

warning level: **CAUTION**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 449

(3.03.2016)



General Situation during February 2016 Forecast until mid-April 2016

Desert Locust breeding continued during February in northern Mauritania and in adjacent areas of Western Sahara where locusts formed small groups. Ground control operations increased in both areas. Although breeding is likely to continue during the forecast period and cause a further increase in locust numbers and the formation of hopper and adult groups, the situation is expected to remain under control. As temperatures increase, low to moderate numbers of adults could move to spring breeding areas south of the Atlas Mountains in Morocco and Algeria and breed if rainfall occurs. Low numbers of locusts continued to persist in parts of the winter breeding areas along both sides of the Red Sea in Sudan, Saudi Arabia and Yemen. Breeding will decline in these areas. The situation remained calm in southwest Asia. Small-scale breeding is likely to occur in parts of southeastern Iran.

Western Region. Breeding continued during February in northern Mauritania and in parts of the Western Sahara in southern Morocco, causing small groups of hoppers and adults to form in some places. Ground control operations increased in Morocco (3,345 ha) and Mauritania (1,295 ha). Despite a lack of rainfall, ecological conditions remain favourable for breeding from good rains last autumn. Consequently, locust numbers are likely to increase further and small groups and perhaps a few hopper bands may form in some areas during the forecast period. As

temperatures increase, low to moderate numbers of adults may appear along the southern side of the Atlas Mountains in Algeria and Morocco, and breed if rainfall occurs. Elsewhere, the situation remained calm. Low numbers of solitary hoppers and adults persisted in Tamesna, Niger and there were unconfirmed reports of immature solitary adults in northern Mali.

Central Region. The situation remained calm during February due to generally poor rainfall and ecological conditions in the winter breeding areas along both sides of the Red Sea and Gulf of Aden. Consequently, only low numbers of solitary adults were maturing in a few places on the coast in Sudan, Saudi Arabia and Yemen. Unless further rain falls, breeding will decline and come to an end during the forecast period. The situation remains less clear in the interior of southern Yemen where ecological conditions are expected to be favourable as a result of two cyclones in November. There is a low risk that locusts may be present and breeding. If so, adult groups could form as vegetation dries out and move towards Oman.

Eastern Region. The situation remained calm during February. No locusts were reported in the region. Low numbers of adults are likely to appear in southeast Iran and perhaps southwest Pakistan. Small-scale breeding is likely to occur in the Jaz Murian Basin of Iran in areas of recent rainfall.

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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No. 449

DESERT LOCUST BULLETIN



Area Treated

Mauritania	1,259 ha (Feb)
Morocco	3,345 ha (Feb)



Weather & Ecological Conditions in February 2016

Very little rain fell during February, causing vegetation to dry out in most of the winter breeding areas along both sides of the Red Sea and Gulf of Aden. Ecological conditions remained favourable for breeding in northern Mauritania and Western Sahara from previous rainfall.

In the **Western Region**, very little rain fell during February except for moderate showers in northwest Algeria near Bechar. Nevertheless, ecological conditions remained favourable for breeding in northern Mauritania and in adjacent areas of Western Sahara where unusually heavy rains fell in September and October. Elsewhere in the region, dry conditions prevailed except in a few places on the Tamesna Plains of Niger where there were small areas of green vegetation.

In the **Central Region**, very little rain fell in winter breeding areas along both sides of the Red Sea and Gulf of Aden during February except for light showers during the first decade on the southern coast of Sudan and on the Eritrean coast near Sheib and Massawa. Light rain fell in the Tokar Delta during the last decade. Consequently, vegetation was drying out in most areas except in a few places on the northern coast of Eritrea and on the central and southern coast of Saudi Arabia where ecological conditions remained favourable for breeding. Good rains fell during the last decade in parts of the spring breeding areas in the interior of Yemen and in northern Oman. Vegetation remained green in interior and coastal areas of Hadhramaut of southern Yemen from heavy rains associated with two cyclones in November.

