

warning level: **THREAT**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 424



**General Situation during January 2014
Forecast until mid-March 2014**

(3 Feb 2014)

The Desert Locust situation remained serious along both sides of the Red Sea during January where breeding continued in Eritrea, Yemen, Saudi Arabia and, to a lesser extent, in Sudan, causing hopper bands and swarms to form. Although control operations continued in all countries, more hopper bands and swarms are likely to form during February and March. There is a risk that groups and small swarms could move into spring breeding areas of the interior of Saudi Arabia. A few groups and small swarms invaded Djibouti from northwest Somalia, and may move into Ethiopia. Elsewhere, small infestations were treated in Mauritania, Niger and Algeria. During the forecast period, small-scale breeding may occur in northwest and northern Mauritania, and scattered adults are likely to appear in the spring breeding areas of Northwest Africa and South-West Asia.

Western Region. The situation remained calm during January. Limited control operations were carried out in northwest Mauritania against an immature swarm and an immature adult group early in the month, and against adult groups in the Ténéré Desert in Niger. In Northwest Africa, a group of mature adults was treated in irrigated crops in the central Sahara in Algeria. During the forecast period, low numbers of adults will persist and may breed on a small scale in northwest and northern Mauritania and in adjacent areas of Western Sahara. From March onwards, low numbers of adults are likely to appear in the spring breeding areas south of the Atlas Mountains

in Morocco and Algeria as well as in southwest Libya and breed on a small scale occur once temperatures increase and rains fall.

Central Region. Locust infestations continued to increase in January for the third consecutive month along both sides of the Red Sea. The situation was most serious in Eritrea and Yemen where another generation of breeding occurred, causing more hopper bands to form as well as swarms in Eritrea. Both countries were facing pesticide shortages. Aerial and ground control operations continued against hopper bands and swarms in Saudi Arabia and Sudan. Some of the swarms were laying eggs. During the forecast period, more hopper bands and swarms could form, mainly in Eritrea and Yemen but also in parts of Saudi Arabia and Sudan. Adult groups and a few small swarms could move into the spring breeding areas of the interior of Saudi Arabia. In the Horn of Africa, small adult groups and swarms from adjacent areas of northwest Somalia invaded Djibouti and dispersed throughout the country. There is a risk that groups and a few small swarms could move to eastern Ethiopia.

Eastern Region. No locusts were reported and the situation remained calm in January. During the forecast period, low numbers of adults are likely to appear in coastal areas of southeast Iran and southwest Pakistan and breed on a small scale in areas of recent rainfall.

The FAO Desert Locust Bulletin is issued every month by the Desert Locust Information Service, AGP Division (Rome, Italy). It is supplemented by Alerts and Updates during periods of increased Desert Locust activity. All products are distributed by e-mail and are available on the Internet.

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

Facsimile: +39 06 570 55271

E-mail: eclo@fao.org

Internet: www.fao.org/ag/locusts

Facebook: www.facebook.com/faolocust

Twitter: twitter.com/faolocust



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Weather & Ecological Conditions in January 2014

Only limited rain fell during January in the winter breeding areas along both sides of the Red Sea. Nevertheless, ecological conditions remained favourable for breeding in some areas. Conditions were also favourable in parts of northwest and northern Mauritania, and rain fell in parts of the spring breeding area in southeast Iran and southwest Pakistan.

In the **Western Region**, very little rain fell during January. In Algeria, light rain fell at times in the northern part of the Sahara where vegetation was starting to become green in a few areas. In southwest Libya, green vegetation was present in a few wadis northwest of Ghat near the Algerian border. In Mauritania, ecological conditions remained favourable for breeding in parts of the northwest and north. Dry conditions prevailed in the northern Sahel of West Africa.

In the **Central Region**, only limited rainfall occurred at times along both sides of the Red Sea during January. Light rain fell on the Red Sea coastal plains in Saudi Arabia between Jeddah and Jizan, in parts of the Tihama coast in Yemen, and along the southern coast in Sudan. Light to moderate showers fell at mid-month along parts of the Gulf of Aden coastal plains in Yemen. Ecological conditions remained favourable for breeding in these areas as well as along the coast of Eritrea but were drying out in northeast Sudan and remained dry in southeast Egypt. In the Horn of Africa, ecological conditions remained favourable for breeding along the coast in northwest Somalia between Bulhar and Silil but were dry in Djibouti and eastern Ethiopia. Good rains fell in the eastern part of the spring breeding areas in the interior of Saudi Arabia where adult groups and perhaps a few small swarms could appear in March.

