cause locust numbers to increase slightly in the northern interior and, to a lesser extent, on the Batinah coast and in central coastal and subcoastal areas (Hayma – Duqm – Marmul). At the end of the forecast period, there is a low to moderate risk that a few small swarms from Yemen may appear in southern areas.*

**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 April, isolated mature solitary adults were seen in the western portion of Jaz Murian, on the southeast coast near Chabahar (2517N/6036E) and in the interior near Zaboli (2707N/6140E). Small-scale breeding occurred in western Jaz Murian where isolated early instar solitary hoppers were present at a few places.

• **FORECAST**

*No significant developments are likely.*

**Pakistan**

• **SITUATION**

No reports were received during April.

• **FORECAST**

*No significant developments are likely.*

**India**

• **SITUATION**

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

• **FORECAST**

*No significant developments are likely.*

**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](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](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](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](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>)



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## Glossary of terms

The following special terms are used in the Desert Locust Bulletin when reporting locusts:

### **NON-GREGARIOUS ADULTS AND HOPPERS**

#### **ISOLATED (FEW)**

- very few present and no mutual reaction occurring;
- 0 - 1 adult/400 m foot transect (or less than 25/ha).

#### **SCATTERED (SOME, LOW NUMBERS)**

- enough present for mutual reaction to be possible but no ground or basking groups seen;
- 1 - 20 adults/400 m foot transect (or 25 - 500/ha).

#### **GROUP**

- forming ground or basking groups;
- 20+ adults/400 m foot transect (or 500+/ha).

### **ADULT SWARM AND HOPPER BAND SIZES**

#### **VERY SMALL**

- swarm: less than 1 km<sup>2</sup>      • band: 1 - 25 m<sup>2</sup>

#### **SMALL**

- swarm: 1 - 10 km<sup>2</sup>      • band: 25 - 2,500 m<sup>2</sup>

#### **MEDIUM**

- swarm: 10 - 100 km<sup>2</sup>      • band: 2,500 m<sup>2</sup> - 10 ha

#### **LARGE**

- swarm: 100 - 500 km<sup>2</sup>      • band: 10 - 50 ha

#### **VERY LARGE**

- swarm: 500+ km<sup>2</sup>      • 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)

- **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](http://www.fao.org/ag/locusts)) are:

- **Desert Locust situation updates, 5 and 18 April.** Archives – Briefs
- **Google Earth Engine.** Activities – DLIS
- **Weather & remote sensing links updated.** Information – Links

**2016 events.** The following activities are scheduled or planned:

- **CRC/SWAC.** 8<sup>th</sup> inter-regional workshop for Desert Locust information officers, Cairo, Egypt (22-26 May)
- **CLCPRO.** 8<sup>th</sup> session, Dakar, Senegal (18-22 July)
- **CLCPRO.** Regional training of trainers on Health and Environment standards, Dakar, Senegal (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.** 30<sup>th</sup> session, Kabul, Afghanistan (12-14 December) [to be confirmed]

#### 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.



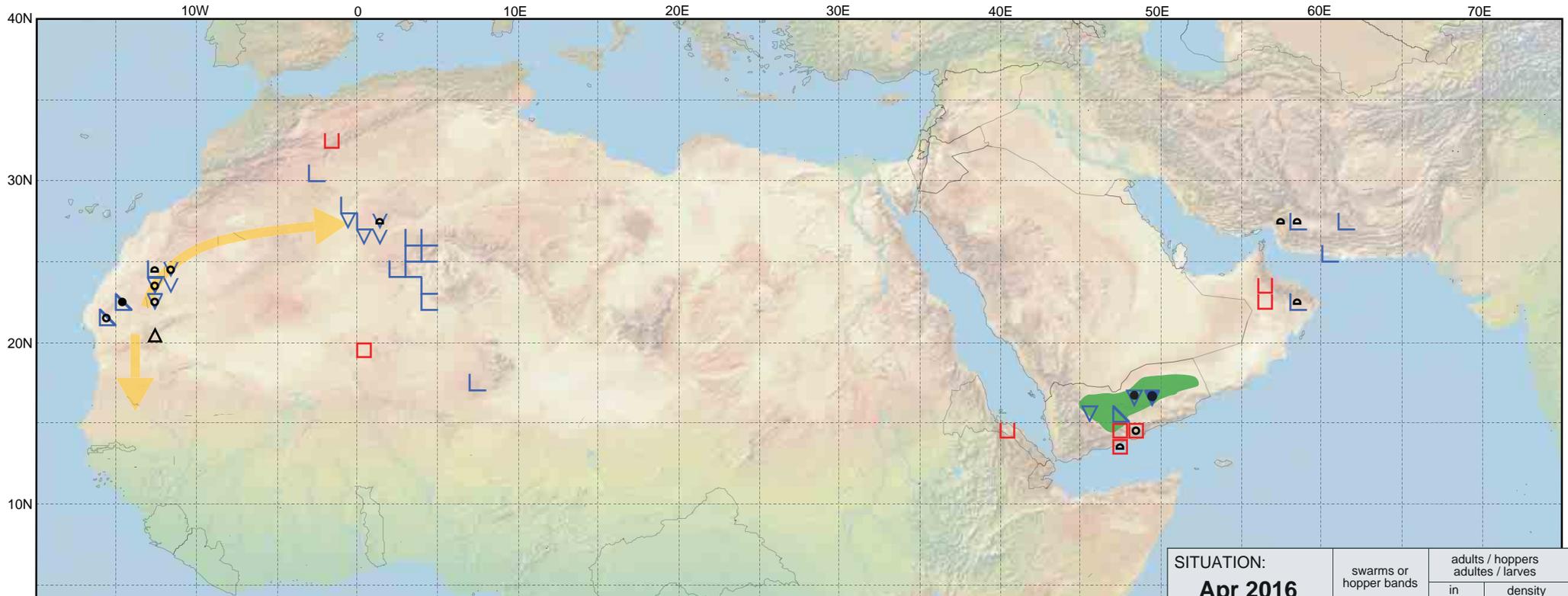
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# Desert Locust Summary

## Criquet pèlerin - Situation résumée



FORECAST TO: PREVISION AU: <b>15.06.16</b>	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: <b>Apr 2016</b> <b>avr 2016</b>	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)			