In the **Eastern Region**, good rains fell at times in the western portion of the Jaz Murian Basin in southeast Iran during February. As a result, annual vegetation will continue to become green and breeding conditions will improve. Dry conditions prevailed elsewhere in the region.



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During February, breeding continued in the north between Zouerate (2244N/1221W), Bir Moghreïn (2510N/1135W) and Ghallaman (2410N/0952W) where solitary hoppers of all instars mixed with some *transiens* hoppers were present. There was an increasing number of immature and mature solitary and *transiens* adults, some of which formed groups near Zouerate. Adult densities reached up to 9,000 adults/ha but declined to 2,500 adults/ha by the end of the month. Groups of adults were also seen laying eggs mainly during the second half of the month. Locust numbers declined in the northwest where only low numbers of immature and mature solitary adults persisted near Tmeimichat (2119N/1420W). Ground teams treated 1,259 ha during February.

• FORECAST

Locust numbers are likely to increase further in Tiris Zemmour as a result of continued favourable conditions and breeding. Consequently, small groups of hoppers and adults and perhaps a few hopper bands may form in some areas.

Mali

• SITUATION

On 20 February, there were unconfirmed reports of scattered immature solitary adults at four places east of Ti-n-kar (1926N/0022W) in the Timetrine region of the north.

• FORECAST

Low numbers of locusts are likely to be present and may persist in parts of Timetrine, Tilemsi Valley and the Adrar des Iforas.

Niger

• SITUATION

During February, small-scale breeding continued at a few places on the Tamesna Plains near In Abangharit (1754N/0559E) and the Tazerzait Plateau (1832N/0449E) where isolated solitary third to fifth instar hoppers were present. Low numbers of

immature and mature solitarious adults were also seen in these areas.

- **FORECAST**

Low numbers of adults may persist in a few places of Tamesna where vegetation remains green and perhaps in parts of the Air Mountains.

Chad

- **SITUATION**

No locust activity was reported during February.

- **FORECAST**

No significant developments are likely.

Senegal

- **SITUATION**

No locust activity was reported during February.

- **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 February, isolated immature solitarious adults persisted in the west along the Mauritanian border south of Tindouf (2741N/0811W), and isolated mature solitarious adults were seen west of Tamanrasset (2250N/0528E) in the southern Sahara. No locusts were seen during surveys in the central Sahara near Adrar (2753N/0017W) and In Salah (2712N/0229E), in the east near Illizi (2630N/0825E) and Djanet (2434N/0930E), and in the northwest between Bechar (3135N/0217W) and Beni Abbes (3011N/0214W).

- **FORECAST**

Scattered adults may be present or could appear in the west between Tindouf and Beni Abbes, in the central Sahara near irrigated areas in the Adrar region, in runoff areas to the south and west of the Hoggar Mountains. Small-scale breeding may occur in these areas, especially in those places that received previous rainfall.

Morocco

- **SITUATION**

During February, fifth instar solitarious and *transiens* hoppers formed a few small groups in the southern part of the Western Sahara near Tichla (2137N/1453W) from breeding that occurred in November and December. Some of the hoppers fledged and immature adults formed a few small groups. Very small groups of early instar hoppers from

January breeding were also seen nearby at densities up to 5 hoppers/m². An increasing number of mature solitarious and *transiens* adults arrived near Tichla and Aousserd (2233N/1419W) throughout the month and laid eggs, primarily near Aousserd. Ground teams treated 3,345 ha in February.

- **FORECAST**

Egg-laying and hatching will cause locust numbers to increase in the Western Sahara between Tichla and Aousserd where small groups of hoppers and adults are likely to form. A similar situation may occur near Guelta Zemmur. Low to moderate numbers of locusts may appear south of the Atlas Mountains in the Draa Valley and breed if rainfall occurs.

