

warning level: **CAUTION**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 447



**General Situation during December 2015
Forecast until mid-February 2016**

(4.01.2016)

A Desert Locust outbreak continued in western Mauritania and extended further north into northern Mauritania and Western Sahara where hoppers and adults formed small groups during December. Ground control operations were carried out in these areas. As ecological conditions remain favourable, breeding is likely to continue during the forecast period, which may cause a further increase in locust numbers and the formation of hopper and adult groups. Small-scale breeding occurred in northern Mali and Niger where a few small groups may form in January. Only low numbers of locusts were present in parts of the winter breeding areas along both sides of the Red Sea in Sudan, Saudi Arabia and Yemen. During the forecast period, small-scale breeding will occur in these areas as well as in Eritrea and northern Somalia but no significant developments are likely. The situation remained calm in southwest Asia.

Western Region. Control operations continued during December in western Mauritania where an outbreak developed in the previous month. Infestations extended into northwest and northern Mauritania as well as adjacent areas of the Western Sahara in southern Morocco where breeding occurred and small groups of hoppers and adults formed. Ground teams treated 891 ha in Mauritania and 17 ha in Morocco during December. Although control operations declined in Mauritania by the end of December, there remains a possibility for a second-

generation of breeding in the northwest while breeding is likely to continue in the north and in Western Sahara, causing additional groups of hoppers and adults to form in these areas. Small-scale breeding occurred in northern Mali and northern Niger where a few groups of hoppers and adults formed. A few small groups may form in both areas during January but thereafter only low numbers of adults are likely to persist. No locusts were present in Algeria.

Central Region. The situation remained calm during December. Scattered adults were present in a few places of the winter breeding areas along the Red Sea coast in Sudan, Saudi Arabia and Yemen. Ecological conditions improved, mainly in northeast Sudan. Small-scale breeding will cause locust numbers to increase in these countries as well as in northern Eritrea and perhaps southeast Egypt. Vegetation became green in southern Yemen as a result of two cyclones in November. Although locusts were not seen in northern Somalia, vegetation became green on the northwest coast where small-scale breeding is expected in the coming months as well as the possibility of above-average rains associated with El Niño.

Eastern Region. The situation remained calm during December. No locusts were reported in the region and 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.

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Weather & Ecological Conditions in December 2015

Although little rain fell in December, ecological conditions remained favourable for breeding in the Western Sahara and in parts of Mauritania from October rainfall. Breeding conditions improved in northern Somalia and in some coastal areas along both sides of the Red Sea.

In the **Western Region**, very little rain fell during December. Despite the lack of rain, ecological conditions remained favourable for breeding in areas that received unusually heavy rain in September and October, specifically in the Western Sahara and in northern Mauritania (Bir Moghreïn, Tamreiket and northeast of Ghallaman), the northwest (Inchiri) and the west (between Moudjeria, Akjoujt and Aguïlal Faye). Small areas of annual vegetation remained green in the wadis of the Adrar des Iforas in northern Mali and adjacent border areas of southern Algeria, in the wadis of the Air Mountains in northern Niger, in central Algeria near Adrar, In Salah and the Adrar n'Ahnet, and in eastern Algeria near Illizi. In Chad, limited areas were also green in the northwest (Tibesti) and in the northeast (Fada and Mourdi Depression).

In the **Central Region**, rain fell sporadically during December in parts of the winter breeding areas along both sides of the Red Sea. In southeast Egypt, light rain on the coast near Abu Ramad. In Sudan, good rains fell in Tokar Delta, on the central and southern coasts, and in the northeast interior. In Eritrea, light rain fell on the northern coast near Karora and on the central coast near Massawa. Vegetation was becoming green in all of these areas, especially on the coast and in the hills of northeast Sudan and southeast Egypt between Oseif and Halaïb. In Saudi Arabia, light rain fell on the Red Sea coast between Masturah and Lith. Vegetation was becoming green in the valleys north of Yemen and on the coastal plains south of Qunfidah. In Yemen, light rains fell at times on the Red Sea coast where vegetation was green. In the south, more vegetation became green in interior and coastal areas of Hadhramaut from heavy rains associated with two cyclones in November. Light rains were reported in coastal areas of northwest Somalia

during the last week of December, and vegetation was becoming green mainly near Lughaye.

