

warning level: **CAUTION**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 436



**General Situation during January 2015
Forecast until mid-March 2015**

(2.2.2015)

Desert Locust infestations increased during January along both sides of the Red Sea as a result of a second generation of winter breeding. Control operations intensified against numerous small hopper bands that formed in Sudan, Eritrea and Saudi Arabia. Although there were signs the situation was improving, there remains a moderate risk that any locusts that escape detection or control could form adult groups and a few small swarms that may eventually move to the Eritrean Highlands and the interior of northern Sudan and Saudi Arabia. If locusts reach the interior of Saudi Arabia and the Nile Valley in northern Sudan, breeding could commence by the end of the forecast period. Elsewhere, the situation remained calm and no significant developments are expected.

Western Region. The situation remained calm in January. No locusts were reported in the region except for a few isolated solitarious adults south of the Atlas Mountains in **Morocco**. During the forecast period, low numbers of adults are likely to start to appear in the spring breeding areas south of the Atlas Mountains in Morocco and **Algeria**, and in southwest **Libya**. Small-scale breeding is expected to occur once temperatures warm up and if rains fall.

Central Region. A second generation of breeding in **Sudan** and **Eritrea** caused locust numbers to increase along the Red Sea coast where numerous hopper bands formed. Control operations continued in both

countries. By the end of the month, there were signs that the situation was improving as vegetation dried out and many of the infestations had been treated. Locust numbers also increased in **Saudi Arabia** where hatching and band formation occurred on the Red Sea coast. Aerial and ground control operations were underway in all areas. Scattered adults were present on the Red Sea and Gulf of Aden coasts in **Yemen**. During the forecast period, small groups and a few swarms could form on the Red Sea coast of Eritrea, Sudan and Saudi Arabia. Once vegetation dries out, they could move into the Eritrean highlands, the Nile Valley in northern Sudan, and the spring breeding areas in the interior of Saudi Arabia.

Eastern Region. The situation remained calm and no locusts were reported during January. Light rain continued to fall in the Jaz Murian Basin of southeast **Iran** that will allow ecological conditions to be favourable for small-scale breeding during the spring.

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 January 2015

Although only light rain fell at times, conditions remained favourable for breeding along both sides of the Red Sea coast. Showers fell for a second consecutive month in the interior of southeast Iran.

In the **Western Region**, light rain fell at times during January. In Mauritania, light rain fell over western, central and northern parts of the country, affecting parts of Tiris-Zemmour, Adrar, Inchiri and Tagant. Breeding conditions became favourable in the north near Bir Moghreïn from December rains. In northern Mali, light rains may have fallen in the northwest near Taoudenni. In Niger, light rain fell in the Ténéré Desert northwest of Fachi. Ecological conditions remained favourable for locust survival in a few places in the Adrar des Iforas and Timetrine of northern Mali and in the Air Mountains of Niger. In Northwest Africa, light rains may have fallen at times in parts of central and southern Algeria as well as south of the Atlas Mountains in Morocco and in northern areas of Western Sahara. Vegetation was becoming green in the Ziz-Ghris Valley on the southern side of the Atlas Mountains in Morocco and in adjacent areas of W. Daoura and Kem Kem in Algeria.

In the **Central Region**, very little rain fell in the winter breeding areas along both sides of the Red Sea during January. In Sudan, breeding conditions remained favourable but vegetation started to dry out by the end of the month in the absence of rainfall. In Eritrea, showers may have fallen over parts of the coast early in the month. Although breeding conditions remained favourable, satellite imagery indicated that vegetation was starting to dry out. In Saudi Arabia, favourable conditions persisted along the Red Sea coast. In Yemen, light showers fell at times on the Tihama and Gulf of Aden coastal plains. Vegetation was drying out on the Red Sea coastal plains but remained green in a few areas northwest of Aden. In Oman, rain fell at times near the central coast but vegetation remained mostly dry. No rain fell in the Horn of Africa where dry conditions continued to prevail.



Area Treated

Eritrea	10,247 ha (1-27 January)
Saudi Arabia	7,958 ha (January)
Sudan	22,676 ha (January)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

No locusts were seen during surveys carried out in the north between Zouerate (2244N/1221W) and Bir Moghreïn (2510N/1135W) in January.

• FORECAST

Isolated locusts may be present in the Aguilal Faye area. No significant developments are likely.

Mali

• SITUATION

Although surveys could not be carried out in January, local scouts indicated that mainly mature solitary adults and some hoppers were present in the northern Adrar des Iforas near Aguelhoc (1927N/0052E) and in Timetrine.

• FORECAST

Low numbers of adults are likely to persist in parts of the Adrar des Iforas and Timetrine.

Niger

• SITUATION

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

• FORECAST

Isolated adults may be present in parts of the Air Mountains where they are likely to persist in areas that remain green. No significant developments are likely.

Chad

• SITUATION

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

• FORECAST

No significant developments are likely.

Senegal

• SITUATION

No reports were received during January.

• 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

No locusts were seen during surveys carried out in the central and southern Sahara in January.

• FORECAST

As temperatures warm up in the central and southern Sahara, low numbers of adults could appear and breed on a small scale in any areas that receive rainfall.

Morocco

• SITUATION

During January, isolated solitary adults were maturing at two places south of the Atlas Mountains in W. Draa between Assa (2836N/0926W) and Zag (2800N/0920W) at the end of the month.

• FORECAST

Low numbers of adults may appear south of the Atlas Mountains in the Draa and Ziz-Ghris valleys as temperatures warm up and eventually breed on a small scale if rainfall occurs.

Libya

• SITUATION

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

• FORECAST

Low numbers of adults may appear in the southwest as temperatures warm up and breed on a small scale if rainfall occurs.

Tunisia

• SITUATION

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

• FORECAST

No significant developments are likely.

CENTRAL REGION

Sudan

• SITUATION

During the first week of January, several swarms continued to lay eggs on the southern coast between Aqiq (1813N/3811E) and Karora (1745N/3820E) as well as on the southern edge of the Tokar Delta. This was supplemented by reports of late instar hopper bands and mature swarms crossing the Eritrean border. Hatching and band formation continued throughout the month in most coastal areas extending from nearly Oseif (2146N/3651E) in the north to the Eritrean border in the south. The situation began to improve after mid-month. Control operations intensified in January, treating 22,676 ha of which 14,520 ha were by air. Elsewhere, a few scattered mature adults were seen in the northeast in Wadi Diib north of Tomala (2002N/3551E).

• FORECAST

Any adults that are not detected or controlled may form a few small groups or swarms, especially as vegetation dries out on the Red Sea coast. This may be supplemented by immature groups and a few small swarms from Eritrea. There is a moderate risk that these populations will move inland to the Nile Valley in River Nile and Northern States, mature and eventually lay eggs.

Eritrea

• SITUATION

During January, locust numbers increased in central coastal areas near Sheib (1551N/3903E) and Embere (1628N/3856E), and on the northern coast near Karora (1745N/3820E) as a result of second-generation breeding. Hatching started during the first week and continued throughout the month, causing numerous small hopper bands to form. Scattered immature adults and small groups were also present. Control teams treated 10,247 ha from 1-27 January, mostly during the first decade of the month.

• FORECAST

Hopper groups and bands will fledge throughout February, causing an increasing number of adult groups and probably a few small swarms to form. Most of the fledging should finish by the end of February. Locusts are likely to remain on the coast until vegetation starts to dry out when they could move into the highlands or perhaps north along the coast to Sudan once vegetation dries out.



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Ethiopia

• SITUATION

During January, no locusts were seen during surveys carried out in parts of the northern regions of Afar and Amhara and in the eastern region of Somali.

• FORECAST

No significant developments are likely.

Djibouti

• SITUATION

No reports were received during January.

• FORECAST

No significant developments are likely.

Somalia

• SITUATION

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

• FORECAST

Unless further rainfall occurs, no significant developments are likely.

Egypt

• SITUATION

During January, isolated fourth instar solitary hoppers were reported at one location near the Red Sea coast to the west of Berenice (2359N/3524E). No locusts were seen elsewhere on the Red Sea coast or in subcoastal areas of the southeast.

• FORECAST

Locust numbers will continue to decline on the southern coastal plains of the Red Sea as vegetation dries out.

Saudi Arabia

• SITUATION

During the first week of January, a mature swarm and a few adult groups laid eggs on the northern coast between Yenbo (2405N/3802E) and Umm Lajj (2501N/3716E). Hatching and band formation occurred on the central coast during the first two decades near Qunfidah (1909N/4107E), Lith (2008N/4016E), south of Jeddah, and between Mecca (2125N/3949E) and Thuwal (2215N/3906E). Fledging commenced during the last week of January. Control operations treated 7,958 ha of which 300 ha were by air.

• FORECAST

Limited hatching and band formation is likely to occur on the northern coast near Yenbo. Elsewhere, any adults that escape detection or control are likely to form small groups and perhaps a few small swarms that will move to spring breeding areas in the interior. Unless further rainfall occurs, another generation of breeding is not expected on the Red Sea coastal plains.

Yemen

• SITUATION

During January, scattered immature and mature solitary adults were present on the northern Red Sea coastal plains between Al Zuhrah (1541N/4300E) and Midi (1619N/4248E) and on the central coast east of Hodeidah (1450N/4258E). Similar populations were also present on the Gulf of Aden coastal plains northwest of Aden (1250N/4503E) and east of Zinjibar (1306N/4523E).

• FORECAST

Small-scale breeding is likely to continue along parts of the Gulf of Aden coastal plains, causing locust numbers to increase slightly. Breeding is less likely on the Red Sea coast unless further rainfall occurs.

Oman

• SITUATION

During January, no locusts were seen during surveys on the northern Batinah coast, the Musandam Peninsula, in the northern interior regions of Dhahera, Dakhiliya and Sharqiya, and in the southern region of Dhofar.

• FORECAST

Low numbers of adults may appear in the spring breeding areas on the Batinah coast and perhaps on the central coast at the end of the forecast period.

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 during surveys carried out on the southeast coast near Jask (2540N/5746E) in January.

• FORECAST

Low numbers of adults are likely to appear on the southeast coast between Jask and Chabahar and in the Jaz Murian Basin of the interior during February. Once temperatures increase, small-scale breeding

is expected to occur in areas of recent rainfall in Jaz Murian.

Pakistan

• SITUATION

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

• FORECAST

Isolated adults may appear in coastal areas of Baluchistan and breed on a small scale in areas that receive rainfall.

India

• SITUATION

No locusts were seen during surveys carried out in Rajasthan during January.

• 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)
- **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=PLjxRk5CAwvG_0iFxfjZ5C2fLByF3jvhHOx
- **RAMSESv4 training videos.** A set of basic training videos are available on YouTube: <https://www.youtube.com/playlist?list=PLjxRk5CAwvG-PximOs9ICMxzZtYU93tvb>
- **FAODLIS Google site.** A platform for sharing problems, solutions, tips and files for eLocust2, eLocust2Mapper, RAMSES and remote sensing (<https://sites.google.com/site/faodlis>)
- **FAOLOLUST 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.** Archives
- **eLocust3.** Activities – DLIS
- **RAMSESv4.** Activities – DLIS
- **DLIS Locust Information Officer / Trainee.** Activities – DLIS



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- **SWAC 29th Session report.** Publications – Reports
- **CRC 29th Session report.** Publications – Reports
- **DLIS Information sheet.** Information – FCC/EMPRES

2015 events. The following activities are scheduled or planned:

- **CRC.** Regional contingency planning workshop, Hurghada, Egypt (15-19 February)
- **CRC/SWAC.** 7th inter-regional workshop for Desert Locust Information Officers, Hurghada (22-25 February)

Jeremy Roffey (31 March 1932 – 7 January 2015). Mr. Roffey was an entomologist who worked for FAO as a locust officer in the 1960s and as Head of the Desert Locust Information Service for the Centre for Overseas Pest Research (UK) in the 1970s. He returned to FAO in 1979 initially as Reporting and Forecasting Officer, followed by Senior Locust Forecasting Officer in DLIS, and Senior Officer of the Locust Group until he retired in 1993. We would like to express our sincere condolences to his family and government.



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

- July - September/October

WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July

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.

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.

RECESSION

- period without widespread and heavy infestations by swarms.

REMISSION

- period of deep recession marked by the complete absence of gregarious populations.

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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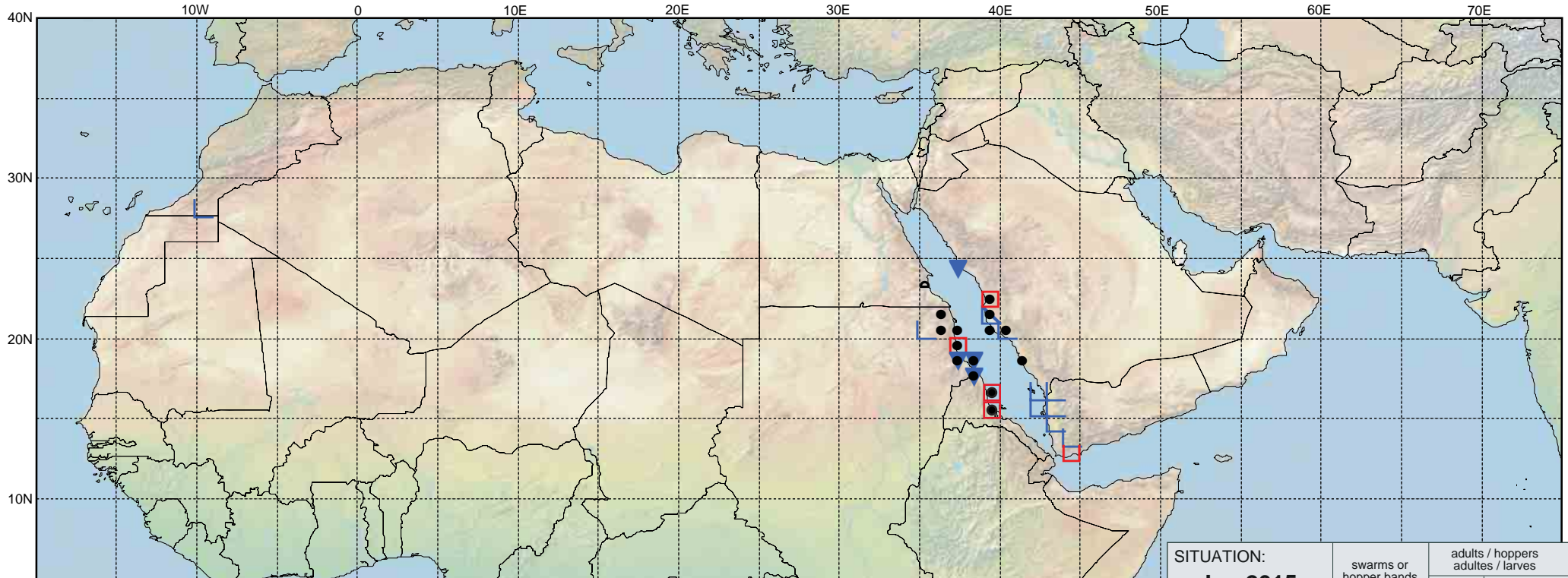
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Desert Locust Summary

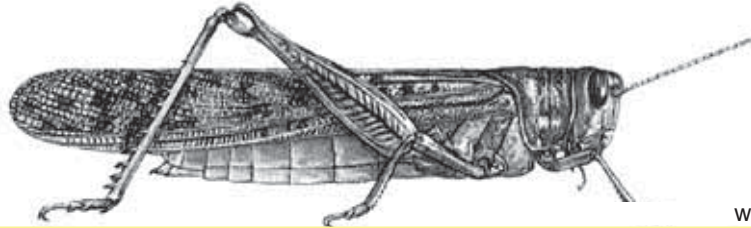
Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU:	15.03.15	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: Jan 2015 jan 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)			



warning level: **CAUTION**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 437



**General Situation during February 2015
Forecast until mid-April 2015**

(3.3.2015)

The Desert Locust situation remained serious along the Red Sea coast in Sudan and Eritrea during February where control operations were carried out against numerous hopper bands, adult groups and swarms. Smaller scale operations were undertaken in Saudi Arabia. Locusts that escape detection or control will form adult groups and small swarms that are likely to move to the Eritrean Highlands and the interior of northern Sudan and Saudi Arabia. If locusts reach the interior of Saudi Arabia and the Nile Valley in northern Sudan, breeding could commence by April. Elsewhere, ecological conditions improved in the spring breeding areas of Northwest Africa and Southwest Asia where small-scale breeding is likely.

Western Region. The situation remained calm in February as no locusts were reported in the region. During the forecast period, low numbers of adults are likely to appear in the spring breeding areas south of the Atlas Mountains in **Morocco** and **Algeria**, and perhaps in the northern **Western Sahara**, northern **Mauritania** and in southwest **Libya**. Small-scale breeding is expected to occur as temperatures warm up and if rains fall.

Central Region. Numerous hopper bands and adult groups formed during February as a result of winter breeding on the Red Sea coast of **Sudan** and **Eritrea**. Aerial and ground control operations increased in Sudan while ground operations were in progress in

Eritrea where immature swarms formed on the central coast. As vegetation dries out on the coast, more adult groups and small swarms are likely to form that are expected to move inland to the Eritrean Highlands and the Nile Valley in northern Sudan. Limited ground and aerial operations continued on the central Red Sea coast in **Saudi Arabia** against hopper bands and adult groups. As vegetation dries out, small groups of adults are likely to form and move to the interior where small-scale breeding will occur if rains fall. Isolated adults are likely to be present in a few places along the Red Sea and Gulf of Aden coasts in **Yemen**.

Eastern Region. The situation remained calm and no locusts were reported during February. Light rains fell in parts of the spring breeding areas in southeast **Iran** and southwest **Pakistan** should allow for limited breeding during the forecast period.

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Area Treated

Eritrea	3,870 ha (February)
Saudi Arabia	2,570 ha (1-25 February)
Sudan	41,018 ha (February)



Weather & Ecological Conditions in February 2015

Vegetation was drying out in winter breeding areas along both sides of the Red Sea in the absence of rainfall. Ecological conditions continued to improve in parts of the spring breeding areas in Northwest Africa and Southwest Asia.

In the **Western Region**, rain fell in parts of the spring breeding areas in Northwest Africa. In Morocco, good rains fell south of the Atlas Mountains in the northeast near Bouarfa and in adjacent areas of Algeria near Bechar and W. Saoura. Light rains fell in the eastern and southern Algerian Sahara near Illizi and Tamanrasset. Breeding conditions continued to improve in the Ziz-Ghris and Draa Valleys in Morocco and in W. Saoura in Algeria. Vegetation became green in northern parts of Western Sahara between Laayoune and Guelta Zemmur and in W. Sakia Al Hamra. In Libya, small areas were becoming green in the southwest near Ghat and in central areas near Al Haruj. Mainly dry conditions prevailed in the Sahel except in parts of northern Mauritania where breeding conditions improved and were favourable near Bir Moghreïn. In northern Mali, green vegetation persisted in a few small, localized areas near Aguelhoc and Inabag (Timetrine) that may be sufficient for locust survival.

In the **Central Region**, no significant rain fell in the winter breeding areas along both sides of the Red Sea in February. Consequently, vegetation was drying out in most areas except on the Eritrean coast north of Mersa Gulbub and on the southern coastal plains of Sudan near the Eritrean border. Elsewhere in the region, no rain fell and dry conditions persisted.

In the **Eastern Region**, rain fell at times in parts of the spring breeding areas in southeast Iran and southwest Pakistan. In Pakistan, light showers fell north of Panjgur and near Turbat during the first decade and along the coast during the third decade. In Iran, light rains fell in parts of the Jaz Murian Basin for the fourth consecutive month. Consequently, ecological conditions are likely to improve as temperatures warm up.



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During the first half of February, no locusts were seen during surveys carried out in the north between Zouerate (2244N/1221W) and Bir Moghreïn (2510N/1135W).

• FORECAST

As temperatures warm up, isolated adults may appear in the north near Bir Moghreïn and breed on a small scale if more rainfall occurs.

Mali

• SITUATION

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

• FORECAST

Low numbers of adults may be present and are expected to persist in parts of the Adrar des Iforas and Timetrine.

Niger

• SITUATION

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

• FORECAST

Isolated adults may be present in parts of the Air Mountains where they are likely to persist in areas that remain green. No significant developments are likely.

Chad

• SITUATION

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

• FORECAST

No significant developments are likely.

Senegal

• SITUATION

No reports were received 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, no locusts were seen during surveys carried out in the central and southern Sahara between Beni Abbes (3011N/0214W) and Bechar (3135N/0217W), and near Adrar (2753N/0017W), Illizi (2630N/0825E) and Tamanrasset (2250N/0528E).

• **FORECAST**

As temperatures warm up in the central and southern Sahara, low numbers of adults may appear and breed on a small scale in any areas that receive rainfall.

Morocco

• **SITUATION**

During the first decade of February, no locusts were seen during surveys carried out in the northern portion of the Western Sahara along the coast near Boujdour (2607N/1429W), and in the interior near Guelta Zemmur (2508N/1222W) and along W. Sakia Al Hamra from west of Smara (2644N/1140W) to north of Bir Lahlou (2619N/0933W).

• **FORECAST**

As temperatures warm up, low numbers of adults may appear south of the Atlas Mountains in the Draa and Ziz-Ghris valleys and in northern Western Sahara, and breed on a small scale.