Libya

- **SITUATION**

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

- **FORECAST**

Isolated adults may appear in the southwest near Ghat and breed on a small scale in areas that received rainfall last autumn.

Tunisia

- **SITUATION**

No locust activity was reported during February.

- **FORECAST**

No significant developments are likely.

CENTRAL REGION

Sudan

- **SITUATION**

During February, low numbers of solitarious adults were maturing at a few places in the Tokar Delta (1827N/3741E), on the southern plains near the Eritrean border, and at one place in the northeast in Wadi Diib northwest of Sufiya (2119N/3613E). A few adults were copulating and laying eggs in Tokar.

- **FORECAST**

Low numbers of adults will persist and breed on a small scale in areas that remain green in Tokar Delta and perhaps on the southern coast.

Eritrea

- **SITUATION**

During February, no locusts were seen during surveys on the Red Sea coastal plains between Massawa (1537N/3928E) and Karora (1745N/3820E).



No. 449



No. 449

DESERT LOCUST BULLETIN

• FORECAST

Scattered locusts may be present near Mehimet where copulating adults were seen in January. No significant developments are likely.

Ethiopia

• SITUATION

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

• FORECAST

No significant developments are likely.

Djibouti

• SITUATION

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

• FORECAST

No significant developments are likely.

Somalia

• SITUATION

No reports were received during February.

• FORECAST

Scattered adults are likely to be present on the northwest coastal plains and breed on a small scale if rainfall occurs.

Egypt

• SITUATION

During February, no locusts were seen near Lake Nasser in the Abu Simbel (2219N/3138E), Tushka (2247N/3126E), Garf Husein (2317N/3252E) and Allaqi (2238N/3315E) areas, on the Red Sea coast between Shalatyn (2308N/3535E) and the Sudan border, and in subcoastal areas near El Sheikh El Shazly (2412N/3438E) and Abraaq (2323N/3451E).

• FORECAST

No significant developments are likely.

Saudi Arabia

• SITUATION

During February, low numbers of immature and mature solitary adults persisted on the central Red Sea coastal plains near Qunfidah (1909N/4107E) and immature solitary adults were seen on the southern plains near Jizan (1656N/4233E). No locusts were seen on the coast near Lith (2008N/4016E).

• FORECAST

Unless further rains fall, the possibility for small-scale breeding along the Red Sea coastal plains will decline during the forecast period.

Yemen

• SITUATION

During February, scattered immature and mature solitary adults persisted on the northern Red Sea coastal plains between Al Zuhrah (1541N/4300E) and Suq Abs (1600N/4312E), and on the central coast near Hodeidah (1450N/4258E). The situation remained unclear in other areas due to insecurity.

• FORECAST

Low numbers of locusts will persist on the Red Sea coastal plains and small-scale breeding will occur if additional rains fall. Locusts may be present and breeding in coastal and interior areas of Hadhramaut where heavy rains fell from cyclones Chapala and Megh in November.

Oman

• SITUATION

No locusts were seen during surveys in February in the Musandam Peninsula, and in the northern interior regions of Buraimi and Dakhiliya.

• FORECAST

If additional rainfall occurs, isolated adults may appear on the Batinah coast and in Sharqiya.

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

• FORECAST

Low numbers of adults are likely to appear in areas of recent rainfall in the Jaz Murian Basin and breed on a small-scale. Scattered adults may also appear on the southeast coast. If swarms form in southern Yemen, there remains a low threat that some of these could move to southeast Iran.

Pakistan

• SITUATION

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

- **FORECAST**

Low numbers of adults may appear in coastal areas of Baluchistan where small-scale breeding could occur in places that receive rainfall.