In the **Eastern Region**, light rain fell in the western portion of the Jaz Murian Basin in southeast Iran at times during December and annual vegetation continued to become green in a few localized places. Green vegetation persisted in the Shooli Valley south of Turbat in southwest Pakistan.



Area Treated

Mauritania	3,024 ha (Nov, revised)
	891 ha (Dec)
Morocco	17 ha (Dec)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During December, breeding continued in the west and northwest between Aguïlal Faye (1827N/1444W), Akjoujt (1945N/1421W) and Oujeft (2003N/1301W) where solitary and *transiens* hoppers and immature adults formed small groups at densities up to 10 hoppers/m² and 4,500 adults/ha. Scattered immature and mature adults were also present between Tidjikja (1833N/1126W) and Nouadhibou (2056N/1702W). Breeding occurred in Dakhlet Nouadhibou near the Moroccan border and in Inchiri where a few hopper groups and bands were reported northwest of Akjoujt. Ground teams treated 891 ha during December.

In the north, scattered mature solitary adults were present between Zouerate (2244N/1221W), Bir Moghreïn (2510N/1135W) and Ghallaman (2410N/0952W), and small-scale breeding was in progress mainly near Zouerate where scattered solitary hoppers of all instars were present.

• FORECAST

A second generation of breeding is expected to cause locust numbers to increase further in the northwest where small groups and perhaps a few hopper bands may form in some areas. If temperatures remain warm, breeding will continue in Tiris-Zemmour.

Mali

• SITUATION

During December, scattered immature and mature solitary adults, at densities up to 500 adults/ha,

were seen east of Ti-n-kar (1926N/0022W) in the Timetrine region of the north. Adult groups and isolated late instar solitarious hoppers were reported at two places.

- **FORECAST**

Adults may form a few small groups in Timetrine during January. Low numbers of locusts are likely to be present and may persist in parts of the Tilemsi Valley and the Adrar des Iforas.

Niger

- **SITUATION**

During December, isolated immature solitarious adults persisted at one place in southeast Air Mountains east of Agadez (1658N/0759E). Small-scale breeding occurred on the Tamesna Plains from south of In Abangharit (1754N/0559E) to the Tazerzait Plateau and the Algerian border where low numbers of solitarious hoppers of all instars were seen mixed with isolated immature and mature solitarious adults. By the end of the month, hoppers and mature solitarious adults formed a few small groups near the Algerian border.

- **FORECAST**

Adults are likely to form small groups in parts of the Tamesna during January. Low numbers of adults are expected to persist in parts of the Air Mountains.

Chad

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

Senegal

- **SITUATION**

No reports were received during December.

- **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 December, no locusts were seen during surveys in the west near Tindouf (2741N/0811W), in the central Sahara near Adrar, in the east near Illizi (2630N/0825E) and Djanet (2434N/0930E), and in the south near Timeiaouine (2026N/0148E) and In Guezzam (1937N/0552E).

- **FORECAST**

Scattered adults may 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, and in the extreme south near the Mali border. Small-scale breeding could occur in these areas, especially in the west where unusually good rains fell in October.

Morocco

- **SITUATION**

During December, small-scale breeding occurred in the Western Sahara southwest of Aousserd (2233N/1419W) where solitarious hoppers of all instars were reported. Low numbers of mature solitarious adults were present between Aousserd and Bir Gandouz (2136N/1628W). At the end of the month, a group of maturing solitarious and *transiens* adults at densities up to 1,100 adults/ha was seen southwest of Bir Gandouz near the Mauritania border and ground teams treated 17 ha. No locusts were seen elsewhere in the Western Sahara.

- **FORECAST**

Breeding will cause locust numbers to increase in areas of recent rainfall in the Western Sahara and small groups of hoppers and adults are likely to form.