Libya

• **SITUATION**

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

• **FORECAST**

Low numbers of adults may appear in the southwest as temperatures warm up and breed on a small scale if rainfall occurs.

Tunisia

• **SITUATION**

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

• **FORECAST**

No significant developments are likely.

CENTRAL REGION

Sudan

• **SITUATION**

During the first half of February, immature and mature adults formed numerous groups on the central coast between Tokar Delta and Port Sudan

(1938N/3713E) and on the southern coast between Aqiq (1813N/3811E) and the Eritrean border. Late instar hopper bands were also present north of Port Sudan and northwest of Eit (2009N/3706E). After mid-month, hopper bands and adult groups declined on the central coast while late instar bands persisted at the end of the month in the south where adults formed more immature and mature groups and several swarms. Control operations increased in February, treating 41,018 ha of which 27,075 ha were by air.

• **FORECAST**

Adults that are not detected or controlled will form small groups and swarms that could move inland towards the Nile Valley in River Nile and Northern States where they will mature and eventually lay eggs. Adult groups and a few small swarms may arrive on the coast from adjacent areas in Eritrea.

Eritrea

• **SITUATION**

During February, immature adults formed numerous groups on the northern coastal plains between Mehimet (1723N/3833E) and Karora (1745N/3820E) and on the central coast to the north and south of Embere (1628N/3856E). Some of the groups were maturing in the north where hopper groups continued to be present. Numerous small immature swarms formed on the central coast and a few moved inland towards Naro (1626N/3840E) and Nakfa (1640N/3828E). Control operations treated 3,870 ha during the month.

• **FORECAST**

Adult groups and small swarms will continue to form on the northern and central coast in March. Once vegetation dries out, they are likely to move into the highlands and north along the coast into Sudan.

Ethiopia

• **SITUATION**

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

• **FORECAST**

No significant developments are likely.

Djibouti

• **SITUATION**

No reports were received during February.

• **FORECAST**

No significant developments are likely.



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DESERT LOCUST BULLETIN

Somalia

• SITUATION

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

• FORECAST

No significant developments are likely.

Egypt

• SITUATION

No locusts were seen during surveys conducted in February on the Red Sea coast between El Sheikh El Shazly (2412N/3438E) and the Sudan border and in the interior near Lake Nasser.

• FORECAST

No significant developments are likely.

Saudi Arabia

• SITUATION

During February, numerous hopper bands were present on the central coast between Mecca (2125N/3949E) and Thuwal (2215N/3906E) and, to a lesser extent, on the coast north of Yenbo (2405N/3802E). Immature adults were seen near Thuwal and several groups formed at mid-month. Control operations treated 2,570 ha of which 440 ha were by air. No locusts were seen near Lith (2008N/4016E), Qunfidah (1909N/4107E) and Jizan (1656N/4233E).

• FORECAST

Locust infestations will continue to decline on the Red Sea coast. As vegetation dries out, small groups of adults are likely to form and move to the Hail and Gassim areas of the interior where small-scale breeding will occur if rains fall.

Yemen

• SITUATION

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

• FORECAST

Unless further rainfall occurs, breeding is expected to decline on the Red Sea and Gulf of Aden coastal plains and only isolated adults are likely to persist in some places.

Oman

• SITUATION

During February, no locusts were seen during surveys on the northern Batinah coast, the Musandam Peninsula, in the northern interior near Buraimi (2415N/5547E), Nizwa (2255N/5731E) and Adam (2223N/5731E), and in the southern region of Dhofar near Thumrait (1736N/5401E).

• FORECAST

Low numbers of adults may appear on the Batinah coast and perhaps in Sharqiya and on the central coast, and breed on a small scale if rainfall occurs.

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

• FORECAST

Low numbers of adults are likely to appear on the southeast coast between Jask and Chabahar and in the Jaz Murian Basin of the interior. Once temperatures increase, small-scale breeding is expected to occur in areas of recent rainfall in Jaz Murian.

Pakistan

• SITUATION

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

• FORECAST

Isolated adults may appear in coastal areas of Baluchistan and breed on a small scale in areas that receive rainfall.

India

• SITUATION

No locusts were seen during surveys carried out in Rajasthan 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/ECLC Desert Locust Information Service (eclc@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.

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- **Greenness maps.** Dynamic maps of green vegetation evolution every decade (http://iridl.Ideo.columbia.edu/maproom/Food_Security/Locusts/Regional/greenness.html)
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- **FAODLIS Google site.** A platform for sharing problems, solutions, tips and files for eLocust2, eLocust2Mapper, RAMSES and remote sensing (<https://sites.google.com/site/faodlis>)
- **FAOLOLUST 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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New information on Locust Watch. Recent additions to the web site (www.fao.org/ag/locusts) are:

- **Desert Locust situation updates.** Archives
- **eLocust3.** Activities – DLIS
- **RAMSESV4.** Activities – DLIS
- **DLIS Locust Information Officer / Trainee.** Activities – DLIS
- **SWAC 29th Session report.** Publications – Reports
- **CRC 29th Session report.** Publications – Reports
- **DLIS Information sheet.** Information – FCC/EMPRES

2015 events. The following activities are scheduled or planned:

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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).



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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

- July - September/October

WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July

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.

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.

RECESSION

- period without widespread and heavy infestations by swarms.

REMISSION

- period of deep recession marked by the complete absence of gregarious populations.

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.

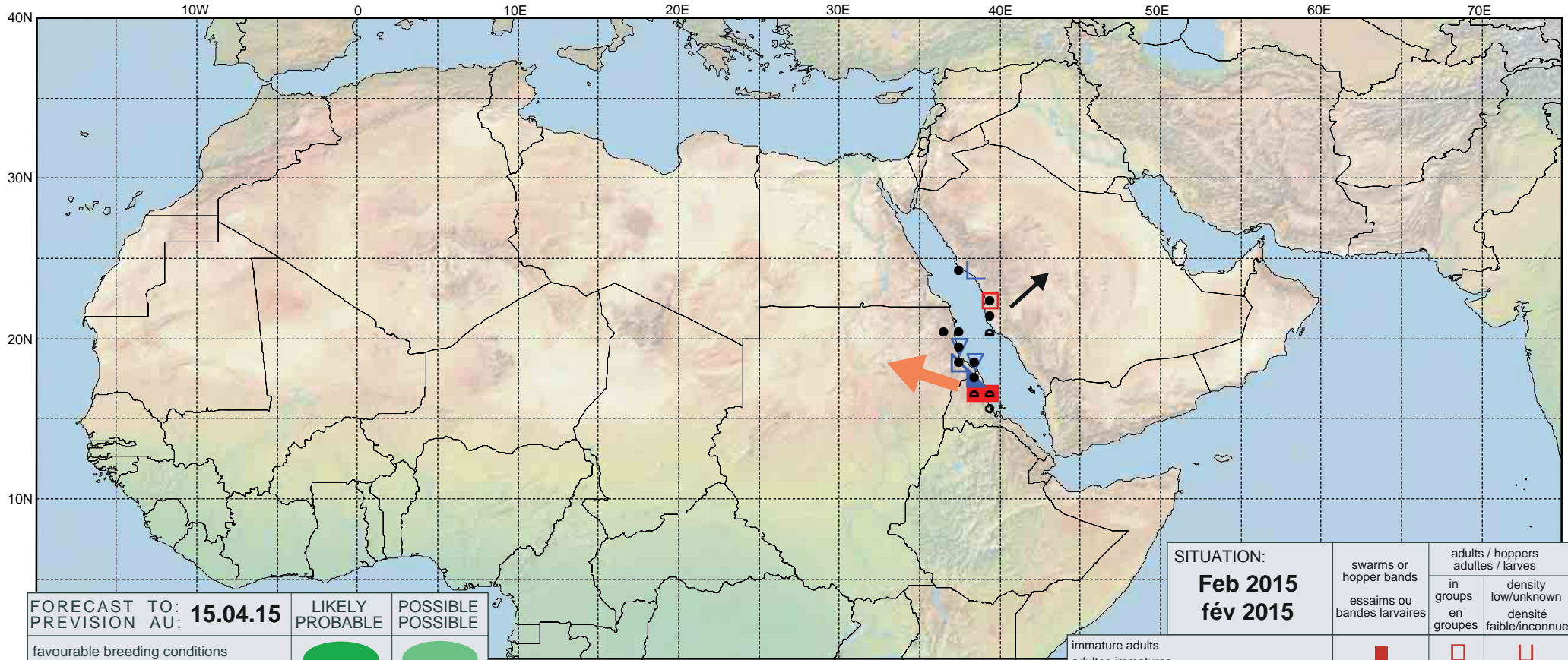
EASTERN

- locust-affected countries in South-West Asia: Afghanistan, India, Iran and Pakistan.



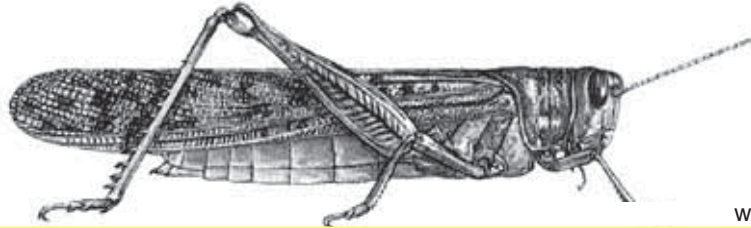
Desert Locust Summary

Criquet pèlerin - Situation résumée



FORECAST TO: PREVISION AU:	15.04.15	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 2015 fév 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)			



warning level: **CAUTION**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



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**General Situation during March 2015
Forecast until mid-May 2015**

(2.4.2015)

The Desert Locust situation improved during March in the winter breeding areas along both sides of the Red Sea due to ongoing control operations and drying ecological conditions. Nevertheless, a few adult groups and swarms formed in Sudan and Eritrea, and there remains a risk that some of these may move into the Nile Valley in northern Sudan and breed near irrigated cropping areas. Very few locusts were reported in other regions. During the forecast period, small-scale breeding is likely to cause locust numbers to increase slightly in the spring breeding areas of Northwest Africa, the interior of the Arabian Peninsula, and in southeast Iran and southwest Pakistan as a result of good rains that fell in March.

Western Region. The situation remained calm in March and no locusts were reported in the region. As good rains fell in parts of the spring breeding areas south of the Atlas Mountains in Morocco and Algeria, small-scale breeding is likely to cause locust numbers to increase slightly during the forecast period in both countries as well as in northern Western Sahara, and perhaps in southwest Libya and northern Mauritania.

Central Region. The situation improved in the winter breeding areas along both sides of the Red Sea due to control operations and drying conditions in March. In Sudan, ground and aerial control operations declined, treating mainly locally bred adult groups and swarms on the southern coast. A few adult groups

and swarms moved into this area from Eritrea where control was in progress against similar infestations. Locust numbers declined on the Red Sea coast in Saudi Arabia where limited control operations were conducted in the north. Low numbers of adults persisted on the Red Sea and Gulf of Aden coasts in Yemen. Good rains fell in the spring breeding areas in the interior of Saudi Arabia and Yemen where small-scale breeding may occur during the forecast period, causing locust numbers to increase slightly. The situation remained calm in Egypt where an individual locust was seen in the south.

Eastern Region. The situation remained calm during March. Isolated solitary adults were present in the interior of southeast Iran. As good rains fell in spring breeding areas along the coast of southeast Iran and southwest Pakistan, small-scale breeding is likely to cause locust numbers to increase slightly during the forecast period, mainly along the coast and in adjacent interior areas of both countries.

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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Facebook: www.facebook.com/faolocust

Twitter: twitter.com/faolocust



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DESERT LOCUST BULLETIN



Weather & Ecological Conditions in March 2015

Ecological conditions continued to improve in parts of the spring breeding areas in Northwest Africa, the Arabian Peninsula and Southwest Asia where good rains fell during March.

In the **Western Region**, good rains fell in parts of Morocco and Algeria during March. In Morocco, light rain fell during the first decade over central areas of Western Sahara, extending to adjacent areas of northern Mauritania. As a result of rainfall during February, ecological conditions became favourable for breeding in March south of the Atlas Mountains in Morocco, primarily in the Ziz-Ghris and Draa Valleys, in the northeast near Bouarfa, and in the northern part of Western Sahara near Boujdour, between Laayoune and Boucraa, and in W. Sakia Al Hamra. In Algeria, moderate rains fell in the south and southeast. Ecological conditions improved in these areas as well as in the Bechar, Tindouf and Adrar areas. In Mauritania, light rain fell at the end of the first decade in parts of the west, northwest and north. Ecological conditions remained unfavourable for locust survival and breeding except for a few localities in the extreme north of Tiris-Zemmour. Green vegetation persisted in a few places of Timetrine and the northern Adrar des Iforas in northern Mali and in some wadis of the Air Mountains in northern Niger. Elsewhere, dry conditions prevailed in the Sahel of West Africa.

In the **Central Region**, good rains fell at times during the last two decades of March in the spring breeding areas of the interior of Saudi Arabia and Yemen. Consequently, ecological conditions were becoming favourable for breeding. No significant rain fell in the winter breeding areas along both sides of the Red Sea, and vegetation continued to dry out in most areas except in a few places on the northern coast of the Red Sea in Eritrea, Yemen and Saudi Arabia.

In the **Eastern Region**, ecological conditions were favourable in the spring breeding areas of southeast Iran, mainly on the coast near Jask and in the Jaz Murian Basin of the interior in March. Good rains that fell along the coast from Jask to Pasni, Pakistan

during the second decade should allow breeding conditions to improve in all coastal areas.



Area Treated

Eritrea	1,414 ha (1-10 March)
Saudi Arabia	440 ha (March)
Sudan	12,451 ha (March)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

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

• FORECAST

Isolated adults may be present in the north between Bir Moghreïn and Zouerate, and breed on a small scale if more rainfall occurs.

Mali

• SITUATION

Although surveys were not carried out in March, locals reported isolated adults at three places near Ti-n-kar (1926N/0022W) in the Timetrine area of the north.

• FORECAST

Low numbers of adults may be present and are expected to persist in parts of the Adrar des Iforas and Timetrine.

Niger

• SITUATION

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

• FORECAST

Isolated adults may be present in parts of the Air Mountains where they are likely to persist in areas that remain green. No significant developments are likely.

Chad

• SITUATION

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

• FORECAST

No significant developments are likely.

Senegal

• SITUATION

No reports were received during March.

- **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 March, no locusts were seen during surveys carried out in the central and southern Sahara between Beni Abbes (3011N/0214W) and Bechar (3135N/0217W), and near Adrar (2753N/0017W), Illizi (2630N/0825E) and Tamanrasset (2250N/0528E).

- **FORECAST**

Low numbers of adults may be present near Beni Abbes and in other parts of the central and southern Sahara where small-scale breeding could occur in any areas that receive rainfall.

Morocco

- **SITUATION**

No locusts were seen during surveys in the Draa Valley along the Algerian border from south of Fom El Hassan (2901N/0853W) to southeast of Tata (2944N/0758W) on 19-26 March.

- **FORECAST**

Low numbers of adults may be present and breed on a small scale south of the Atlas Mountains in the Draa and Ziz-Ghris valleys, and in northern areas of Western Sahara.

Libya

- **SITUATION**

No reports were received during March.

- **FORECAST**

Low numbers of adults may be present in the southwest and breed on a small scale if rainfall occurs.

Tunisia

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

CENTRAL REGION

Sudan

- **SITUATION**

During March, groups of immature and mature adults persisted on the southern coast between Adobana (1810N/3816E) and the Eritrean border and, to a lesser extent, on the coast south of Suakin

(1906N/3719E). A few late instar hopper groups and bands were present in the first week. Several immature and mature swarms were seen at times on the coast near Adobana, in Tokar Delta, and along a 70 km stretch of Khor Baraka from Tokar (1827N/3741E) on 12-18 March. Some of the adult groups and swarms reportedly came from adjacent areas in Eritrea. Control operations treated 12,451 ha on 1-18 March, of which 6,150 ha were by air.

- **FORECAST**

A few small groups or swarms may form on the southern coast, supplemented by similar populations from adjacent areas of Eritrea, and move inland towards the Nile Valley in River Nile and Northern States where they will mature and lay eggs near irrigated cropping areas.

Eritrea

- **SITUATION**

During the first decade of March, hopper bands and gregarious immature and mature adults persisted on the northern coast between Mehimet (1723N/3833E) and Karora (1745N/3820E), and on the central coast near Embere (1628N/3856E). Some of the adults were copulating. Immature adults were reported on the eastern escarpment near Naro (1626N/3840E). On 13 March, a swarm was seen in the western lowlands along Khor Baraka near Kerkebet (1618N/3724E). Ground teams treated 1,414 ha on the Red Sea coast.

- **FORECAST**

Locust infestations will decline on the Red Sea coast where groups and small swarms are likely to form that could move into the highlands and north along the coast into Sudan.

Ethiopia

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

Djibouti

- **SITUATION**

No reports were received during March.

- **FORECAST**

No significant developments are likely.



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DESERT LOCUST BULLETIN

Somalia

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

Egypt

- **SITUATION**

During March, an isolated immature solitarious adult was seen at one location in the Allaqi area near the eastern shore of Lake Nasser. No locusts were seen on the Red Sea coastal plains.

- **FORECAST**

No significant developments are likely.

Saudi Arabia

- **SITUATION**

During March, locust numbers declined on the Red Sea coastal plains. Scattered immature solitarious adults were present on the northern coast between Masturah (2309N/3851E) and Yenbo (2405N/3802E) and, to a lesser extent, on the central coast near Lith (2008N/4016E). A group of immature adults was seen near Bader (2346N/3847E). Control operations treated 440 ha. No locusts were seen in the spring breeding areas of the interior between Gassim (2621N/4358E) and Hail (2731N/4141E).

- **FORECAST**

A few small groups of adults may form on the northern Red Sea coast and move to the Hail and Gassim areas of the interior where small-scale breeding will occur if rains fall.

Yemen

- **SITUATION**

During March, isolated immature and mature solitarious adults were present in a few places along the northern coast of the Red Sea between Al Zuhrah (1541N/4300E) and Suq Abs (1600N/4312E), on the central coast near Al Qutai (1454N/4312E), and on the Gulf of Aden coastal plains northwest of Aden near Am Rija (1302N/4434E).

- **FORECAST**

No significant developments are likely.

Oman

- **SITUATION**

During March, no locusts were seen during surveys in northern coastal and interior areas and on the Musandam Peninsula.

- **FORECAST**

Low numbers of adults may appear on the Batinah coast and perhaps in Sharqiya and on the central coast, and breed on a small scale if rainfall occurs.

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 March, isolated mature adults were seen near Ghale Ganj (2731N/5752E) in the Jaz Murian Basin of the interior. No locusts were seen on the southeast coast near Jask (2540N/5746E).

- **FORECAST**

Low numbers of adults are likely to appear and breed on a small scale on the southeast coast between Jask and Chabahar and in the Jaz Murian Basin of the interior.

Pakistan

- **SITUATION**

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

- **FORECAST**

Isolated adults may appear and breed on a small scale in coastal areas of Baluchistan.

India

- **SITUATION**

No locusts were seen during surveys carried out in Rajasthan during March.

- **FORECAST**

No significant developments are likely.

Afghanistan

- **SITUATION**

No reports received.

- **FORECAST**

No significant developments are likely.



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- **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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- **CRC Contingency Planning Workshop report.** Publications – Reports
- **CRC/SWAC DLIO Workshop report.** Publications – Reports

2015 events. The following activities are scheduled or planned:

- **SWAC.** 21st annual Iran/Pakistan Joint Survey (5-25 April)
- **CLC/PRO/EMPRES-WR.** Regional workshop for Desert Locust Information Officers in the Western Region, Nouakchott, Mauritania (8-12 June)



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).



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DESERT LOCUST BULLETIN

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

- July - September/October

WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July

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.

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.

RECESSION

- period without widespread and heavy infestations by swarms.

REMISSION

- period of deep recession marked by the complete absence of gregarious populations.