India

- **SITUATION**

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

- **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/ECLLO 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>
- **FAOLOCUS T 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:

- **Iran national training of trainers workshop.** Final report – Publications (Reports by Topic, Commissions – SWAC workshops)

2016 events. The following activities are scheduled or planned:

- **SWAC.** 22nd Desert Locust joint survey in the spring breeding areas of Iran and Pakistan (5-28 April)



No. 449

DESERT LOCUST BULLETIN



No. 449

DESERT LOCUST BULLETIN

- **CLCPRO.** Regional training of trainers on spraying techniques, Agadir, Morocco (11-15 April)
- **CRC/SWAC.** 8th inter-regional workshop for Desert Locust information officers, Cairo, Egypt (22-26 May)
- **CLCPRO.** 8th session, N'Djamena, Chad (18-22 July)
- **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.



No. 449

DESERT LOCUST BULLETIN

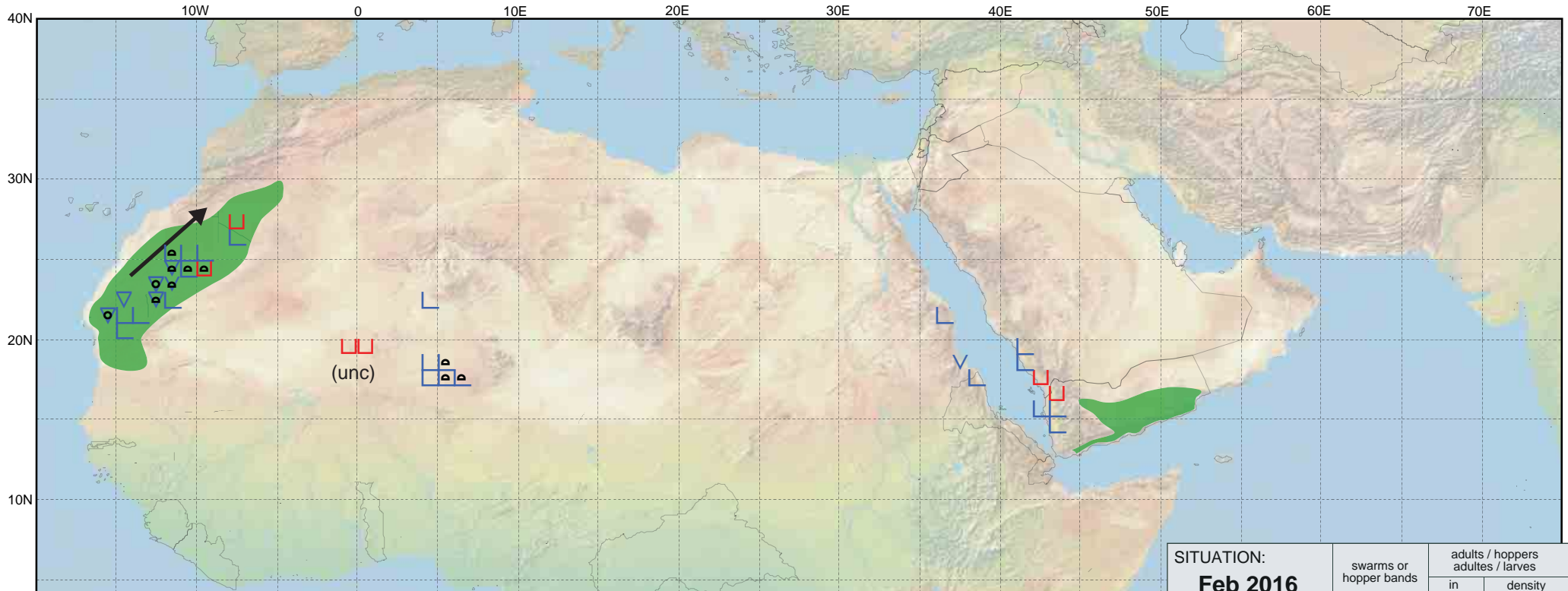
page 7 of 8



Desert Locust Summary

Criquet pèlerin - Situation résumée

449



FORECAST TO: PREVISION AU:	15.04.16	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: Feb 2016 fév 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)			