Libya

- **SITUATION**

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

- **FORECAST**

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

Tunisia

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

CENTRAL REGION

Sudan

- **SITUATION**

In late November, a few isolated mature solitarious adults were seen in the northwest near Jebel Uweinat



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(2154N/2458E) in Karkur Talh, Karkur Murr and Wadi Wahesh.

During December, isolated mature solitary adults were seen on the Red Sea coast near Suakin (1906N/3719E) and in the Tokar Delta (1827N/3741E). No locusts were seen elsewhere on the Red Sea coast or along Wadi Oko/Diib between Tomala (2002N/3551E) and Sufiya (2119N/3613E) in the northeast.

• **FORECAST**

Small-scale breeding will cause locust numbers to increase slightly along the Red Sea coastal plains and in Wadi Oko/Diib.

Eritrea

• **SITUATION**

During December, no locusts were seen during surveys on the Red Sea coast between from Tio (1441N/4057E) to Karora (1745N/3820E).

• **FORECAST**

Scattered adults are likely to appear on the Red Sea coastal plains and breed on a small scale, causing locust numbers to increase slightly between Sheib and Karora.

Ethiopia

• **SITUATION**

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

• **FORECAST**

No significant developments are likely.

Djibouti

• **SITUATION**

No reports were received during December.

• **FORECAST**

No significant developments are likely.

Somalia

• **SITUATION**

No locusts were seen during surveys carried out in late November and during December on the northwest coast and escarpment between Berbera (1028N/4502E) and the Djibouti border.

• **FORECAST**

Scattered adults are likely to appear on the northwest coastal plains and breed on a small scale, causing locust numbers to increase slightly. Low

numbers may also appear in parts of the northeast that received rains from cyclone Megh.

Egypt

• **SITUATION**

During December, no locusts were seen during surveys in the northwest near Siwa (2912N/2531E) and Salum (3131N/2509E), around 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 Berenice (2359N/3524E) and the Sudan border, and in subcoastal areas near El Sheikh El Shazly (2412N/3438E) and Abraç (2323N/3451E).

• **FORECAST**

Scattered adults are likely to appear on the Red Sea coastal plains and subcoastal areas between Shalatyn and Halaib, and breed on a small-scale if further rains fall.

Saudi Arabia

• **SITUATION**

During December, low numbers of mature solitary adults were present on the central Red Sea coastal plains near Qunfidah (1909N/4107E). No locusts were seen elsewhere during surveys along the coast.

• **FORECAST**

Scattered adults are likely to be present and persist on the Red Sea coastal plains as far north as Duba, and breed on a small-scale in areas of recent rainfall.

Yemen

• **SITUATION**

During December, scattered immature and mature solitary adults were present on the Red Sea coastal plains between Zabid (1410N/4318E) and Suq Abs (1600N/4312E). Small-scale breeding occurred on the northern coast near Al Zuhrah (1541N/4300E) where scattered solitary hoppers were reported. There were unconfirmed reports from locals of adults laying eggs and hoppers forming small groups.

• **FORECAST**

Small-scale breeding will cause locust numbers to increase on the Red Sea coastal plains. Scattered adults are likely to appear along the Gulf of Aden coast and breed in areas that received heavy rainfall from cyclones Chapala and Megh.

Oman

• **SITUATION**

No locusts were seen during surveys on the Musandam Peninsula, in the northern interior near Sinaw (2230N/5802E), and on the central coast near Marmul (1808N/5516E) in December.

• **FORECAST**

No significant developments are likely.

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**

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

• **FORECAST**

No significant developments are likely.

Pakistan

• **SITUATION**

No reports were received during December.

• **FORECAST**

No significant developments are likely.

India

• **SITUATION**

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

• **FORECAST**

No significant developments are likely.