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

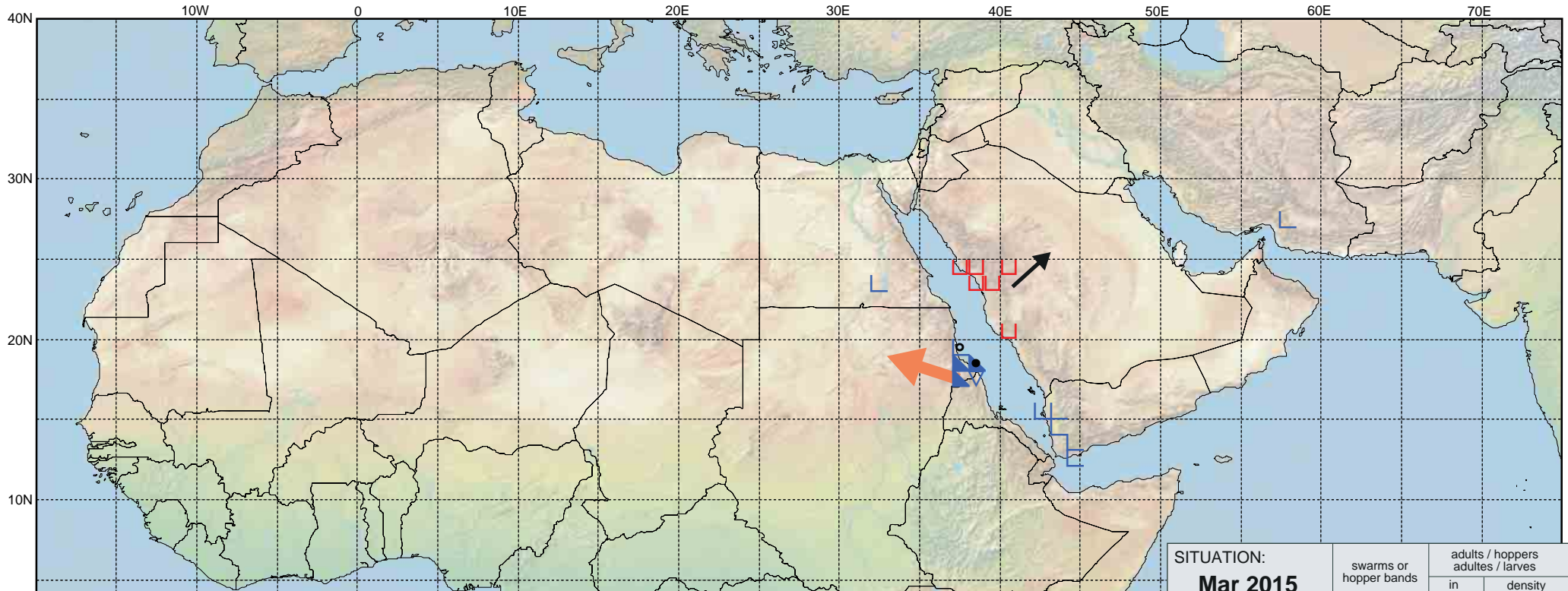
- locust-affected countries in South-West Asia: Afghanistan, India, Iran and Pakistan.



Desert Locust Summary

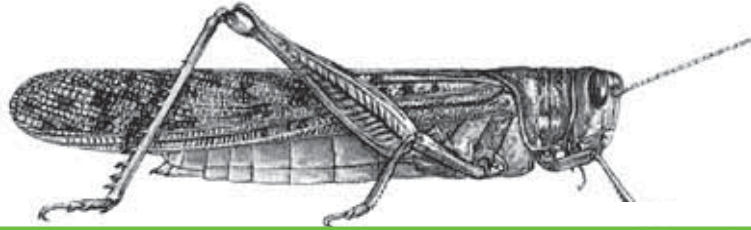
Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU:	15.05.15	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: Mar 2015 mar 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)			



warning level: **CALM**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 439



**General Situation during April 2015
Forecast until mid-June 2015**

(4.5.2015)

The Desert Locust situation continued to improve during April. Very little rain fell throughout the recession area. Only low numbers of solitarious adults remained in a few places of the winter breeding areas along both sides of the Red Sea in Sudan and Saudi Arabia. A few adults moved into the interior of northern Sudan. No control operations were conducted in April. Scattered adults were present in southeast Iran and isolated adults were seen in the central Sahara in Algeria. During the forecast period, small-scale breeding may occur in parts of the spring breeding areas in Northwest Africa and the interior of Saudi Arabia. Locust numbers will remain low and no significant developments are expected.

Western Region. The situation remained calm in April. Only a few isolated solitarious locusts were present north of the Hoggar Mountains in the central Sahara of **Algeria**. Limited breeding may occur in parts of the central Sahara in Algeria and south of the Atlas Mountains in **Morocco**. No significant developments are expected.

Central Region. The situation improved in the region during April. Low numbers of solitarious adults remained in a few places along the coast in **Sudan** and **Saudi Arabia** and no further control operations were required. A similar situation is likely on the northern and central Red Sea coast in **Eritrea**. Scattered adults were seen along the Atbara River in

the interior of northern Sudan that probably arrived from the Red Sea coastal winter breeding areas. No locusts were reported elsewhere in the Region. During the forecast period, small-scale breeding may occur in northern Sudan and in the interior of Saudi Arabia.

Eastern Region. The situation remained calm during April. Scattered solitarious adults were observed in a few places on the coast and in the interior of southeast **Iran** during the annual joint survey. No locusts were seen in adjacent areas of Baluchistan, **Pakistan**. Nevertheless, small-scale breeding may occur in areas of recent rainfall in northern Baluchistan. In the absence of locust populations, pre-monsoon rains that fell along both side of the Indo-Pakistan are not likely to have an impact on the current situation.

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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DESERT LOCUST BULLETIN



Area Treated

Eritrea

3,000 ha (March, updated)



Weather & Ecological Conditions in April 2015

Although very little rain fell during April, ecological conditions continued to improve in parts of the spring breeding areas in the interior of Saudi Arabia and were suitable for limited breeding in Northwest Africa. Elsewhere, hot and dry conditions prevailed.

In the **Western Region**, light rain fell at mid-month along the Moroccan-Algerian border south of Erfoud, Morocco. Although no significant rain fell elsewhere in the spring breeding areas of Northwest Africa, ecological conditions were favourable for small-scale breeding in parts of the Sahara in Algeria and south of the Atlas Mountains in Morocco, primarily in the northeast near Bouarfa, in the Draa and Ziz-Ghris valleys and in northern Western Sahara along W. Sakia Al Hamra. Dry and increasingly hot conditions prevailed in the northern Sahel of West Africa.

In the **Central Region**, no significant rain fell during April. Consequently, ecological conditions continued to dry out in coastal areas along both sides of the Red Sea. Breeding conditions improved in the spring breeding areas of the interior of Saudi Arabia from good rains in late March. Light rains fell over parts of the northern Somali plateau at times during the second half of April.

In the **Eastern Region**, light rain fell in the spring breeding areas in the northern parts of Baluchistan, Pakistan in April. No rain fell in adjacent areas of Iran. In Pakistan, ecological conditions were improving for breeding in northern Baluchistan and may also be favourable along the coast near Jiwani from good rains in March. In Iran, annual vegetation was green at the beginning of April in central Jaz Murian but dried out quickly. A few areas remained green on the southeast coast near Jask. Pre-monsoon rains fell in the summer breeding areas along both sides of the Indo-Pakistan border during the first half of April.



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

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

• FORECAST

No significant developments are likely.

Mali

• SITUATION

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

• FORECAST

Low numbers of adults may be present and are expected to persist in parts of the Adrar des Iforas and Timetrine.

Niger

• SITUATION

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

• FORECAST

Isolated adults may be present in parts of the Air Mountains where they are likely to persist in areas that remain green. No significant developments are likely.

Chad

• SITUATION

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

• FORECAST

No significant developments are likely.

Senegal

• SITUATION

No reports were received during April.

• 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 April, a few solitary fledglings were present in the central Sahara northwest of the Hoggar Mountains between In Salah (2712N/0229E) and Tamanrasset (2250N/0528E). Elsewhere, no locusts were seen during surveys carried out in the western and central Sahara near Tindouf (2741N/0811W), between Beni Abbes (3011N/0214W) and Bechar (3135N/0217W), and near Adrar (2753N/0017W) and Illizi (2630N/0825E).

• FORECAST

Small-scale breeding may occur in a few places of the central Sahara during May but locust numbers will remain low and no significant developments are likely.

Morocco

• SITUATION

No locusts were seen during surveys south of Erfoud (3128N/0410W) in the Ziz-Ghris Valley along the Algerian border on 30 April.

• FORECAST

Small-scale breeding may occur in a few places in Draa, Ziz-Ghris and Sakia Al Hamra valleys but locust numbers will remain low and no significant developments are likely.

Libya

• SITUATION

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

• FORECAST

Isolated adults may be present in the southwest and could breed on a small scale if rainfall occurs.

Tunisia

• SITUATION

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

• FORECAST

No significant developments are likely.

CENTRAL REGION

Sudan

• SITUATION

By the first week of April, the situation had improved on the central and southern Red Sea coast where only low densities of immature and mature solitary adults remained in a few places between Suakin (1906N/3719E) and Tokar (1827N/3741E), along Khor Baraka, and near Aiterba (1753N/3819E) and Karora (1745N/3820E). Locust numbers declined during the rest of the month. In the River Nile State, scattered immature and mature solitary adults were seen in cropping areas along both sides of the Atbara River.

• FORECAST

Scattered adults are likely to persist in and near cropping areas along the Nile and the Atbara rivers in River Nile and Northern States where small-scale breeding may occur.

Eritrea

• SITUATION

No reports were received in April.

• FORECAST

Low to moderate numbers of adults may be present in parts of the highlands.

Ethiopia

• SITUATION

No reports were received in April.

• FORECAST

No significant developments are likely.

Djibouti

• SITUATION

No reports were received during April.

• FORECAST

No significant developments are likely.

Somalia

• SITUATION

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

• FORECAST

No significant developments are likely.

Egypt

• SITUATION

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

• FORECAST

No significant developments are likely.

Saudi Arabia

• SITUATION

During April, a few scattered immature solitary adults persisted on the Red Sea coast and interior near Yenbo (2405N/3802E). Scattered mature solitary adults were present at one place in the Asir Mountains northeast of Medinah (2430N/3935E), and scattered gregarious adults were reported southwest of Gassim (2621N/4358E).



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• FORECAST

Small-scale breeding may occur in areas of recent rainfall in the interior near Gassim.

Yemen

• SITUATION

No reports were received in April.

• FORECAST

No significant developments are likely.

Oman

• SITUATION

During April, no locusts were seen during surveys in the northern interior west of Nizwa (2255N/5731E) in Dakhiliya region, near Buraimi (2415N/5547E), and on the Musandam Peninsula.

• FORECAST

Unless further rainfall occurs, 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

During April, scattered mature solitarious adults were present in a few places along the southeast coast near Jask (2540N/5746E) and in the interior of the Jaz Murian Basin east of Qaleh Ganj (2731N/5752E). No locusts were seen elsewhere during the annual joint survey.

• FORECAST

Isolated adults are likely to persist in a few areas on the coast near Jask and in the Jaz Murian Basin of the interior. Breeding is unlikely unless further rainfall occurs.

Pakistan

• SITUATION

No locusts were seen during a joint survey in coastal and interior areas of Baluchistan in April.

• FORECAST

Isolated adults may be present in parts of the coast and interior of Baluchistan. Small-scale breeding

may occur in areas of recent rainfall. No significant developments are likely.

India

• SITUATION

No locusts were seen during surveys carried out in Rajasthan 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 (ecl@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.Ideo.columbia.edu/maproom/.Food_Security/Locusts/index.html)
- **RFE.** Rainfall estimates every day, decade and month (http://iridl.Ideo.columbia.edu/maproom/.Food_Security/Locusts/index.html)
- **Greenness maps.** Dynamic maps of green vegetation evolution every decade (http://iridl.Ideo.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=P_LjxRk5CAwvG_0iFxiZ5C2fLByF3jHvHOx
- **RAMSESV4 training videos.** A set of basic training videos are available on YouTube: <https://www.youtube.com/playlist?list=PLjxRk5CAwvG-PximOs9lCMxzZtYU93tvb>
- **RAMSESV4 and eLocust3 updates.** Updates can be downloaded from <https://sites.google.com/site/rv4elocust3updates/home>
- **FAOLOCAST Twitter.** The very latest updates are posted on Twitter (<http://www.twitter.com/faolocust>)
- **FAOLOCAST 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.** Archives
- **eLocust3.** Activities – DLIS
- **RAMSESV4.** Activities – DLIS
- **Iran/Pakistan Joint Survey report.** Publications – Reports

CLCPRO web site. The CLCPRO web site (<http://clcprou-empres.org>) has been improved and updated.

2015 events. The following activities are scheduled or planned:

- **CLCPRO/EMPRES-WR.** Regional workshop for Desert Locust Information Officers in the Western Region, Nouakchott, Mauritania (8-12 June)



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).

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- enough present for mutual reaction to be possible but no ground or basking groups seen;
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GROUP

- forming ground or basking groups;
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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.

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- July - September/October

WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July



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DESERT LOCUST BULLETIN



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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.

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.

RECESSION

- period without widespread and heavy infestations by swarms.

REMISSION

- period of deep recession marked by the complete absence of gregarious populations.

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

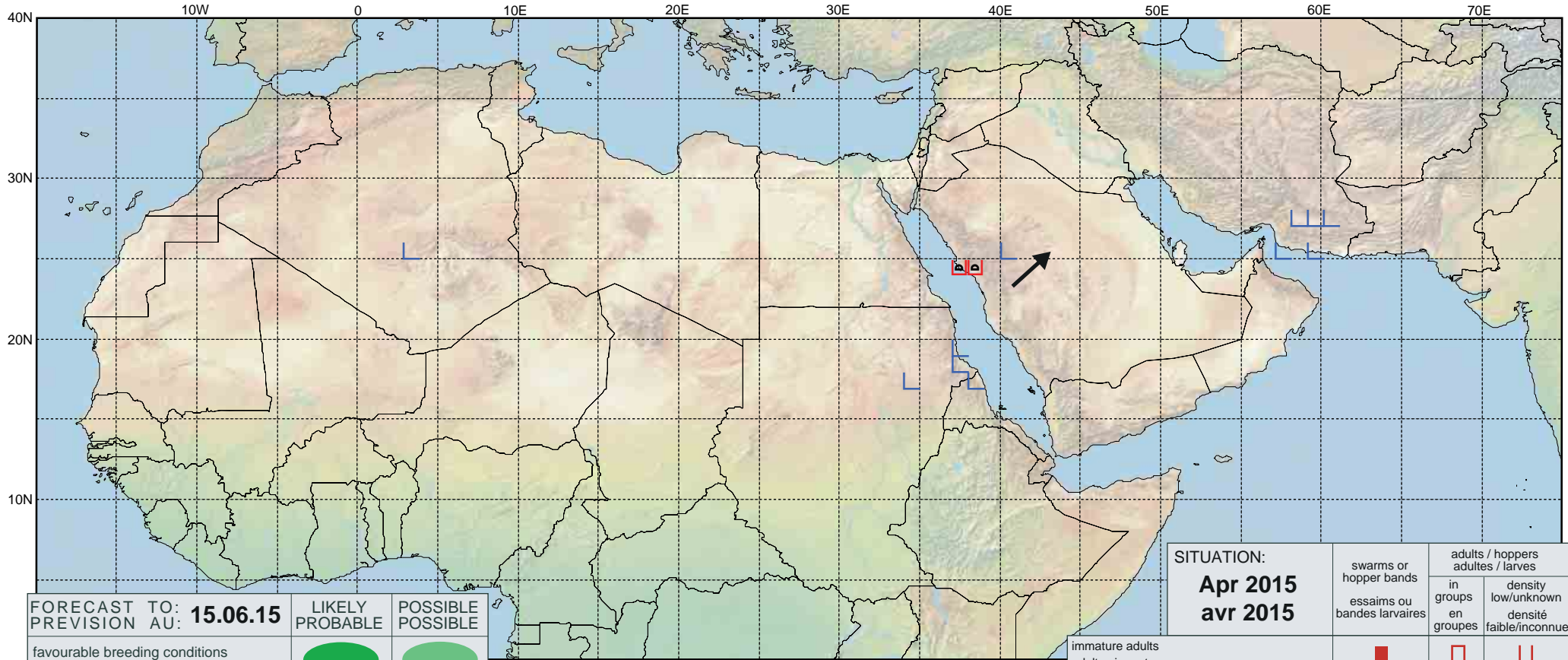
- locust-affected countries in South-West Asia: Afghanistan, India, Iran and Pakistan.



Desert Locust Summary

Criquet pèlerin - Situation résumée

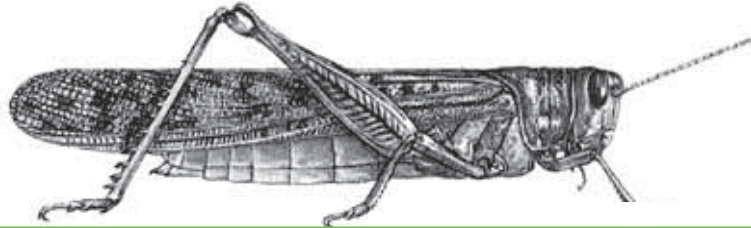
439



FORECAST TO: PREVISION AU:	15.06.15	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:
Apr 2015
avr 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)			



warning level: **CALM**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 440



**General Situation during May 2015
Forecast until mid-July 2015**

(3.6.2015)

The Desert Locust situation remained calm during May. No significant breeding occurred this year in the spring breeding areas of Northwest Africa, the Arabian Peninsula and Southwest Asia where vegetation continues to dry out. During the forecast period, low numbers of solitary adults are likely to appear in parts of the vast summer breeding areas in the northern Sahel, stretching from Mauritania to western Eritrea as well as along both sides of the Indo-Pakistan border. Small-scale breeding will occur with the onset of the seasonal rains but locust numbers will initially remain low. Summer rains may be delayed or weak in the northern Sahel this year. Regular surveys should commence shortly in all summer breeding areas but some places such as northern Mali, Darfur and the interior of Yemen remain inaccessible due to insecurity.

Western Region. The situation remained calm in May. No locusts were reported in the region except for an individual adult south of the Atlas Mountains in Morocco. Vegetation dried out in the spring breeding areas. No significant developments are expected.

Central Region. The situation remained calm during May. No locusts were reported in the region. Vegetation dried out in the spring breeding areas of the interior of Saudi Arabia. During the forecast period, scattered adults are expected to appear in the

summer breeding areas between North Darfur, Sudan and the western lowlands of Eritrea. Small-scale breeding will occur with the onset of the seasonal rains.

Eastern Region. The situation remained calm during May. No locusts were reported in the region and vegetation dried out in the spring breeding areas of southeast Iran and southwest Pakistan. During the forecast period, low numbers of adults are likely to appear in parts of the summer breeding areas along both sides of the Indo-Pakistan border where small-scale breeding will occur with the onset of the monsoon rains.

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DESERT LOCUST BULLETIN



Weather & Ecological Conditions in May 2015

Vegetation dried out in the spring breeding areas in Northwest Africa, the Arabian Peninsula and Southwest Asia. Hot and dry conditions prevailed in the summer breeding areas of the Sahel in West Africa and Sudan, and along the Indo-Pakistan border.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) moved slightly northwards over the southern Sahel of West Africa during May but remained well south of the summer breeding areas. Its northerly position for the last two decades of May was one degree below the climatological normal position for this time of year. Consequently, dry and increasingly hot conditions prevailed in the northern Sahel of West Africa. Light rain fell in parts of northeast Chad near Abeche during the first decade of the month. Vegetation was becoming green along a few wadis between Abeche, Arada and Adre. In Northwest Africa, no significant rain fell in the spring breeding areas south of the Atlas Mountains. As a result, vegetation remained dry in most areas and was drying out south of the Atlas Mountains in Morocco, primarily in the northeast near Bouarfa, in the Draa and Ziz-Ghris valleys and in northern Western Sahara along W. Sakia Al Hamra.

In the **Central Region**, no significant rain fell in locust breeding areas during May and ecological conditions were dry in most areas. In Eritrea, light to moderate rains fell in the highlands with some runoff onto parts of the Red Sea coastal plains. In Yemen, heavy rain fell in the highlands while light showers and runoff may have occurred on the western edge of the summer breeding areas in the interior between Al Hazm and Ataq. Moderate rains fell on the central Red Sea coast near Hodeidah during the second decade but vegetation remained dry. In Oman, light showers fell in parts of the northern interior between Nizwa and Ibra. In the Horn of Africa, seasonal southwesterly winds that feed the Indian monsoon became established over the Horn of Africa by mid-month. Light to moderate rains fell at times in eastern Ethiopia and adjacent areas of the plateau and escarpment

in northern Somalia. Consequently, vegetation was becoming green or was already green in some areas.

In the **Eastern Region**, light rain fell in parts of the spring breeding area in southeast Iran and western Pakistan, primarily in the Mekran Mountains south of Jaz Murian and near Turbat. Nevertheless, ecological conditions remained dry. In the Indo-Pakistan summer breeding areas, light to moderate pre-monsoon rains fell during the first decade of May in parts of Rajasthan, India between Barmer and Jaisalmer, and a few showers may have occurred in adjacent areas of Khipro and Cholistan deserts in Pakistan. Ecological conditions remained dry and unfavourable for breeding.



Area Treated

No control operations were reported during May.



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

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

• FORECAST

Scattered adults are likely to appear in the southeast and breed on a small scale once seasonal rains commence.

Mali

• SITUATION

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

• FORECAST

Low numbers of adults may be present and are expected to persist in parts of the Adrar des Iforas and Timetrine. Small-scale breeding will occur once seasonal rains commence.

Niger

• SITUATION

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

• FORECAST

Isolated adults may be present in parts of the Air Mountains. Scattered adults may appear in the Tamesna and breed on a small scale once seasonal rains commence.

Chad

• SITUATION

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

• FORECAST

Scattered adults may appear in central and northeast areas, and breed on a small scale once seasonal rains commence.

Senegal

• SITUATION

No reports were received during May.

• 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

No locusts were seen during surveys carried out in the central Sahara near Adrar (2753N/0017W) and the southern Sahara near Tamanrasset (2250N/0528E) in May.

• FORECAST

Scattered adults may be present and are likely to persist near irrigated areas of the central Sahara in the Adrar area. No significant developments are likely.

Morocco

• SITUATION

During May, an individual solitary adult was seen south of Erfoud (3128N/0410W) in the Ziz-Ghris Valley along the Algerian border. No locusts were seen elsewhere in the same area.

• FORECAST

No significant developments are likely.

Libya

• SITUATION

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

• FORECAST

No significant developments are likely.

Tunisia

• SITUATION

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

• FORECAST

No significant developments are likely.

CENTRAL REGION

Sudan

• SITUATION

No reports were received in May.

• FORECAST

Scattered adults are likely to persist in and near cropping areas along the Nile and the Atbara rivers in River Nile and Northern States where small-scale breeding may occur. Low numbers of adults may appear in the summer breeding areas between North Darfur and Kassala, and breeding on a small scale once seasonal rains commence.

Eritrea

• SITUATION

A late report indicated that no surveys were conducted in April. Similarly, no surveys were carried out and no locusts were reported during May

• FORECAST

Scattered adults are likely to appear in areas of recent rainfall in the western lowlands where small-scale breeding could commence if more rains fall.

Ethiopia

• SITUATION

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

• FORECAST

No significant developments are likely.

Djibouti

• SITUATION

No reports were received during May.

• FORECAST

No significant developments are likely.

Somalia

• SITUATION

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

• FORECAST

No significant developments are likely.

Egypt

• SITUATION

During May, no locusts were seen in the Lake Nasser area near Tushka (2247N/3126E) and Abu Simbel (2219N/3138E).



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- **FORECAST**

No significant developments are likely.

Saudi Arabia

- **SITUATION**

No locusts were seen in the spring breeding areas of the interior to the south of Riyadh (2439N/4642E), east of Gassim (2621N/4358E) and near Hail (2731N/4141E) during May.

- **FORECAST**

No significant developments are likely.

Yemen

- **SITUATION**

No reports were received in May.

- **FORECAST**

No significant developments are likely.

Oman

- **SITUATION**

During May, no locusts were seen during surveys in the northern interior between Buraimi (2415N/5547E) and the Wahiba Sands, on the Musandam Peninsula, and in south-central areas near Marmul (1808N/5516E).

- **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) during May.

- **FORECAST**

No significant developments are likely.

Pakistan

- **SITUATION**

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

- **FORECAST**

Scattered adults are likely to appear in the summer breeding areas near the Indian border in parts of Tharparkar, Khipro and Cholistan. Small-scale breeding will occur once the monsoon rains commence.

India

- **SITUATION**

No locusts were seen during surveys carried out in Rajasthan during May.

- **FORECAST**

Scattered adults are likely to appear in the summer breeding areas near the Pakistan border in parts of Rajasthan and perhaps Gujarat. Small-scale breeding will occur once the monsoon rains commence.

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/ECLC Desert Locust Information Service (eclc@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)
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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=PLjxRk5CAwvG_0iFxfjZ5C2fLByF3jvhvHOx
- **RAMSESV4 training videos.** A set of basic training videos are available on YouTube: <https://www.youtube.com/playlist?list=PLjxRk5CAwvG-PximOs9lCMxzZtYU93tvb>
- **RAMSESV4 and eLocust3 updates.** Updates can be downloaded from <https://sites.google.com/site/rv4elocust3updates/home>
- **FAOLOCAST 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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New information on Locust Watch. Recent additions to the web site (www.fao.org/ag/locusts) are:

- **Desert Locust situation updates.** Archives
- **eLocust3.** Activities – DLIS
- **RAMSESV4.** Activities – DLIS

CLCPRO web site. The CLCPRO web site (<http://clcpro-empres.org>) has been improved and updated.

2015 events. The following activities are scheduled or planned:

- **CLCPRO/EMPRES-WR.** Regional workshop for Desert Locust Information Officers in the Western Region, Nouakchott, Mauritania (8-12 June)



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

- July - September/October

WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July



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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.

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.

RECESSION

- period without widespread and heavy infestations by swarms.

REMISSION

- period of deep recession marked by the complete absence of gregarious populations.

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

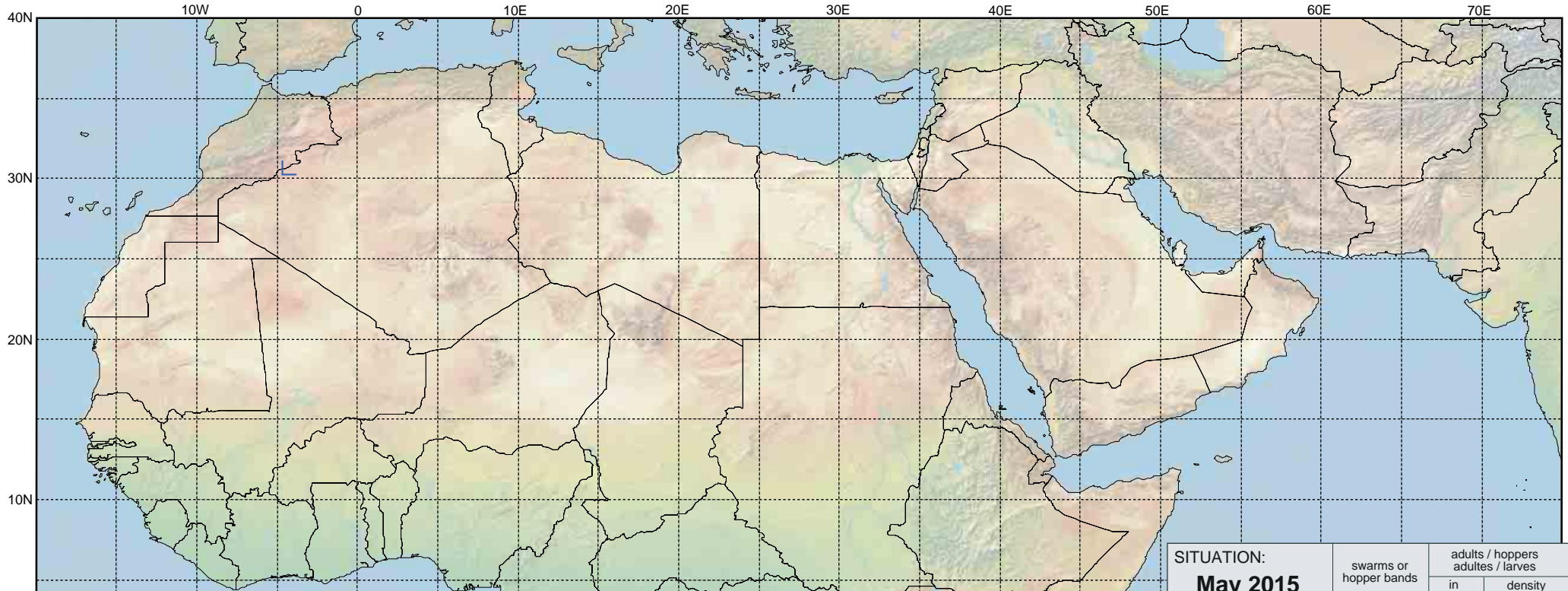
- locust-affected countries in South-West Asia: Afghanistan, India, Iran and Pakistan.



Desert Locust Summary

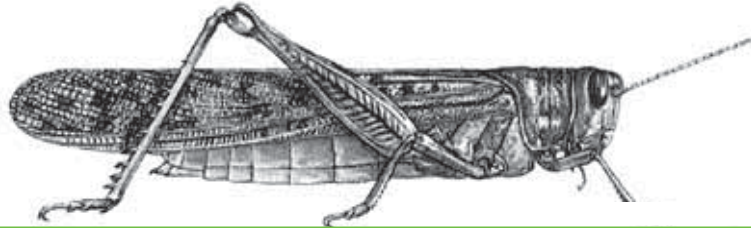
Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU:	15.07.15	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 2015 mai 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)			



warning level: **CALM**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



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**General Situation during June 2015
Forecast until mid-August 2015**

(3.7.2015)

The Desert Locust situation remained calm during June. Good rains and at least two generations of breeding will be required this summer before populations increase in the traditional summer breeding areas in the northern Sahel of West Africa and Sudan, and along both sides of the Indo-Pakistan border. So far, rains are late to arrive in the Sahel, except in central Niger and eastern Mali, while monsoon rains commenced some one to three weeks earlier than normal in India and Pakistan. Once the summer rains start, small-scale breeding will occur in the northern Sahel between Mauritania and western Eritrea. Therefore, regular surveys should commence shortly in all summer breeding areas but some places such as northern Mali, Darfur and the interior of Yemen will remain inaccessible due to insecurity.

Western Region. The situation remained calm in June. No locusts were reported in the region except for an immature adult in eastern Mali but this could not be confirmed by surveys due to prevailing insecurity. Seasonal rains started in central Niger and Tamesna, extending to eastern Mali, but were late to commence and had not began in other summer breeding areas. During the forecast period, small-scale breeding will occur in Mali and Niger, and in Mauritania and Chad once seasonal rains commence, causing locusts numbers to increase slightly. Dry conditions prevailed in Northwest Africa.

Central Region. The situation remained calm during June. No locusts were reported in the region and dry conditions prevailed. Although good rains associated with a tropical cyclone fell in northeast Oman, this is not likely to have a significant impact on the locust situation. So far, seasonal rains have not yet commenced in the summer breeding areas in the interior of Sudan and western Eritrea. However, they are expected to start very shortly and small-scale breeding will occur during the forecast period, causing locust numbers to increase slightly in both countries.

Eastern Region. No locusts were reported and the situation remained calm during June. The southwest monsoon arrived in the summer breeding areas along both sides of the Indo-Pakistan border during the last week of June, which was some one to three weeks earlier than usual. During the forecast period, small-scale breeding will cause locust numbers to increase slightly in both countries as a result of good rains so far.

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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Twitter: twitter.com/faolocust



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Weather & Ecological Conditions in June 2015

Hot and dry conditions prevailed in the summer breeding areas of the Sahel in West Africa and Sudan. The early arrival of the southwest monsoon brought good rains to summer breeding areas along both sides of the Indo-Pakistan border.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) moved northwards over the southern Sahel of West Africa during June, reaching the Mauritania-Mali border, northern Mali, central Niger, and south-central Chad by the end of the month. It was about 150 km south of the climatological normal position for this time of year in Mauritania but was further north than usual in Mali and western Niger. Consequently, light rains fell in central areas of Niger as far east as Tanout and north to southern Tamesna, extending to adjacent areas of eastern Mali as far north as Gao. Light showers also fell in parts of the southern and central Air Mountains in Niger. In eastern Chad, light showers fell near Abeche in the first decade while a few showers fell at the end of the month south of Nema in southeast Mauritania. As a result of the rains so far, vegetation was becoming green in parts of the western Air Mountains in Niger, and ecological conditions are expected to improve for breeding in central Niger and in parts of eastern Chad. In Northwest Africa, dry conditions prevailed.

In the **Central Region**, the Inter-Tropical Convergence Zone (ITCZ) moved northwards over the interior of Sudan during June, reaching the southern edge of the summer breeding areas. Its position was some 50-200 km south of the climatological normal position for this time of year, reaching south of Sodiri by the end of the month. Although, light rains began to fall in early June in southern portions of North Kordofan near En Nahud and El Obeid in Sudan and in parts of the western lowlands in Eritrea, ecological conditions remained dry and unfavourable for breeding. Light rains also fell in some areas along the Red Sea coastal plains of Yemen and Djibouti. Good rains associated with a weakened tropical cyclone, Ashobaa, occurred in northeast Oman on 10-13 June. Up to 150 mm of rain fell in the Sharqiya

region between the Wahiba Sands and Ras Al Hadd, with lighter rains reported in parts of Wusta and Dakhiliya regions. Consequently, breeding conditions may become favourable in some wadis of Sharqiya as floodwaters recede.

In the **Eastern Region**, pre-monsoon rains fell in the summer breeding along both sides of the Indo-Pakistan border during the first half of June. This year's southwest monsoon arrived in late June, which was about one week earlier than normal in Rajasthan, India and nearly three weeks early in Pakistan. By the end of June, nearly double the normal amount of rain had fallen in west Rajasthan.



Area Treated

No control operations were reported during June.



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

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

• FORECAST

Scattered adults are likely to appear in the southeast and breed on a small scale as seasonal rains commence.

Mali

• SITUATION

Although surveys were not carried out in June, an immature adult was reported near Gao (1616N/0003W).

• FORECAST

Isolated adults are likely to be present in parts of the Adrar des Iforas, Tamesna and Timetrine. Small-scale breeding is expected to start in areas of recent rainfall in southern Tamesna and extend to northern areas as seasonal rains commence.

Niger

• SITUATION

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

• FORECAST

Scattered adults are expected to appear in southern Tamesna and in central areas between Tahoua and Tanout, and breed on a small scale in areas of recent rainfall.

Chad

• SITUATION

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

• FORECAST

Scattered adults may appear in central and northeast areas, and breed on a small scale as seasonal rains commence.

Senegal

• SITUATION

No reports were received during June.

• FORECAST

No significant developments are likely.

Benin, Burkina Faso, Cameroon, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Nigeria, Sierra Leone and Togo

• FORECAST

No significant developments are likely.

Algeria

• SITUATION

No locusts were seen during surveys carried out in the central Sahara near Adrar (2753N/0017W) and the southern Sahara near Tamanrasset (2250N/0528E) in June.

• FORECAST

Scattered adults may be present and are likely to persist near irrigated areas of the central Sahara in the Adrar area. No significant developments are likely.

Morocco

• SITUATION

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

• FORECAST

No significant developments are likely.

Libya

• SITUATION

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

• FORECAST

No significant developments are likely.

Tunisia

• SITUATION

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

• FORECAST

No significant developments are likely.

CENTRAL REGION

Sudan

• SITUATION

A late report indicated that no locusts were present or reported during May. Similarly, no locusts were reported in June.

• FORECAST

Scattered adults are likely to present in and near cropping areas along the Nile and the Atbara rivers in River Nile and Northern States where small-scale breeding may occur. Low numbers of adults will appear in the summer breeding areas between North Darfur and Kassala, and breed on a small scale as seasonal rains commence.

Eritrea

• SITUATION

No locusts were seen on the northern Red Sea coast between Mehimet (1723N/3833E) and Karora (1745N/3820E) on 5-6 June.

• FORECAST

Scattered adults are likely to appear in the western lowlands where small-scale breeding will occur as seasonal rains commence.

Ethiopia

• SITUATION

No reports were received during June.

• FORECAST

No significant developments are likely.

Djibouti

• SITUATION

No reports were received during June.

• FORECAST

No significant developments are likely.

Somalia

• SITUATION

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

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No significant developments are likely.

Egypt

• SITUATION

During June, no locusts were seen in the Lake Nasser area near Tushka (2247N/3126E), Abu Simbel



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(2219N/3138E) and Garf Husein (2317N/3252E), and on the Red Sea coast between Shalatyn (2308N/3535E) and the Sudan border.

- **FORECAST**

No significant developments are likely.

Saudi Arabia

- **SITUATION**

No locusts were seen on the northern Red Sea coast near Umm Lajj (2501N/3716E) and in the spring breeding areas of the interior near Hail (2731N/4141E) and Tabuk (2823N/3635E) during June.

- **FORECAST**

No significant developments are likely.

Yemen

- **SITUATION**

A late report indicated that the locust situation remained unclear during April and May as surveys could not be carried out due to insecurity.

- **FORECAST**

Isolated adults may be present in areas of recent rainfall on the Red Sea coast; however, additional rain will probably be required before breeding can take place.

Oman

- **SITUATION**

During June, no locusts were seen during surveys on the central Batinah coast in the north, in the northern interior near Nizwa (2255N/5731E) and Adam (2223N/5731E) and between Buraimi (2415N/5547E) and Ibri (2314N/5630E), and on the Musandam Peninsula.

- **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) during June.

- **FORECAST**

No significant developments are likely.

Pakistan

- **SITUATION**

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

- **FORECAST**

Small-scale breeding will cause locust numbers to increase slightly in Tharparkar, Khipro and Cholistan.

India

- **SITUATION**

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

- **FORECAST**

Small-scale breeding will cause locust numbers to increase slightly in Rajasthan and Gujarat.

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.

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New information on Locust Watch. Recent additions to the web site (www.fao.org/ag/locusts) are:

- **Desert Locust situation updates.** Archives
- **Desert Locust outbreaks in 2013-2014.** Archives – Outbreaks
- **Drones.** Activities – DLIS
- **eLocust3.** Activities – DLIS
- **RAMSESV4.** Activities – DLIS
- **DLIO-WR workshop final report.** Publications – Reports
- **CLCPRO 10th Executive Committee meeting final report.** Publications – Reports

Training videos. See the new links above for the eLocust3 and RAMSESV4 training videos on YouTube.

2015 events. The following activities are scheduled or planned:

- **Pesticide Referee Group.** Stakeholder Workshop on the Procurement and Supply of Pesticide for Locust Control, Rome (2-3 September)



Glossary of terms

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SMALL

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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.



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OTHER REPORTING TERMS

BREEDING

- the process of reproduction from copulation to fledging.

SUMMER RAINS AND BREEDING

- July - September/October

WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July

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

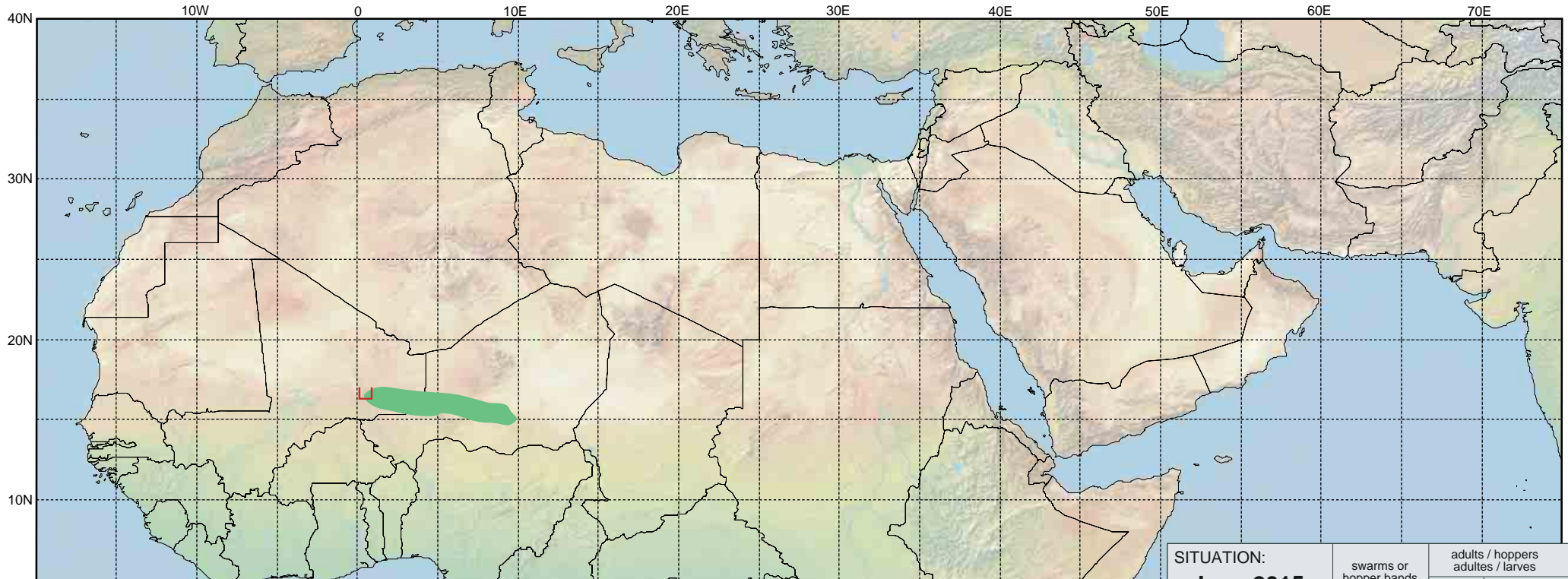
- locust-affected countries in South-West Asia: Afghanistan, India, Iran and Pakistan.



Desert Locust Summary

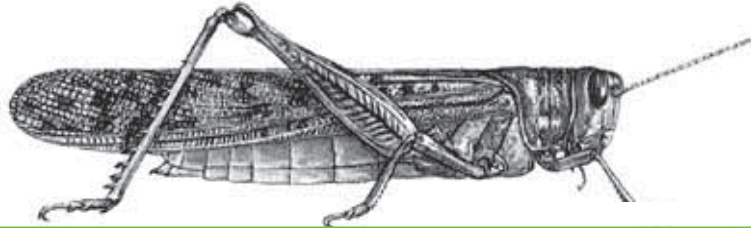
Criquet pèlerin - Situation résumée

441



FORECAST TO: PREVISION AU:	15.08.15	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: June 2015 juin 2015	swarms or hopper bands	adults / hoppers adultes / larves	
	essaims ou bandes larvaires	in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures			
mature or partly mature adults adultes matures ou partiellement matures			
adults, maturity unknown adultes, maturité inconnue			
egg laying or eggs pontes ou œufs			
hoppers larves			
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)			



warning level: **CALM**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 442



**General Situation during July 2015
Forecast until mid-September 2015**

(3.8.2015)

The Desert Locust situation remained calm during July. No locusts were present except for low numbers of solitarious adults in northern Sudan. By the end of the month, good rains had fallen throughout most of the summer breeding areas in the northern Sahel between Mauritania and Eritrea. Consequently, small-scale breeding during the forecast period will cause locust numbers to increase slightly in all countries. Unusually heavy and widespread rains fell in the summer breeding areas along both sides of the Indo-Pakistan border and may give rise to favourable conditions sufficient for two generations of breeding. Intensive monitoring should be carried out in both countries in the coming months to detect increases in locust numbers.