Afghanistan

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

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)
- **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>
- **FAOLOLCUST 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>)



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)



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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 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)

- **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:

- **Press release.** Cyclones and Desert Locust (11 November) – Archives (Bulletins 2015)
- **Seasonal forecast.** Desert Locust winter/spring forecast (Dec 2015 – May 2016) – Information (Current threats)
- **Pesticide Referee Group follow-up.** Final report of the Recommendations of the Stakeholder Workshop on the Procurement and Supply of Pesticide for Locust Control, Rome (2-3 September) – Publications (Reports by Topic, Miscellaneous)
- **Biopesticide and ULV spraying videos.** New multilingual videos on advocacy and operational use of biopesticides, and ULV spraying in locust control – Activities (Environment and human health)

2016 events. The following activities are scheduled or planned:

- **SWAC.** 22nd Desert Locust joint survey in the spring breeding areas of Iran and Pakistan (April)
- **CRC/SWAC.** 8th inter-regional workshop for Desert Locust information officers, Cairo, Egypt (22-26 May) [to be confirmed]
- **SWAC.** 31st 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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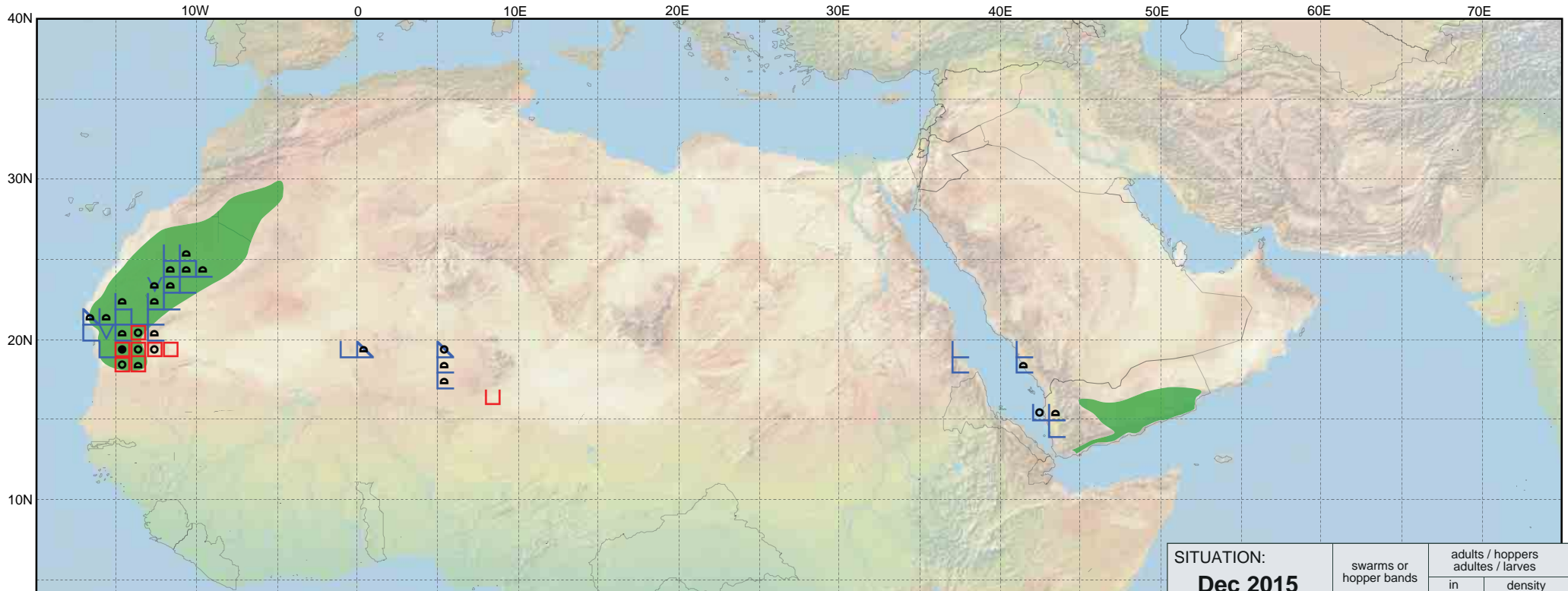
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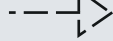

















Desert Locust Summary

Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU:	15.02.16	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: Dec 2015 déc 2015	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)	