Western Region. The situation remained calm in July. No locusts were reported in the region as summer surveys did not start yet in Sahelian countries. Good rains fell in the northern Sahel from southeast Mauritania to eastern Chad that will cause ecological conditions to improve and become favourable for breeding. Consequently, small-scale breeding will occur during the forecast period, causing locust numbers to increase slightly in southern Mauritania, northern Mali and Niger, central and eastern Chad, and perhaps in the extreme south of Algeria. Dry conditions prevailed in Northwest Africa.

Central Region. The situation remained calm during July. Low numbers of solitarious adults were present near cropping areas along the Nile Valley in northern Sudan. As good rains fell in the summer breeding areas from Darfur to the lowlands in western Eritrea, small-scale breeding is expected to occur during the forecast period, causing locust numbers to increase slightly in both countries. Elsewhere, primarily dry conditions prevailed and no significant developments are likely.

Eastern Region. No locusts were reported and the situation remained calm during July. Unusually heavy and widespread rains fell along both sides of the Indo-Pakistan border during the last decade of July. This will cause extremely favourable breeding conditions to develop that could lead to two generations of breeding this summer in Rajasthan, India. During the forecast period, a first generation of breeding will occur, causing locust numbers to increase.

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. 442

DESERT LOCUST BULLETIN



Weather & Ecological Conditions in July 2015

Good rains fell in the summer breeding areas of the northern Sahel from Mauritania to western Eritrea. Unusually heavy rains fell along both sides of the Indo-Pakistan border.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) moved northwards over the southern Sahel of West Africa during July. In Mauritania, it was about 150-300 km south of the climatological normal position for this time of year, reaching Magta Lahjar during the first decade but then descending to Kiffa and Oualata in the second decade. In Mali and Niger, the ITCZ was some 100-150 km north of the mean, reaching Tessalit and Arlit, while in Chad it was about average for this time of year, reaching Kalait. Consequently, light to moderate rains fell in southern and southeast Mauritania, in the Adrar des Iforas of northern Mali and extending to Bir Bou Mokhtar and Tin Zaouatene in southern Algeria, on the Tamesna Plains in Mali and Niger, in central pasture areas of Niger, and in central and eastern Chad as far north as Beurkia and Fada. Annual vegetation was becoming green at mid-month in parts of southern Mauritania (northwest and northeast of Kiffa, west of Tintane, and between Aioun El Atrous and Nema), central Niger (Tanout to Tasker), and central and eastern Chad. In southern Algeria, moderate rain fell in parts of the Hoggar Mountains while light rains fell near Tamanrasset and In Guezzam.

In the **Central Region**, the Inter-Tropical Convergence Zone (ITCZ) continued to move northwards over the interior of Sudan during July, reaching central areas of North Kordofan and nearly Khartoum at mid-month. Nevertheless, its position remained some 150 km south of the climatological normal mean for this time of year. As a result, rainfall was limited to areas near Sodiri and Kassala, extending to the western lowlands in Eritrea but improved in North Kordofan during the last decade of the month, reaching Abu Uruq. Light rain fell in the mountains bordering the Red Sea in Yemen and in the Jabal Akdar in northern Oman. Annual vegetation was becoming green in North Darfur near Jabal Maydub,

in North Kordofan between En Nahud and Umm Badr, and along Khor Baraka in western Eritrea.

In the **Eastern Region**, light moderate rains fell in parts of the summer breeding areas along both sides of the Indo-Pakistan border during the first two decades of July, followed by heavy showers in the last decade throughout all summer breeding areas. With the early onset of the rains this year and more than double the normal amount of rain already received so far, there is a possibility for two generations of breeding to occur this summer in west Rajasthan. By mid-July, natural vegetation started to become green in mid-July between Jodhpur and Phalodi, and near Bikaner. In southeast Iran, light rain fell in parts of the interior.



Area Treated

No control operations were reported during July.



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

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

• FORECAST

Scattered adults are likely to appear in the south and southeast where small-scale breeding will cause locust numbers to increase slightly.

Mali

• SITUATION

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

• FORECAST

Isolated adults are likely to be present in parts of the Adrar des Iforas, Tamesna and Timetrine where small-scale breeding will cause locust numbers to increase slightly.

Niger

• SITUATION

During July, three individual solitarious adults were seen in the southeast Air Mountains near Barghot (1712N/0908E).

- **FORECAST**

Scattered adults are expected to appear in southern Tamesna and in central areas between Tahoua and Tanout, and breed on a small scale in areas of recent rainfall.

Chad

- **SITUATION**

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

- **FORECAST**

Scattered adults are likely to appear in central and northeast areas, and breed on a small scale as seasonal rains commence.

Senegal

- **SITUATION**

No reports were received during July.

- **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**

No locusts were seen during surveys carried out in the central Sahara near Adrar (2753N/0017W) in July.

- **FORECAST**

Scattered adults may be present and are likely to persist near irrigated areas of the central Sahara in the Adrar area. No significant developments are likely.

Morocco

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

Libya

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

Tunisia

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

CENTRAL REGION

Sudan

- **SITUATION**

During July, scattered immature and mature solitary adults were present near cropping areas along the Nile River near Dongola (1910N/3027E), Ed Debba (1803N/73057E), and Ed Damer (1734N/3358E), and northwest of Khartoum (1533N/3235E) in Wadi Muqqadam. No locusts were seen in the Baiyuda Desert, between Khartoum and Shendi (1641N/3322E), and in North Kordofan near Umm Saiyala (1426N/3112E).

- **FORECAST**

Small-scale breeding will cause locust numbers to increase between North Darfur and Kassala as well as in cropping areas along the Nile and Atbara rivers.

Eritrea

- **SITUATION**

No locusts were seen during surveys in mid-July in the southern and central portions of the western lowlands between Golj (1444N/3643E) and Akurdet (1532N/3753E).

- **FORECAST**

Scattered adults are likely to appear in the western lowlands where small-scale breeding will occur in areas of recent rainfall.

Ethiopia

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

Djibouti

- **SITUATION**

No reports were received during July.

- **FORECAST**

No significant developments are likely.

Somalia

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.



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DESERT LOCUST BULLETIN



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DESERT LOCUST BULLETIN

Egypt

- SITUATION

No locusts were seen in the Lake Nasser area during July.

- FORECAST

No significant developments are likely.

Saudi Arabia

- SITUATION

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

- FORECAST

No significant developments are likely.

Yemen

- SITUATION

No reports were received during July.

- FORECAST

Isolated adults may be present in areas of recent rainfall on the Red Sea coast.

Oman

- SITUATION

No locusts were seen during surveys in the southern portion of Sharqiya region in the northeastern interior in late July.

- 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) during July.

- FORECAST

No significant developments are likely.

Pakistan

- SITUATION

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

- FORECAST

Small-scale breeding will cause locust numbers to increase in Tharparkar, Khipro and Cholistan.

India

- SITUATION

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

- FORECAST

Small-scale breeding will cause locust numbers to increase in Rajasthan and Gujarat.

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 (eclo@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>
 - **FAOLOCAST 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.** Archives
- **Desert Locust outbreaks in 2013-2014.** Archives – Outbreaks
- **Drones.** Activities – DLIS
- **eLocust3.** Activities – DLIS
- **RAMSESV4.** Activities – DLIS
- **DLIO-WR workshop final report.** Publications – Reports
- **CLCPRO 10th Executive Committee meeting final report.** Publications – Reports

Training videos. See the new links above for the eLocust3 and RAMSESV4 training videos on YouTube.

2015 events. The following activities are scheduled or planned:

- **Pesticide Referee Group.** Stakeholder Workshop on the Procurement and Supply

of Pesticide for Locust Control, Rome (2-3 September)



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

- July - September/October



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DESERT LOCUST BULLETIN



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WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July

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

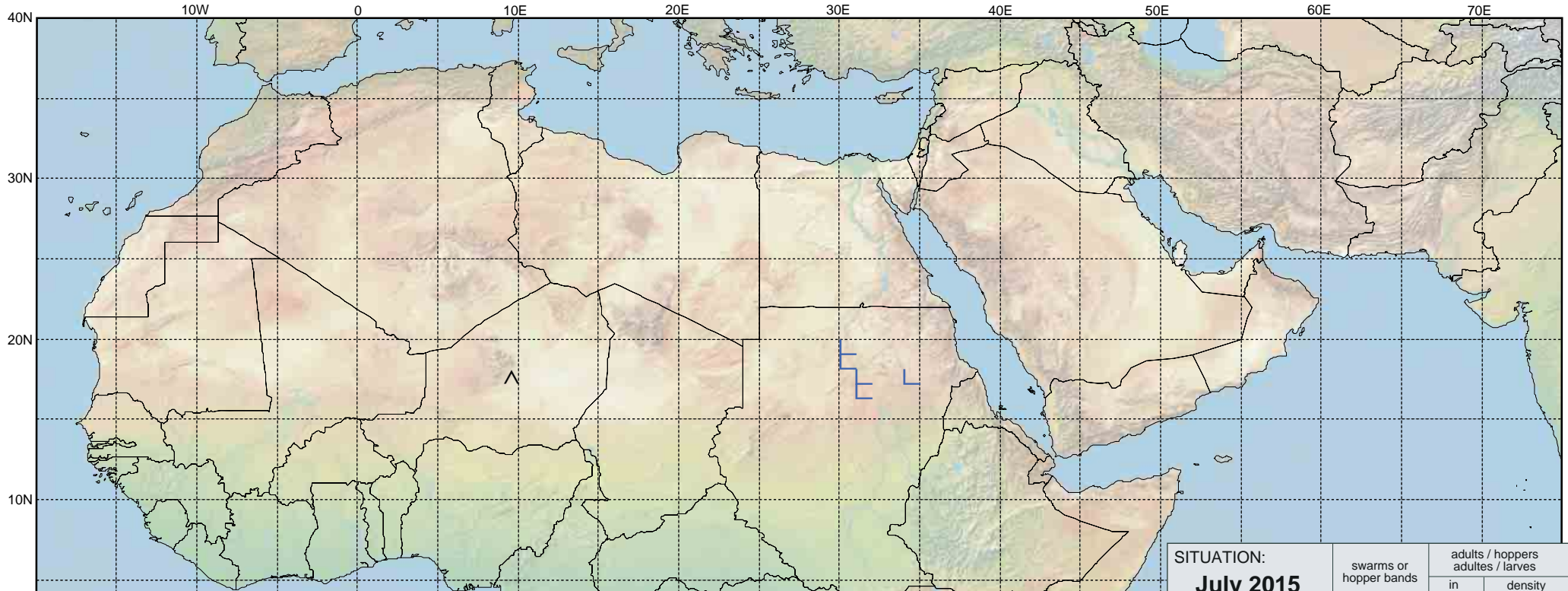
- locust-affected countries in South-West Asia: Afghanistan, India, Iran and Pakistan.



Desert Locust Summary

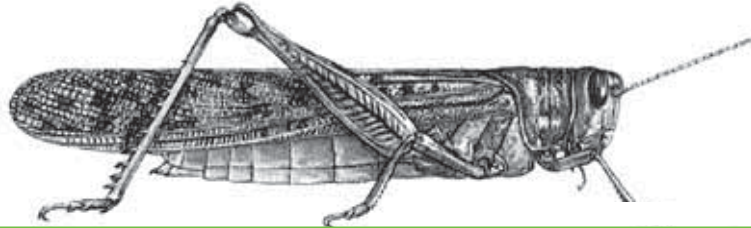
Criquet pèlerin - Situation résumée

442



FORECAST TO: PREVISION AU:	15.09.15	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: July 2015 juillet 2015	swarms or hopper bands	adults / hoppers adultes / larves	
	essaims ou bandes larvaires	in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures			
mature or partly mature adults adultes matures ou partiellement matures			
adults, maturity unknown adultes, maturité inconnue			
egg laying or eggs pontes ou œufs			
hoppers larves			
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)			



warning level: **CALM**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 443



**General Situation during August 2015
Forecast until mid-October 2015**

(2.9.2015)

The Desert Locust situation remained calm during August. Only low numbers of solitarious adults were present in parts of the summer breeding areas in the northern Sahel of Mauritania, Niger, Chad and Sudan. Nevertheless, widespread good rains fell throughout all of these areas and ecological conditions have become favourable that will allow small-scale breeding to occur during September and October. As a result, locust numbers are expected to increase gradually in Mauritania, Mali, Niger, Chad, Algeria, Sudan and Eritrea. Similarly, small-scale breeding is likely along both sides of the Indo-Pakistan border. Regular surveys should be conducted in all concerned countries during the forecast period.

Western Region. The situation remained calm in August. Low numbers of solitarious adults were seen during surveys in southern Mauritania, the Air Mountains in Niger and in western and northeast Chad. Surveys were not possible in northern Mali due to prevailing insecurity. Widespread good rains fell for a second consecutive month throughout the summer breeding areas in the northern Sahel between Mauritania and Chad, extending to southern Algeria and northern Mauritania. Consequently, relatively large areas of annual vegetation became green in the northern Sahel and breeding conditions were extremely favourable. During the forecast period, small-scale breeding will cause locust numbers to increase in southern Mauritania, northern Mali and Niger, Chad and southern Algeria.

Central Region. The situation remained calm during August. Low numbers of solitarious adults remained near cropping areas along the Nile Valley in northern Sudan. Widespread good rains fell in the summer breeding areas from western Sudan to the western lowlands in Eritrea for a second consecutive month, causing annual vegetation to become green in most areas. Consequently, small-scale breeding is expected to occur during the forecast period, causing locust numbers to increase in both countries. A few isolated adults were present in southern Egypt. Elsewhere, mainly dry conditions prevailed and no significant developments are likely.

Eastern Region. No significant infestations were reported and the situation remained calm during August. An isolated adult was seen near the India border in Cholistan, Pakistan. Breeding conditions continued to improve along both sides of the Indo-Pakistan where small-scale breeding will cause locust numbers to increase slightly during the forecast period.

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DESERT LOCUST BULLETIN



Weather & Ecological Conditions in August 2015

Good rains fell for a second consecutive month throughout the summer breeding areas of the northern Sahel from Mauritania to western Eritrea, causing large areas to become green. Monsoon rains continued along both sides of the Indo-Pakistan border.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) moved northwards over the northern Sahel of West Africa during the first decade of August and was 150-300 km further north than usual over northern Mali and Niger and reached southern Algeria. Thereafter, it retreated southwards but still remained further north than normal. Consequently, good rains fell throughout the summer breeding areas of the northern Sahel between Mauritania and Chad. Good rains also fell in northwest and northern Mauritania and in the Hoggar Mountains and extreme south of Algeria. As a result, annual vegetation became green in southern Mauritania, along wadis in the Adrar des Iforas in northern Mali, on the southern plains of the Tamesna in Mali and Niger, over large portions of central Niger from Tahoua to Chad, throughout most of the northern Sahel in Chad as well as wadis in the northeast, and along several wadis northwest of Tin Zaouatene in southern Algeria. In Morocco, small areas of green vegetation persisted in a few places of the Draa and Ziz-Ghris valleys.

In the **Central Region**, the Inter-Tropical Convergence Zone (ITCZ) continued to move northwards over the interior of Sudan during the first decade of August and reached the Baiyuda Desert, which is its climatological normal mean position for this time of year. Thereafter, it retreated nearly 125 km southwards, which is unusual. Nevertheless, light to moderate rains fell in the summer breeding areas of the interior of Sudan and western Eritrea during August. This caused annual vegetation to become green over large portions of West and North Darfur, in North Kordofan near Sodiri, in parts of the Baiyuda Desert, and in the east near Kassala as well as several wadis on the western side of the Red Sea Hills between Derudeb and the Nile Valley. Vegetation was also becoming green in the southern part of the

western lowlands in Eritrea and along Khor Barka. Good rains fell in the Yemeni Highlands and parts of the Asir Mountains in Saudi Arabia between Mecca and Jizan that may run off onto the Red Sea coastal plains and cause conditions to improve slightly. Light rain fell in the Abraq area of southern Egypt. Elsewhere, dry conditions prevailed in the region.

In the **Eastern Region**, seasonal rains associated with the southwest monsoon continued to fall in the summer breeding areas along both sides of the Indo-Pakistan border during August. Although no rain fell during the first decade of the month, good showers occurred during the second decade in central and northern Rajasthan, extending to adjacent areas of Khipro and Cholistan deserts in Pakistan. Lighter rain fell in southern Rajasthan and adjacent areas of Tharparkar desert in Pakistan. Consequently, annual vegetation was becoming green in Rajasthan and near the border in Cholistan, Khipro and Tharparkar deserts.



Area Treated

No control operations were reported during August.



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During the last decade of August, isolated immature and mature solitary adults were seen in the south between Kiffa (1638N/1124W) and Tidjikja (1833N/1126W), and in the southeast between Nema (1636N/0715W) and Oualata (1717N/0701W).

• FORECAST

Small-scale breeding will cause locust numbers to increase slightly throughout the south where hoppers are likely to appear in September and fledge by end of the forecast period.

Mali

• SITUATION

No reports were received during August.

• FORECAST

Locust numbers are expected to increase in the Adrar des Iforas, Tamesna and Timetrine where scattered adults are almost certainly present and breeding in areas of recent rainfall.

Niger

• SITUATION

During the last decade of August, isolated immature and mature adults were seen in a few places in the Air Mountains southwest of Iferouane (1905N/0824E) and east of Timia (1809N/0846E) as well as south and northwest of Agadez (1658N/0759E). No surveys were carried out on the Tamesna Plains or in central areas.

• FORECAST

Locust numbers are expected to increase on the Tamesna Plains and in central areas between Tahoua and Ngourti where scattered adults are almost certainly present and breeding in areas of recent rainfall.

Chad

• SITUATION

During August, isolated immature and mature solitary adults were present at densities up to 300 adults/ha in the west between Mao (1406N/1511E), Salal (1448N/1712E) and Moussoro (1338N/1629E), in the east between Arada (1501N/2040E) and Kalait (1550N/2054E), and in the northeast near Fada (1714N/2132E).

• FORECAST

Small-scale breeding will cause locust numbers to increase in Kanem, Batha, Biltine and BET where hoppers are likely to appear in September and fledge by end of the forecast period.

Senegal

• SITUATION

No reports were received during August.

• 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

No locusts were seen during surveys carried out in the central Sahara between Timimoun (2915N/0014E) and Reggane (2643N/0010E) during August.

• FORECAST

Scattered adults may appear near irrigated areas of the central Sahara in the Adrar area, 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.

Morocco

• SITUATION

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

• FORECAST

No significant developments are likely.

Libya

• SITUATION

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

• FORECAST

No significant developments are likely.

Tunisia

• SITUATION

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

• FORECAST

No significant developments are likely.

CENTRAL REGION

Sudan

• SITUATION

During August, scattered immature and mature solitary adults were present near cropping areas along the Nile River near Merowe (1830N/3149E) and Abu Hamed (1932N/3320E). Scattered mature solitary adults were seen near Kassala (1527N/3623E). No locusts were reported elsewhere in North Kordofan, Northern, and River Nile states as well as on the western side of the Red Sea Hills.

• FORECAST

Small-scale breeding will cause locust numbers to increase between West Darfur and the Red Sea Hills as well as in cropping areas along the Nile and Atbara rivers.

Eritrea

• SITUATION

During August, no locusts were seen on the northern Red Sea coastal plains. No surveys were undertaken in the summer breeding areas of the western lowlands.

• FORECAST

Locust numbers are expected to increase in the western lowlands where scattered adults are likely to be present and breeding in areas of recent rainfall.



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Ethiopia

- SITUATION

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

- FORECAST

No significant developments are likely.

Djibouti

- SITUATION

No reports were received during August.

- FORECAST

No significant developments are likely.

Somalia

- SITUATION

No reports were received during August.

- FORECAST

No significant developments are likely.

Egypt

- SITUATION

During August, isolated immature solitary adults were seen near Lake Nasser in the Tushka (2247N/3126E) area.

- FORECAST

No significant developments are likely.

Saudi Arabia

- SITUATION

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

- FORECAST

No significant developments are likely.

Yemen

- SITUATION

During August, information was received from the summer breeding areas of the interior where scattered adults were seen copulating and laying eggs in areas of recent rainfall between Marib (1527N/4519E) and Al Abr (1608N/4714E).

- FORECAST

Small-scale breeding will cause locust numbers to increase slightly in Ramlat Sabatayn between Marib and Al Abr. Isolated adults may be present in areas of recent rainfall on the Red Sea coast.

Oman

- SITUATION

No locusts were seen during surveys on the Musandam Peninsula and in the south near Marmul (1808N/5516E) during August.

- 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) during August.

- FORECAST

No significant developments are likely.

Pakistan

- SITUATION

No locusts were seen during surveys carried out in Tharparkar, Khipro and Cholistan deserts during August except for one mature solitary adult near the India border in Cholistan.

- FORECAST

Small-scale breeding will cause locust numbers to increase in Tharparkar, Khipro and Cholistan.

India

- SITUATION

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

- FORECAST

Small-scale breeding will cause locust numbers to increase in Rajasthan and Gujarat.

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/ECLC Desert Locust Information Service (eclc@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>
- **FAOLOCAST 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:

- **Pesticide Referee Group follow-up.** Working papers (Arabic, English, French, Russian) for the Stakeholder Workshop on the Procurement and Supply of Pesticide for Locust Control, Rome (2-3 September) – Information (News/Events 2015)

Training videos. See the new links above for the eLocust3 and RAMSESV4 training videos on YouTube.

Joyce Magor (14 February 1933 – 16 August 2015). Joyce joined the Anti-Locust Research Centre (ALRC) in the U.K. in 1956 and obtained her PhD in locust biogeography in 1962, having determined the importance of rainfall as a factor in Desert Locust geographical distribution. She continued working on locust information for ALRC, that later became the Centre for Overseas Pest Research (COPR) which in turn evolved into the Natural Resources Institute (NRI), until her retirement in 1993. She was a fellow of the Royal Geographical Society and an honourable recipient of the Order of the British Empire. After she retired, she worked closely with FAO's Desert Locust Information Service (DLIS) and was instrumental in developing the SWARMS GIS. She worked at FAO and continued to prepare case studies and published several papers on Desert Locust management. We would like to express our sincere condolences to her family and Government.



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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

- July - September/October

WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July

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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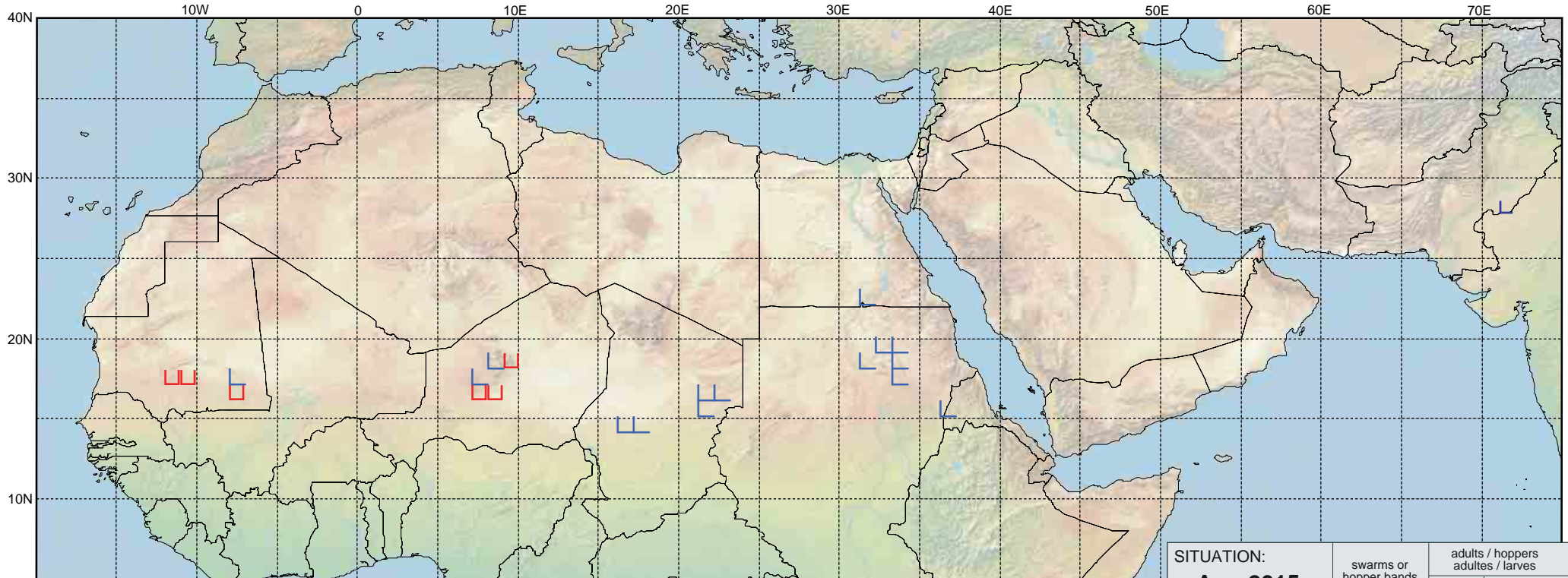
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Desert Locust Summary

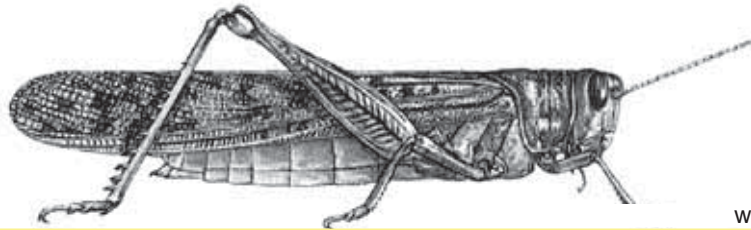
Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU: 15.10.15	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: Aug 2015 août 2015	swarms or hopper bands	adults / hoppers adultes / larves	
	essaims ou bandes larvaires	in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures			
mature or partly mature adults adultes matures ou partiellement matures			
adults, maturity unknown adultes, maturité inconnue			
egg laying or eggs pontes ou œufs			
hoppers larves			
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)			



warning level: **CAUTION**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



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**General Situation during September 2015
Forecast until mid-November 2015**

(2.10.2015)

The Desert Locust situation remained calm during September. Despite good rainfall and favourable ecological conditions, only limited breeding has been detected so far in the northern Sahel of West Africa. Nevertheless, locust numbers are gradually increasing and there may be more locusts present than seen during surveys. As the seasonal rains have nearly ended and once vegetation begins to dry out, there is a low to moderate risk that locusts may concentration and form a few small groups in parts of Mauritania, Mali, Niger, Chad and Sudan during October. There will also be a gradual shift of locusts from southern to northwest Mauritania, from northern Mali and Niger to southern Algeria, and from the interior of Sudan to the Red Sea coast. Therefore, caution should be exercised and strict vigilance maintained in all countries during October and November.

Western Region. The situation remained calm in September. Only low numbers of locusts were seen during surveys in southern Mauritania, northern Niger, and central and eastern Chad. There were unconfirmed reports of locusts in northern Mali. As ecological conditions were unusually favourable over a large portion of the summer breeding areas in the northern Sahel this year and not all areas could be surveyed, there may be more locusts present than reported. Consequently, there is a potential risk that groups may form as vegetation starts to dry out. During October, an increasing number of adults are

likely to appear in western Mauritania as well as in the north and in adjacent areas of **Western Sahara** where unusually good rains fell in late September. Locusts may also appear in southern and central **Algeria**. Small-scale breeding could cause locust numbers to eventually increase in these areas.

Central Region. The situation remained calm during September. Although very few locusts were seen during surveys, ecological conditions remained favourable and some undetected breeding may have occurred in **Sudan**. Consequently, there is a risk that locust numbers may increase in October and groups could form as vegetation dries out. The adults are expected to move to areas of recent rainfall west of the Red Sea Hills and eventually reach the winter breeding areas along the Red Sea coast. In **Eritrea**, no locusts were seen during a survey in the western lowlands but good rainfall and runoff occurred in parts of the winter breeding areas along the Red Sea coastal plains. No surveys could be carried out in **Yemen** where the situation was not clear but breeding conditions may be improving along the Red Sea and Gulf of Aden coasts as a result of recent rainfall. In northern **Somalia**, scattered adults may appear in November on the northwest coastal plains where small-scale breeding could occur. No locusts were seen during surveys in **Egypt, Saudi Arabia** and **Oman**.

Eastern Region. The situation remained calm during September. Only scattered adults were detected in the Cholistan Desert of **Pakistan** near the border with India. No locusts were seen in adjacent areas of **India**. By the end of the month, the monsoon rains had ended. Nevertheless, small-scale breeding is likely to continue early in the forecast period but will decline as vegetation dries out.

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 September 2015

Good rains fell for a third consecutive month throughout the summer breeding areas of the northern Sahel from Mauritania to western Eritrea where large areas of green vegetation and favourable breeding conditions persisted. By the end of the month, the rains had nearly ceased. Rainfall also declined along the Indo-Pakistan border as the southwest monsoon ended.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) was located further north over the Sahel during September than in most years and reached southern Algeria. Good rains fell in all breeding areas as well as in parts of central and southern Algeria, Western Sahara and northern Mauritania. Consequently, breeding conditions were favourable over large areas of southern Mauritania, in Timetrine, the Tilemsi Valley, Adrar des Iforas and Tamesna of northern Mali, central Tamesna and wadis in the Air Mountains of Niger as well as large portions of the pasture areas between Tahoua and Termit Massif, in northeastern Chad, and in southern Algeria near the Mali border between Timeiaouine and Tin Zaouatene. Ecological conditions were improving in southwest Mauritania and northeast Chad due to late rains. The ITCZ began retreating southwards at mid-month and by the end of the month it had reached its normal position over southern Mauritania (Boutilimit-Oualata), central Mali, central Niger (Tchin-Tasker) and central Chad (Salal-Abeche). This caused the persistent good rains to abate, and vegetation began to dry out in a few places, for example in central Chad. In Northwest Africa, good rains fell in southwest Libya during the last week of September, and small areas of green vegetation persisted south of the Atlas Mountains in the Draa and Ziz-Ghris valleys in Morocco.

In the **Central Region**, the Inter-Tropical Convergence Zone (ITCZ) remained south of its climatological normal mean position during the first decade of September but was nearly normal during the second decade. This allowed the continuation of good rains in Darfur, North Kordofan south of Abu Uruq, and near Kassala while heavier showers

occurred between the Nile Valley and the Red Sea Hills as far north as Tomala. Consequently, vegetation was green in North Darfur, North Kordofan between Sodiri and Abu Uruq, and in the wadis west of the Red Sea Hills between Atbara and Haiya. The ITCZ retreated some 200 km further south than normal during the third decade, reaching El Obeid. This caused the good rains to end in most areas. In Eritrea, good rains fell in the western lowlands. In the winter breeding areas, early rainfall and runoff occurred on the Red Sea coast near Sheib while heavier rains fell along the southern coastal plains. Good rains also fell on parts of the Red Sea coast from Qunfidah, Saudi Arabia to Bab El Mandab, Yemen, on the coast west of Aden, and in the northern interior of Oman near Ibri. Vegetation was mainly dry in all of these areas. In northern Somalia, the short (Deyr) rains commenced on the plateau and escarpment in the northwest where above-average rains may occur this year as a result of El Niño.

In the **Eastern Region**, the southwest monsoon began to withdraw from the summer breeding areas along both sides of the Indo-Pakistan border in September. By the end of the month, it had receded completely and was south of Gujarat. As a result, light to moderate showers fell along the Indo-Pakistan border in Cholistan and Tharparkar deserts at mid-month. Vegetation remained green, particularly in Tharparkar and Cholistan as well as in adjacent areas of West Rajasthan in India. This year's monsoon resulted in about 50% more rainfall than normal in West Rajasthan, average rainfall in East Rajasthan and some 27% less rainfall than normal in Gujarat, India.



Area Treated

No control operations were reported during September.



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

Despite favourable breeding conditions, only isolated immature and mature solitary adults were seen in a few places east of Nema (1636N/0715W), near Tidjikja (1833N/1126W) and north of Magta Lahjar (1730N/1305W) during surveys carried out in

September. During the last week, a few isolated mid-instar solitary hoppers were seen east of Nema, and isolated immature solitary adults were reported near Akjoujt (1945N/1421W). No surveys were carried out between Kiffa (1638N/1124W) and Nema.

- **FORECAST**

Small-scale breeding will cause locust numbers to increase throughout the south with fledging during October. An increasing number of locusts are likely to appear in the west as well as in recent areas of rainfall in the northwest and north. There is a moderate risk that small groups could form in some of these areas and breed.

Mali

- **SITUATION**

A late reported indicated that no surveys were carried out and no locusts were reported during August.

During September, there were six reports of locust sightings in the north but only one could be confirmed in which scattered solitary hoppers and adults were present between Anefis (1803N/0036E) and Kidal (1827N/0125E). The other reports were of adults in the southern Adrar des Iforas southeast of Kidal, in the Tilemsi Valley northwest of Aguelhoc (1927N/0052E), and in southern Timetrine southwest of Ti-n-kar (1926N/0022W).

- **FORECAST**

Small-scale breeding will cause locust numbers to increase in Timetrine, Tilemsi Valley, Adrar des Iforas and Tamesna where there is a moderate risk that a few small groups will form once vegetation begins to dry out.

Niger

- **SITUATION**

During the first week of September, low numbers of immature and mature adults were seen during a survey in Tamesna near In Abangharit (1754N/0559E). Copulating adults were reported at one location. No surveys were carried out elsewhere on the Tamesna Plains or in central pasture areas.

- **FORECAST**

Small-scale breeding will cause locust numbers to increase in Tamesna, in central areas between Tahoua and Termit Massif and, perhaps, in the Air Mountains. There is a moderate risk that a few small groups will form in these areas once vegetation begins to dry out.

Chad

- **SITUATION**

During September, isolated immature and mature solitary adults were present in Kanem and Batha between Salal (1448N/1712E) and Djedaa (1331N/1834E), and in the east from north of Abeche

(1349N/2049E) to south of Fada (1714N/2132E). The number of locations and density, up to 1,000 adults/ha, increased compared to the previous month, especially in the east. Small-scale breeding was detected near Arada where third instar solitary hoppers were seen at mid-month from eggs that were laid during the third week of August. A few adults were seen laying eggs during the last week near Kalait (1550N/2054E).

- **FORECAST**

Small-scale breeding will cause locust numbers to increase further in Kanem, Batha, Biltine and BET with fledging in October. There is a moderate risk that a few small groups will form in these areas once vegetation begins to dry out.

Senegal

- **SITUATION**

No reports were received during September.

- **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 September, no locusts were seen during surveys carried out in the central Sahara between Timimoun (2915N/0014E) and Reggane (2643N/0010E), and in the southern Sahara southwest of Tamanrasset (2250N/0528E).

- **FORECAST**

Scattered adults may appear near irrigated areas of the central Sahara in the Adrar area, 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.

Morocco

- **SITUATION**

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



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- **FORECAST**

Low numbers of adults are expected to appear in areas of recent rainfall in the Western Sahara where small-scale breeding could eventually occur.

Libya

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

Tunisia

- **SITUATION**

No reports were received during September.

- **FORECAST**

No significant developments are likely.

CENTRAL REGION

Sudan

- **SITUATION**

During the first half of September, scattered immature and mature solitary adults were present near cropping areas along the Nile River north of Dongola (1910N/3027E) and along the Atbara River near Ed Damer (1734N/3358E). Isolated adults were seen in the extreme north near Selima Oasis (2122N/2119E). No locusts were reported elsewhere in North Kordofan, Northern, and River Nile states as well as on the western side of the Red Sea Hills.

- **FORECAST**

Small-scale breeding will cause locust numbers to increase between West Darfur and the Red Sea Hills as well as in cropping areas along the Nile and Atbara rivers. There is a moderate risk that a few small groups will form in these areas once vegetation begins to dry out and move east towards the Red Sea coast.

Eritrea

- **SITUATION**

No locusts were seen in the western lowlands between Teseney (1506N/3639E) and Kerkebet (1604N/3725E) in mid-September.

- **FORECAST**

Small-scale breeding could cause locust numbers to increase slightly in the western lowlands during October. By the end of the forecast period, scattered

adults are likely to appear in areas of recent rainfall on the Red Sea coastal plains.

Ethiopia

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

Djibouti

- **SITUATION**

No reports were received during September.

- **FORECAST**

No significant developments are likely.

Somalia

- **SITUATION**

No surveys were carried out and no locusts were reported during August and September.

- **FORECAST**

Scattered adults are likely to appear on the northwest coastal plains in November and breed on a small scale in areas that receive rainfall.

Egypt

- **SITUATION**

No locusts were seen near Lake Nasser in the Tushka (2247N/3126E) and Abu Simbel (2219N/3138E) areas during September

- **FORECAST**

No significant developments are likely.

Saudi Arabia

- **SITUATION**

No locusts were seen during surveys carried out in September near Mecca (2125N/3949E).

- **FORECAST**

Low numbers of adults may appear in areas of recent rainfall on the central Red Sea coastal plains and eventually breed on a small-scale towards the end of the forecast period if conditions are favourable.

Yemen

- **SITUATION**

No surveys were possible during September due to continued insecurity.

- **FORECAST**

Scattered adults may be present and breeding on a small-scale in areas of recent rainfall on the Red Sea and Gulf of Aden coasts. This situation is expected to continue during the forecast period.

Oman

- **SITUATION**

No locusts were seen during surveys on the

Musandam Peninsula and in the Sharqiya region near Sinaw (2230N/5802E) in September.

• **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) during September.

• **FORECAST**

No significant developments are likely.

Pakistan

• **SITUATION**

During September, isolated mature solitary adults were seen in a few places to the east of Rahimyar Khan (2822N/7020E) and Bahawalpur (2924N/7147E) in the Cholistan and Khipro desert near the Indian border. No locusts were seen in the Las Bela area west of Karachi (2450N/6702E).

• **FORECAST**

Small-scale breeding is likely to continue early in the forecast period but will decline as vegetation dries out in Tharparkar, Khipro and Cholistan.

India

• **SITUATION**

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

• **FORECAST**

Small-scale breeding is likely to continue early in the forecast period but will decline as vegetation dries out in Rajasthan and Gujarat.

Afghanistan

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

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:

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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



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- **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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Training videos. See the new links above for the eLocust3 and RAMSESV4 training videos on YouTube.



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

- July - September/October

WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July

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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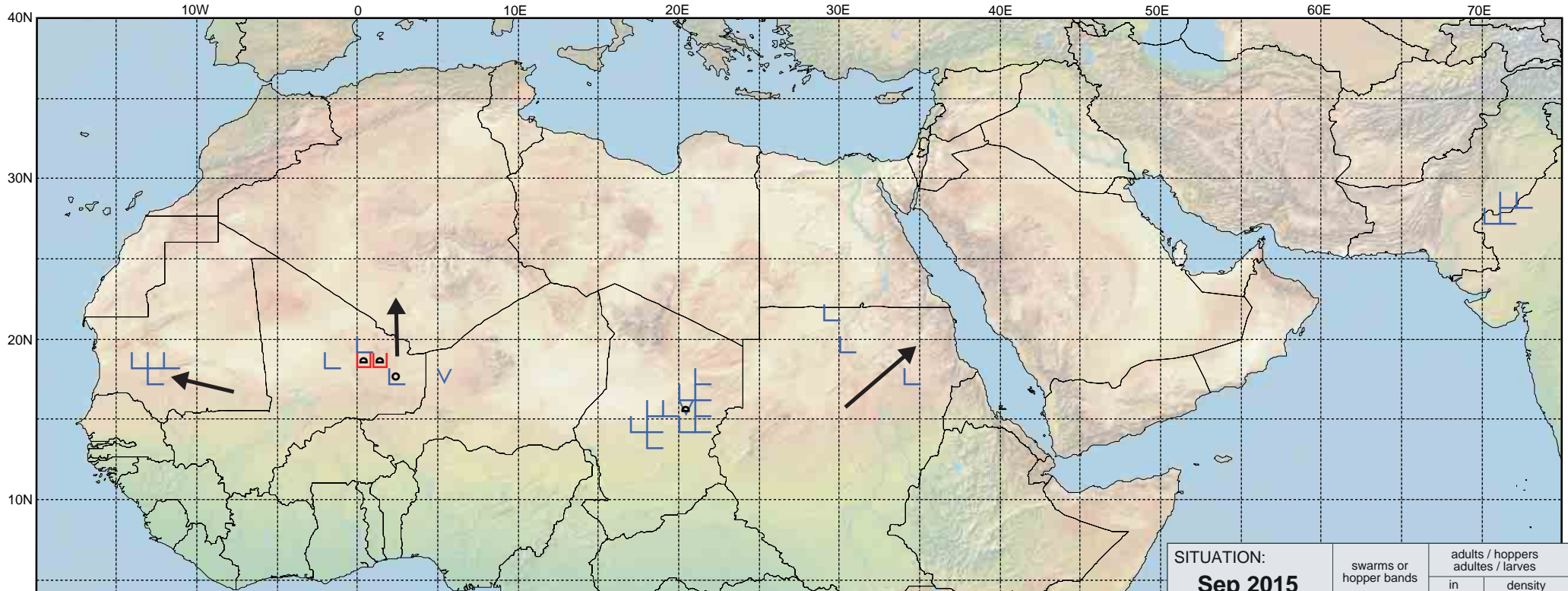
page 7 of 8



Desert Locust Summary

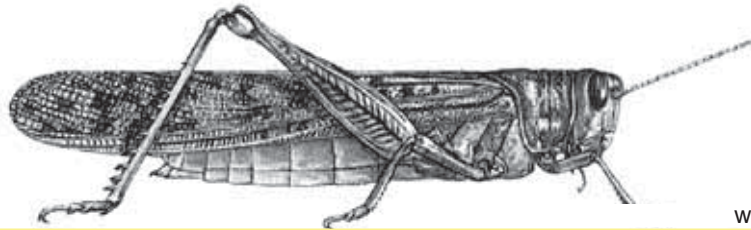
Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU:	15.11.15	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: Sep 2015 sep 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 hoppers			
larvae larves			
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)			



warning level: **CAUTION**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



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**General Situation during October 2015
Forecast until mid-December 2015**

(3.11.2015)

The Desert Locust situation remained calm during October. Although seasonal rains nearly ended in the northern Sahel of West Africa and Sudan, late breeding occurred in Niger and commenced in northwest Mauritania. Nevertheless, locust numbers remained low. Unusually heavy and widespread rains may allow ecological conditions to remain favourable for up to six months in northern Mauritania and adjacent areas of Algeria, Morocco and Western Sahara as well as in southern Yemen from tropical cyclone Chapala. Above-average rains related to El Niño may fall in northern Somalia. During the forecast period, small-scale breeding will cause locust numbers to increase gradually in northwest and northern Mauritania, Western Sahara, western Algeria, and along both sides of the Red Sea and Gulf of Aden. Countries should remain vigilant.

Western Region. The situation remained calm in October. Although seasonal rains declined in the summer breeding areas of the northern Sahel, ecological conditions remained favourable from previous rains. Scattered adults were present in Mauritania, northern Niger and northeast Chad. Small-scale breeding was detected in Niger and commenced in northwest Mauritania. Unusually heavy rains fell over a widespread area from northwest Mauritania to western Algeria and extended to Western Sahara and southern Morocco. This should allow ecological conditions to remain favourable for at least the next six months. Good rains also fell in

southwest Libya. Consequently, small-scale breeding is expected to occur during the forecast period, causing locust numbers to increase gradually in these areas.

Central Region. The situation remained calm during October. No locusts were present in the region except for a few scattered adults in the summer breeding areas of the interior in Sudan where seasonal rains had nearly ended and vegetation was drying out. Good rains began to fall in winter breeding areas along the Red Sea coast in Sudan, Eritrea and Yemen in early October that extended to Saudi Arabia at mid-month. This will cause ecological conditions to become favourable for small-scale breeding. Low numbers of adults from summer breeding areas are expected to appear along the coast and lay eggs that will start to hatch during the forecast period. Heavy rains associated with tropical cyclone Chapala are likely to result in favourable ecological conditions in southern coastal and interior areas of Yemen that could last well into next spring. In the Horn of Africa, above-average rains associated with a strong El Niño may fall during the winter and spring in northern Somalia where small-scale breeding is expected to commence during the forecast period.

Eastern Region. The situation remained calm during October. Only a few isolated adults persisted in the summer breeding areas of Pakistan near the border with India. 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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Twitter: twitter.com/faolocust



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Weather & Ecological Conditions in October 2015

Vegetation remained green in many of the summer breeding areas in the northern Sahel of West Africa. Unusually heavy rains in northern Mauritania and adjacent areas will allow conditions to remain favourable for up to six months. A tropical cyclone in the Arabian Sea was moving towards Yemen.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) moved south of the summer breeding areas in the Sahel during the first decade of October and remained so for the remainder of the month except in southeast Mauritania where it moved north to Nema during the second decade. Consequently, very little rain fell except in northeast Mali during the first decade and in parts of southeast Mauritania during the second decade. Vegetation started to dry out in a few places of central and southeast Mauritania and near Fada in northeast Chad but remained green on the Tamesna Plains and in parts of the Air Mountains in northern Niger, and elsewhere in southern Mauritania. Light rains fell in the Hoggar Mountains in southern Algeria and vegetation was green in runoff areas west of Tamanrasset. Good rains fell in southwest Libya near Ghat. Unusually heavy and widespread rains fell between 15 and 24 October throughout Tiris-Zemmour in northern Mauritania from Zouerate to Bir Moghreïn and Bir Amrane, extending into Inchiri, Western Sahara (Bir Gandouz to Tan-tan), southern Morocco and western Algeria (Tindouf to Beni Abbes). In many places, rains far exceeded the long-term annual mean. Bir Moghreïn normally receives about 15 mm in October and about 45 mm in a year; 152 mm was reported on 21-25 October. Similarly, Tindouf received 56 mm compared to 32 mm in a normal year and 2 mm in October. As a result, ecological conditions are likely to remain favourable for locust breeding and survival until at least next spring.

In the **Central Region**, the Inter-Tropical Convergence Zone (ITCZ) was located south of the summer breeding areas in Sudan and Eritrea during October. Nevertheless, light rains fell in southern areas of northern Kordofan. Good rains fell along the

western side of the Red Sea Hills between Derudeb and Haiya. During the first week of the month, rains commenced in winter breeding areas in northeast Sudan along Wadi Oko/Diib and in northern coastal areas. Light showers fell elsewhere on the coast south of Port Sudan, on the Egyptian coast south of Abu Ramad, and on the central and northern Eritrean coast. Light rains fell along parts of the Red Sea coastal plains in Yemen and in Saudi Arabia between Jizan and Jeddah, and on the northern coast near Umm Lajj. Ecological conditions were improving in many of these areas. Light rain also fell in parts of northern Oman and on the Somali plateau west of Las Anod, extending south to the Ogaden in eastern Ethiopia. At the end of the month, tropical cyclone Chalapa (04A) intensified over the Arabian Sea and moved towards southern Yemen.

In the **Eastern Region**, vegetation remained green in many parts of the summer breeding areas along both sides of the Indo-Pakistan border during October even though the southwest monsoon rains ended in September. Ecological conditions remained dry in the Lasbela area west of Karachi. Light rains fell in parts of the spring breeding areas in the Jaz Murian Basin in the interior of southeast Iran and near Turbat in southwest Pakistan.



Area Treated

No control operations were reported during October.



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During October, isolated immature and mature solitary adults were present in the southeast near Oualata (1717N/0701W), southeast of Nema (1636N/0715W), and north of Aioun El Atrous (1639N/0936W), in the centre north of Kiffa (1638N/1124W), near Tidjikja (1833N/1126W) and north of Magta Lahjar (1730N/1305W), and in the southwest between Boutilimit (1732N/1441W) and Rkiz (1658N/1514W). Some mature adults appeared in the northwest near Akjoujt (1945N/1421W) and Atar (2032N/1308W). Locust numbers remained low and densities were less than 200 adults/ha. Small-scale egg-laying commenced during the second week near Akjoujt and Aguilal Faye (1827N/1444W), giving rise

to scattered early instar solitary hoppers during the last week of the month.

- **FORECAST**

As vegetation dries out in the summer breeding areas, there remains a low risk that a few small groups could form. Small-scale breeding in the northwest will cause locust numbers to increase as hatching continues during November, and the first generation starts to fledge after mid-month. Scattered adults may be present in Tiris-Zemmour and small-scale breeding is likely in areas where unusually heavy rains fell in October.

Mali

- **SITUATION**

The hoppers and adults reported in the Kidal (1827N/0125E) region in early September were confirmed to be grasshoppers. No locusts were seen during a survey carried out in the southern Adrar des Iforas near Kidal and on the Tamesna plains east of Tin Essako (1826N/0229E) on 3-11 October.

- **FORECAST**

Low numbers of locusts may be present and breeding on a small-scale in parts of the Adrar des Iforas and Tamesna, and to a lesser extent in parts of Timetrine and the Tilemsi Valley. There remains a low to moderate risk that a few small groups will form once vegetation begins to dry out.

Niger

- **SITUATION**

During October, small-scale breeding occurred on the Tamesna plains near In Abangharit (1754N/0559E), west of Arlit (1843N/0721E), and from the Tazerzait Plateau (1832N/0449E) to the Algerian border. Low numbers of solitary hoppers, mainly third instar, were present in these areas mixed with isolated adults. Some of the adults were copulating and laying eggs. No surveys were carried out elsewhere in southern Tamesna or in central pasture areas.

- **FORECAST**

Small-scale breeding will continue in Tamesna, causing locust numbers to increase in November. Small-scale breeding may also be in progress in central areas between Tahoua and Termit Massif and in the Air Mountains. There is a moderate risk that a few small groups will form once vegetation begins to dry out.

Chad

- **SITUATION**

During October, isolated immature and mature solitary adults persisted in the northeast between Arada (1501N/2040E) and Fada (1714N/2132E). A

few adults were seen laying eggs at mid-month near Fada.

- **FORECAST**

Isolated adults are likely to persist in the few areas that remain green in the northeast. No significant developments are likely.

Senegal

- **SITUATION**

No reports were received during October.

- **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 October, an isolated fledgling was present west of Tamanrasset (2250N/0528E). Elsewhere, no locusts were seen during surveys carried out in the central Sahara near Adrar (2753N/0017W) and In Salah (2712N/0229E), and in the south near Tamanrasset 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 October, no locusts were seen near the coast from Guelmim (2859N/1003W) to north of Dakhla (2342N/1555W).

- **FORECAST**

Low numbers of adults are expected to appear and breed on a small scale in areas of recent rainfall in the Western Sahara.



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Libya

- **SITUATION**

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

- **FORECAST**

Isolated adults may appear and breed on a small scale in areas of recent rainfall in the southwest near Ghat.

Tunisia

- **SITUATION**

No surveys were carried out and no locusts were reported during September and October.

- **FORECAST**

No significant developments are likely.

CENTRAL REGION

Sudan

- **SITUATION**

During October, isolated immature adults were present in North Kordofan between Sodiri (1423N/2906E) and Abu Uruq (1554N/3027E), and mature adults were present at one location west of the Red Sea Hills between Berber (1801N/3400E) and Haiya (1820N/3621E).

- **FORECAST**

Locusts will decline in the summer breeding areas as vegetation dries out and adults move to the winter breeding areas and breed on a small scale in areas of recent rainfall along the Red Sea coast and in subcoastal areas.

Eritrea

- **SITUATION**

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

- **FORECAST**

Scattered adults are likely to appear in areas of recent rainfall and runoff on the Red Sea coastal plains between Sheib and Karora. Small-scale breeding will cause locust numbers to increase during the forecast period.

Ethiopia

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

Djibouti

- **SITUATION**

No reports were received during October.

- **FORECAST**

No significant developments are likely.

Somalia

- **SITUATION**

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

- **FORECAST**

Scattered adults are likely to appear on the northwest coastal plains and breed on a small scale in areas that receive rainfall.

Egypt

- **SITUATION**

During October, isolated immature and mature solitary adults were present near Lake Nasser in the Tushka (2247N/3126E) area. No locusts were seen during surveys in Garf Husein (2317N/3252E), Allaqi (2238N/3315E), El Sheikh El Shazly (2412N/3438E) areas, and on the Red Sea coast between Berenice (2359N/3524E) and the Sudan border.

- **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 in areas of recent rainfall.

Saudi Arabia

- **SITUATION**

No locusts were seen during surveys carried out in October along the Red Sea coastal plains near Jizan (1656N/4233E), Qunfidah (1909N/4107E) and Lith (2008N/4016E) as well as near Mecca (2125N/3949E).

- **FORECAST**

Scattered adults are likely to appear on the Red Sea coastal plains between Umm Lajj and Jizan, and breed on a small-scale in areas of recent rainfall.

Yemen

- **SITUATION**

During October, scattered immature and mature solitary adults were seen during a survey on the Red Sea coast near Al Zuhrah (1541N/4300E) and between Al Qutai (1454N/4312E) and Bayt Al Faqih (1430N/4317E).

- **FORECAST**

Scattered adults may be present and breeding on a small-scale in areas of recent rainfall on the Red

Sea and Gulf of Aden coasts. Favourable ecological conditions are expected to develop and persist for several months along the Mukalla coast and in adjacent interior areas as a result of heavy rains and flooding from tropical cyclone Chapala.

Oman

- SITUATION

No locusts were seen during surveys on the Musandam Peninsula, on the Batinah coast near Jamma (2333N/5733E), in the northern interior near Adam (2223N/5731E), and in the south near Thumrait (1736N/5401E) in October.

- 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) during October.

- FORECAST

No significant developments are likely.

Pakistan

- SITUATION

During the first half of October, isolated mature solitary adults persisted in a few places to the east of Rahimyar Khan (2822N/7020E) in the Cholistan and Khipro desert near the Indian border. No locusts were seen in the Las Bela area west of Karachi (2450N/6702E). No surveys were undertaken after mid-month.

- FORECAST

No significant developments are likely.

India

- SITUATION

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

- FORECAST

No significant developments are likely.

Afghanistan

- SITUATION

No reports received.

- FORECAST

No significant developments are likely.

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- **RFE.** Rainfall estimates every day, decade and month (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/index.html)
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- **El Niño.** Potential impacts on the Horn of Africa – Activities (Climate Change)
- **Current threats.** Unusually heavy rains in Northwest Africa; Yemen cyclone – Information (Current threats)
- **Desert Locust Alert.** Issued on 28 October – Archives (Briefs, 2015)
- **Cyclone Chapala.** Impact on Yemen – Archives (Threats, 2015)

Training videos. See the new links above for the eLocust3 and RAMSESv4 training videos on YouTube.

2015 events. The following activities are scheduled or planned:

- **CLCPRO.** Regional workshop on Desert Locust applied research in the Western Region, Tunis, Tunisia (23-27 November)
- **EMPRES/WR.** 14th Liaison Officers Meeting, Nouakchott, Mauritania (7-11 December)
- **EMPRES/WR.** 11th Steering Committee Meeting, Nouakchott, Mauritania (14-15 December)



Glossary of terms

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

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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

- July - September/October

WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July

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.

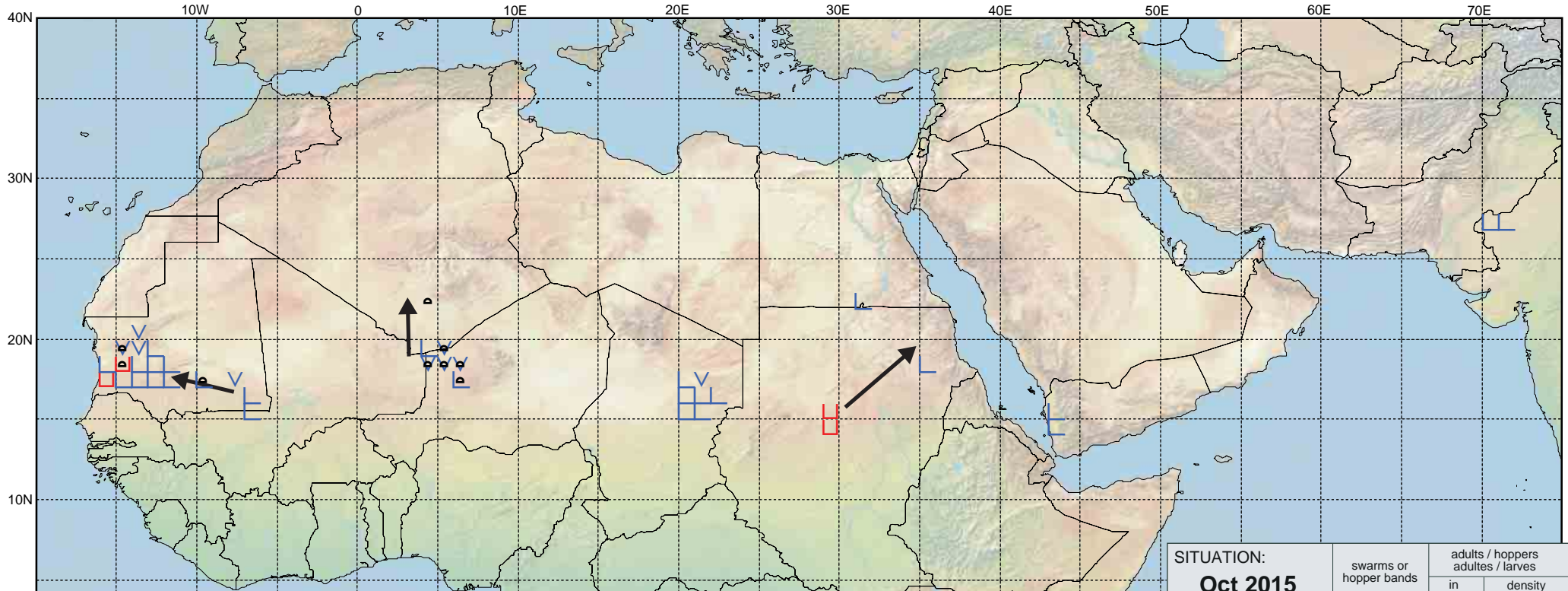


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Desert Locust Summary

Criquet pèlerin - Situation résumée



FORECAST TO: PREVISION AU:	15.12.15	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: Oct 2015 oct 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)			



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FAO warns that recent torrential rains and cyclones could favour locust surge

Strict vigilance required in northwest Africa, the Horn of Africa and Yemen



11 November 2015, Rome - Unusually heavy and widespread rains that fell recently in northwest Africa, the Horn of Africa and Yemen could favour Desert Locust breeding, FAO warned today, stressing that close monitoring is needed over the next six months to prevent the insects from forming destructive swarms.

The locust situation in countries normally affected by Desert Locust remained mostly calm in October with only small-scale breeding activity detected, FAO experts said. They noted however, that this could change, in part due to the impact of El Nino in Africa and the tropical cyclones Chapala and Megh in the Arabian Peninsula and the Horn of Africa.

Locusts can devastate crops and pastures.

"Extreme weather events, including torrential downpours, have the potential to trigger a massive surge in locust numbers. Rain provides moist soil for the insects to lay their eggs, which in turn need to absorb water, while rains also allow vegetation to grow which locusts need for food and shelter," said Keith Cressman, FAO Senior Locust Forecasting Officer.

"The effects of a locust plague can be devastating on crops and pastures and thus threaten food security and rural livelihoods," he added.

After becoming airborne, swarms of tens of millions of locusts can fly up to 150km a day with the wind. Female locusts can lay 300 eggs within their lifetime while a Desert Locust adult can consume roughly its own weight in fresh food per day -- about two grams every day. A very small swarm eats the same amount of food in one day as about 35,000 people.

The impact of El Nino and tropical cyclones Chapala and Megh

FAO has been monitoring the situation in northwest Africa where unusually heavy rains fell in late October over a widespread area of northern **Mauritania**, the adjacent areas of **Western Sahara**, southern **Morocco** and western **Algeria** and southwest **Libya**.

In the Horn of Africa, above-average rains associated with a very strong El Nino are predicted over northern **Somalia** during this winter and next spring. If so, ecological conditions will become favourable for breeding on the northwest coast and the Somali plateau.

Heavy rains associated with tropical cyclone Chapala fell in southern coastal and interior areas of **Yemen** in early November, followed one week later by tropical cyclone Megh that also affected northeastern Somalia. The torrential rains which far exceeded the annual average rainfall for the entire year caused flooding and damage.

In the winter breeding areas along both sides of the Red Sea, seasonal rains began in early October, which is slightly earlier than normal. If the rains continue, there would be sufficient time for two generations of breeding to occur this year in the coastal areas of **Sudan**, northern **Eritrea**, southeast **Egypt**, **Saudi Arabia** and **Yemen**

Climate change and locust prevention and control

Prevention, mainly through early warning and early reaction, is the key in reducing the extent to which Desert Locust can affect agricultural areas. After unusually heavy rainfall, it is imperative that countries mount the necessary field surveys and maintain them on a regular basis for routine monitoring of breeding conditions and locust infestations. The finding of significant infestations requires control operations to avoid a further escalation in locust numbers. It is critical that the results of survey and control operations are reported quickly and accurately so that swift decisions can be taken to prevent the spread of locusts to other countries.

While these measures are believed to have played an important role in the decline in the frequency and duration of plagues since the 1960s, today climate change is leading to more frequent, unpredictable and extreme weather and poses fresh challenges on how to monitor locust activity.

Related links

- [FAO Locust Watch](#)
- [Climate change and locusts](#)
- [Locust FAQs](#)

Contact

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Whereas locust numbers decrease during droughts, locust outbreaks often follow floods and cyclones. If not controlled, these outbreaks can lead to plagues. Temperature on the other hand governs the speed of locust development and warmer conditions could possibly shorten the incubation and maturation periods and lead to a rise in the number of locust generations in a year.

FAO's role

FAO operates a [Desert Locust Information Service](#) that receives data from locust-affected countries. This information is regularly analyzed together with weather and habitat data and satellite imagery in order to assess the current locust situation, provide forecasts up to six weeks in advance and if required issue warnings and alerts. FAO also provides training, undertakes field assessment missions and coordinates survey and control operations as well as assistance during locust emergencies.

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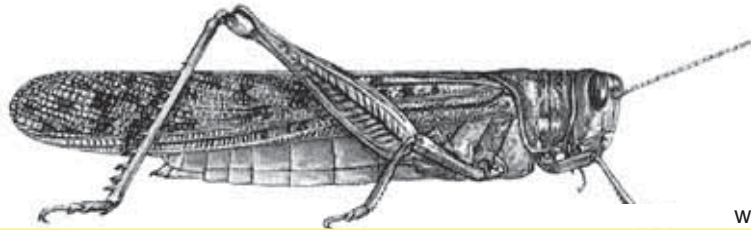
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warning level: **CAUTION**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



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**General Situation during November 2015
Forecast until mid-January 2016**

(4.12.2015)

An outbreak developed in early November in western Mauritania as a result of unusually good rains during September and October. Ground control operations are in progress against small hopper groups and bands. A second generation of breeding will commence in December and locust numbers could escalate further. Breeding is also expected in Western Sahara, northern Mauritania and perhaps in western Algeria. Small-scale breeding occurred in northern Niger and scattered adults were reported in northern Mali. Low numbers of adults appeared in winter areas along both sides of the Red Sea where small-scale breeding will occur during the forecast period. Two cyclones caused heavy rains and flooding in southern Yemen and parts of northeast Somalia. Small-scale breeding is likely in northwest Somalia. The situation remained calm in Southwest Asia.

Western Region. An outbreak developed in western Mauritania as a result of unusually good rains during September and October. Egg-laying commenced in mid-September, and hoppers formed groups in late October and started fledging in early November, giving rise to groups of immature adults, some of which had matured by the end of the month. A second generation of breeding is likely to cause locust numbers to escalate further with hatching from mid-December onwards, followed by the formation of hopper groups and bands. Ground control operations treated nearly 3,000 ha. During November, scattered

adults appeared in the **Western Sahara** and northern Mauritania where breeding will cause locust numbers to increase in areas that received good rains in October. A similar situation is likely to extend into western **Algeria**. Scattered adults were seen in northeast **Morocco**. In the northern Sahel, small-scale breeding occurred in the Air Mountains of **Niger** and scattered adults were reported in northern **Mali**.

Central Region. The situation remained calm during November. So far, only scattered solitary adults have been detected in a few places of the winter breeding areas along the Red Sea coast in **Sudan**, **Saudi Arabia** and **Yemen**. Small-scale breeding will cause locust numbers to increase in these countries as well as in northern **Eritrea** and perhaps southeast **Egypt**. Unusually heavy rains, associated with two cyclones, fell in coastal and interior areas of southern **Yemen** and in northeast **Somalia**. Breeding conditions in Yemen are likely to remain favourable for up to six months but surveys are nearly impossible due to insecurity. Scattered adults are likely to appear in these areas as well as on the northwest coast of Somalia and breed on a small scale.

Eastern Region. The situation remained calm during November. 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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DESERT LOCUST BULLETIN



Weather & Ecological Conditions in November 2015

Vegetation became green in Western Sahara and northern Mauritania from unusually heavy rains in September and October. Heavy rains fell in southern Yemen and parts of northern Somalia from two tropical cyclones. Vegetation was becoming green in winter breeding areas in the Central Region.

In the **Western Region**, very little rain fell during November except for a few light showers in northwest Mauritania and in parts of central Algeria. As a result of the unusually good rains during September and October, annual vegetation was becoming green in sizeable areas of Western Sahara and in parts of northern Mauritania (Bir Moghreïn, Tamreiket and northeast of Ghallaman), the northwest (Inchiri) and the west (between Moudjeria, Akjoujt and Aguilal Faye). Green vegetation was also present near Illizi, Algeria. Small, localized areas of green vegetation persisted in the summer breeding areas in southern Mauritania (east of Nema), northern Mali (Timetrine, Tilemsi Valley, Adrar des Iforas, Tamesna), northern Niger (Tazerzait Plateau, Air Mountains), and northeast Chad (southeast of Fada).

In the **Central Region**, heavy rains fell in coastal and interior areas of southern Yemen as well as parts of northeast Somalia, causing flooding. The rains were associated with two tropical cyclones, Chapala (28 October - 4 November) and Megh (4-10 November), that developed due to the warmest waters on record in the Arabian Sea. As a result, vegetation was becoming green in many wadis in the interior of Shabwah and Hadhramaut and along the Gulf of Aden coast where it may remain favourable for up to six months. In northern Somalia, heavy rains from Megh fell near Bosaso in the northeast. Vegetation was becoming green east of Bosaso, on the plateau between Erigavo and Hargeisa, and on the northwest coast. Above-average rains are expected in these areas in the coming months due to a strong El Niño. Only a few light showers fell in parts of the winter breeding areas along the Red Sea coast in Eritrea (Sheib, Mehimet), Yemen and near Jizan in Saudi Arabia. Heavier rains fell on the northern coast of

Saudi Arabia between Masturah and Duba. Ecological conditions were improving for breeding in these areas as well as in Sudan (Aiterba Plains, Tokar, Wadi Oko/Diib) and parts of southeast Egypt.

In the **Eastern Region**, light rain fell in the western portion of the Jaz Murian Basin in southeast Iran at times during November and annual vegetation was becoming green in a few localized places. Vegetation was also becoming green in the Shooli Valley south of Turbat in southwest Pakistan.



Area Treated

Mauritania 2,983 ha (Nov)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During November, locust numbers increased as breeding continued in the west between N'Beika (1758N/1215W), Aguilal Faye (1827N/1444W) and Akjoujt (1945N/1421W) where solitary and *transiens* hoppers of all instars formed groups and small bands up to 1 ha in size at densities of 1-6 hoppers/m². Fledging commenced early in the month and groups of immature solitary and *transiens* adults formed at densities up to 3,000 adults/ha. Other mature solitary adults from summer areas were present throughout the month. Breeding extended to Atar (2032N/1308W) where solitary hoppers and scattered mature adults were present. In the north, scattered mature solitary adults were seen near Zouerate (2244N/1221W) and Bir Moghreïn (2510N/1135W). In the southeast, scattered immature and mature solitary adults persisted northwest of Oualata (1717N/0701W). Ground teams treated 2,983 ha during November.

• FORECAST

An increasing number of adults will form groups and mature in the west and northwest where a second generation of breeding is likely to cause locust numbers to escalate further with hatching from mid-December onwards, followed by the formation of hopper groups and bands. Breeding will also occur in Tiris-Zemmour where unusually heavy rains fell in October, causing locust numbers to increase there as well.

Mali

• SITUATION

Scattered immature and mature solitary adults were reported on 14 November in a few wadis in the Adrar des Iforas near Tessalit (2011N/0102E).

• FORECAST

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

Niger

• SITUATION

During November, low numbers of solitary hoppers from small-scale breeding in October were present in the northern Air Mountains southwest of Iferouane (1905N/0824E) and in the southeast to the east of Timia (1809N/0846E) mixed with scattered immature solitary adults and a few mature adults, including one group of mature adults. Scattered immature solitary adults were also seen near Agadez (1658N/0759E).

• FORECAST

Low numbers of adults are expected to persist in parts of the Air Mountains. As vegetation dries out, a few small groups may form.

Chad

• SITUATION

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

• FORECAST

No significant developments are likely.

Senegal

• SITUATION

No reports were received during November.

• 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 November, isolated immature solitary adults were present in the extreme south near In Guezzam (1937N/0552E). No locusts were seen during surveys near Tamanrasset (2250N/0528E), Djanet (2434N/0930E), Illizi (2630N/0825E), In Salah (2712N/0229E) and Adrar (2753N/0017W).

• FORECAST

Scattered adults may appear in the west between Tindouf and Beni Abbas, 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 November, immature and mature solitary adults, at densities up to 100 adults/ha, appeared in the south between Aousserd (2233N/1419W) and Tichla (2137N/1453W) while isolated immature adults were seen in the northeast near Bouarfa (3232N/0159W). No locusts were seen between Zag (2800N/0920W) and Bir Lahlou (2619N/0933W).

• FORECAST

An increasing number of adults are expected to appear and breed in areas of recent rainfall in the Western Sahara that could give rise to hopper groups.

Libya

• SITUATION

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

• 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 November.

• FORECAST

No significant developments are likely.

CENTRAL REGION

Sudan

• SITUATION

During November, low numbers of mature solitary adults were present on the western side of the Red Sea Hills near Haiya (1820N/3621E) and on the Red Sea coast near Tokar Delta. No locusts were seen elsewhere along the coast, west of the Red Sea Hills or in Wadi Oko/Diib between Tomala (2002N/3551E) and Sufiya (2119N/3613E).



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• FORECAST

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

Eritrea

• SITUATION

No locusts were seen during surveys on the Red Sea coast between Sheib (1551N/3903E) and the Sudan border on 10-15 November.

• 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 locusts were seen during surveys in the eastern region near Dire Dawa (0935N/4150E) and Jijiga (0922N/4250E) during November.

• FORECAST

No significant developments are likely.

Djibouti

• SITUATION

No reports were received during November.

• FORECAST

No significant developments are likely.

Somalia

• SITUATION

No locusts were seen during surveys carried out on the northwest coast and escarpment between Berbera (1028N/4502E) and the Djibouti border on 19-21 November. No locusts were seen during a survey in the northeast between Gardo (0930N/4905E) and Las Koreh (1110N/4812E) in the last week of the month.

• 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 November, no locusts were seen during surveys near Lake Nasser in the Abu Simbel (2219N/3138E), 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 November, low numbers of immature solitary adults were present on the southern Red Sea coastal plains near Jizan (1656N/4233E). No locusts were seen elsewhere during surveys along the coast to Umm Lajj (2501N/3716E).

• FORECAST

Scattered adults will persist near Jizan and appear elsewhere on the Red Sea coastal plains as far north as Daba, and breed on a small-scale in areas of recent rainfall.

Yemen

• SITUATION

During November, scattered immature solitary adults, mixed with a few mature and copulating adults, were seen during surveys on the Red Sea coast near Al Zuhrah (1541N/4300E) and from north of Bajil (1458N/4314E) to nearly Zabid (1410N/4318E). Some areas on the northern coastal plains of the Red Sea and the Gulf of Aden coast could not be surveyed due to insecurity.

• 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 November.

• 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) during November.

• **FORECAST**

No significant developments are likely.

Pakistan

• **SITUATION**

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

• **FORECAST**

No significant developments are likely.

India

• **SITUATION**

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

• **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/ECLC Desert Locust Information Service (eclc@fao.org). Information received by the end of the month will be included in the FAO Desert Locust Bulletin for the current month; otherwise, it will not appear until the following month. Reports should be sent even if no locusts were found or if no surveys were conducted.

Locust tools and resources. FAO has developed a number of tools that National locust information officers and other interested individuals can use for Desert Locust early warning and management:

- **MODIS.** Vegetation imagery every 16 days (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/Regional/.MODIS/index.html)
- **MODIS.** Daily rainfall imagery in real time (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/index.html)
- **RFE.** Rainfall estimates every day, decade and month (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/index.html)
- **Greenness maps.** Dynamic maps of green vegetation evolution every decade (http://iridl.ldeo.columbia.edu/maproom/Food_Security/Locusts/Regional/greenness.html)
- **eLocust3 training videos.** A set of 15 introductory training videos are available on YouTube: <https://www.youtube.com/playlist?list=PLf7Fc-oGpFHEdv1jAPaF02TCfpcnYoFQT>
- **RAMSESv4 training videos.** A set of basic training videos are available on YouTube: <https://www.youtube.com/playlist?list=PLf7Fc-oGpFHGyzXqE22j8-mPDhhGNq5So>
- **RAMSESv4 and eLocust3 updates.** Updates can be downloaded from <https://sites.google.com/site/rv4elocust3updates/home>
- **FAOLOCUST Twitter.** The very latest updates are posted on Twitter (<http://www.twitter.com/faolocust>)
- **FAOLOcust Facebook.** A social means of information exchange using Facebook (<http://www.facebook.com/faolocust>)
- **Slideshare.** Locust presentations and photos available for viewing and download (<http://www.slideshare.net/faolocust>)
- **eLERT.** A dynamic and interactive online



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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:

- **Pesticide Referee Group follow-up.** Recommendations of the Stakeholder Workshop on the Procurement and Supply of Pesticide for Locust Control, Rome (2-3 September) – Publications (Reports by Topic, Miscellaneous)
- **Current threats.** Chapala and Megh cyclones – Information (Current threats)
- **Seasonal forecast.** Desert Locust winter/spring forecast (Dec 2015 – May 2016) – Information (Current threats)

Training videos. See the new links above for the eLocust3 and RAMSESV4 training videos on YouTube.

2015 events. The following activities are scheduled or planned:

- **EMPRES/WR.** 14th Liaison Officers Meeting, Nouakchott, Mauritania (7-11 December)
- **EMPRES/WR.** 11th Steering Committee Meeting, Nouakchott, Mauritania (14-15 December)



Glossary of terms

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

NON-GREGARIOUS ADULTS AND HOPPERS

ISOLATED (FEW)

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

SCATTERED (SOME, LOW NUMBERS)

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

GROUP

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

ADULT SWARM AND HOPPER BAND SIZES

VERY SMALL

- swarm: less than 1 km² • band: 1 - 25 m²

SMALL

- swarm: 1 - 10 km² • band: 25 - 2,500 m²

MEDIUM

- swarm: 10 - 100 km² • band: 2,500 m² - 10 ha

LARGE

- swarm: 100 - 500 km² • band: 10 - 50 ha

VERY LARGE

- swarm: 500+ km² • band: 50+ ha

RAINFALL

LIGHT

- 1 - 20 mm of rainfall.

MODERATE

- 21 - 50 mm of rainfall.

HEAVY

- more than 50 mm of rainfall.

OTHER REPORTING TERMS

BREEDING

- the process of reproduction from copulation to fledging.

SUMMER RAINS AND BREEDING

- July - September/October

WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July

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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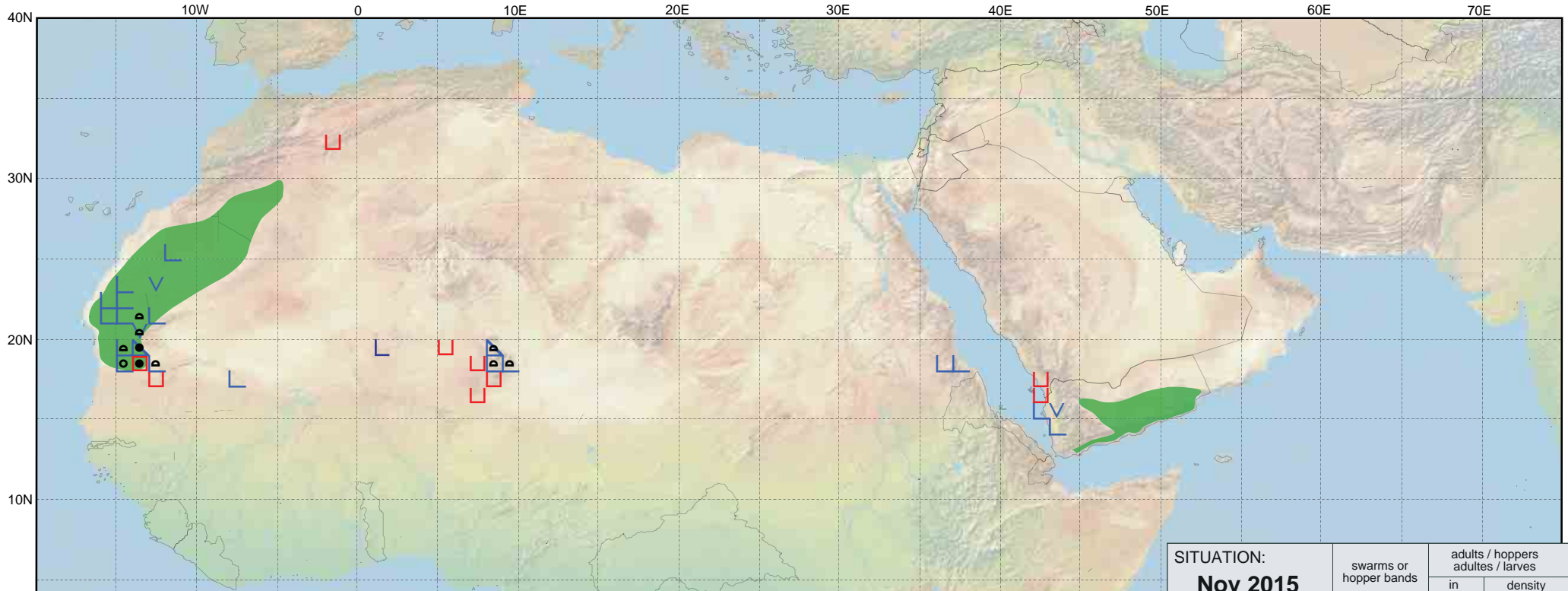
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Desert Locust Summary

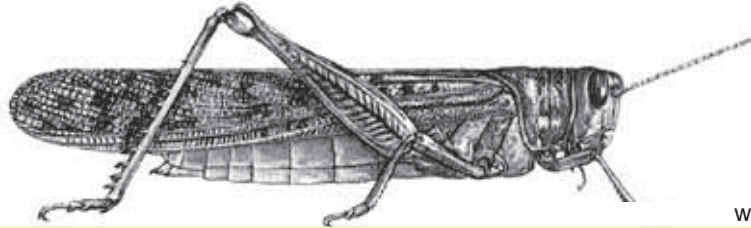
Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU:	15.01.16	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: Nov 2015 nov 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)			



warning level: **CAUTION**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



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**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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DESERT LOCUST BULLETIN

(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/ECLo Desert Locust Information Service (ecllo@fao.org). Information received by the end of the month will be included in the FAO Desert Locust Bulletin for the current month; otherwise, it will not appear until the following month. Reports should be sent even if no locusts were found or if no surveys were conducted.

Locust tools and resources. FAO has developed a number of tools that National locust information officers and other interested individuals can use for Desert Locust early warning and management:

- **MODIS.** Vegetation imagery every 16 days (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/.Regional/.MODIS/index.html)
- **MODIS.** Daily rainfall imagery in real time (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/index.html)
- **RFE.** Rainfall estimates every day, decade and month (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/index.html)
- **Greenness maps.** Dynamic maps of green vegetation evolution every decade (http://iridl.ldeo.columbia.edu/maproom/Food_Security/Locusts/Regional/greenness.html)
- **eLocust3 training videos.** A set of 15 introductory training videos are available on YouTube: <https://www.youtube.com/playlist?list=PLf7Fc-oGpFHEdv1jAPaF02TCfpcnYoFQT>
- **RAMSEsv4 training videos.** A set of basic training videos are available on YouTube: <https://www.youtube.com/playlist?list=PLf7Fc-oGpFHGyzXqE22j8-mPDhhGNq5So>
- **RAMSEsv4 and eLocust3 updates.** Updates can be downloaded from <https://sites.google.com/site/rv4elocust3updates/home>
- **FAOLOLUST 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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DESERT LOCUST BULLETIN



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.



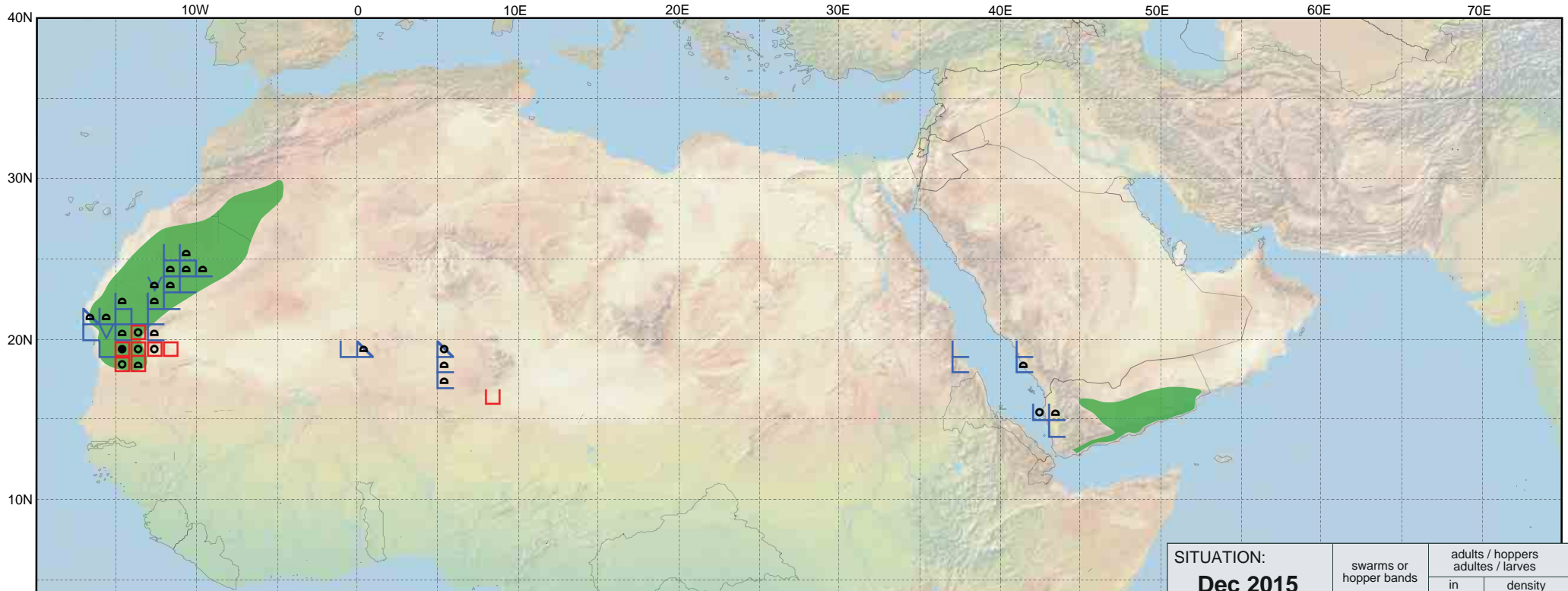
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DESERT LOCUST BULLETIN



Desert Locust Summary

Criquet pèlerin - Situation résumée



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)			