In the **Eastern Region**, light rains fell at times during January in parts of the spring breeding areas in southeast Iran and southwest Pakistan. However, more rainfall will be needed before ecological conditions become favourable for breeding.



Area Treated

Control operations declined in January, treating about 51,000 ha compared to 93,000 ha in December.

Algeria	20 ha (January)
Eritrea	16,545 ha (January)
Mauritania	300 ha (January)
Niger	541 ha (January)
Saudi Arabia	23,676 ha (January)
Sudan	9,475 ha (1-25 January)
Yemen	678 ha (January)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During January, a 2 km² immature swarm was treated near the *Parc National du Banc d'Arguin* in the northwest on the 1st and a 100 ha group of immature adults at a density of 10,000 adults/ha were treated on the 10th. During the remainder of the month, locust infestations continued to decline and, by the end of the month, only scattered adults persisted near the coast from north of Nouakchott (1809N/1558W) to Tasiast (2034N/1531W) where they were maturing. In the north, scattered immature and mature solitarious adults were present near Zouerate (2244N/1221W) and Bir Moghreïn (2510N/1135W).

• FORECAST

Small-scale breeding may take place in the northwest and north, causing locust numbers to increase slightly.

Mali

• SITUATION

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

• FORECAST

Low numbers of locusts are likely to be present and will persist in parts of the Adrar des Iforas.

Niger

• SITUATION

During January, solitarious hoppers mixed with immature and mature solitarious and *transiens* adults persisted in the Ténéré Desert northwest of Fachi (1806N/1134E). Adults formed a few small groups and some adults were copulating. By mid-month, hoppers had reached fifth instar and adult densities were nearly 4,000 adults/ha. Ground teams treated 541 ha.

- **FORECAST**

Scattered adults are likely to move from the Ténéré to the southeastern Air Mountains where they will persist during the forecast period.

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**

During January, a group of mature adults were seen copulating in irrigated cropping areas near Adrar (2753N/0017W). Ground teams treated 20 ha.

- **FORECAST**

Scattered adults may persist and breed on a small scale in irrigated areas near Adrar. Low numbers of adults may appear near Tindouf, Bechar and Illizi where small-scale breeding may occur once temperatures increase.

Morocco

- **SITUATION**

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

- **FORECAST**

Scattered adults are likely to appear in southern parts of the Western Sahara and breed on a small scale in areas where conditions are favourable.

Libya

- **SITUATION**

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

- **FORECAST**

Low numbers of adults are likely to appear in the southwest near Ghat 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 January, breeding continued on the Red Sea coast. In the Tokar Delta, mainly groups of immature and mature adults mixed with a few late instar hoppers were present. Some of the adults were laying eggs. Hatching occurred at mid-month on the coast south of Tokar (1827N/3741E) to the Eritrean border where a few swarms arrived from Eritrea and laid eggs in late December and early January. Numerous small patches of first and second instar gregarious hoppers were forming near Aqiq (1813N/3811E) and Aiterba (1753N/3819E). Scattered mature solitary adults were present north of Tokar to Port Sudan (1938N/3713E), and a 4 km² swarm laid eggs between Port Sudan and Eit (2009N/3706E) on the 22nd. In the northeast subcoastal areas, late instar hopper bands and immature adult groups were present in Wadi Oko/Diib north of Tomala (2002N/3551E). A few small immature swarms formed during the third week. From 1 to 25 January, control operations treated 8,675 ha of which 3,305 ha were by air.

In the summer breeding areas, ground teams treated 800 ha of immature adult in the Nile Valley near Shendi (1641N/3322E) and Abu Hamed (1932N/3320E).

- **FORECAST**

Further hatching on the southern coast will cause locust numbers to increase. Hoppers will form small bands that will fledge from mid-February onwards, and new adults will form groups and perhaps a few small swarms. Small-scale breeding may occur north of Port Sudan. Unless more rains fall, further breeding is not expected in the Tokar Delta or Wadi Oko/Diib. There is a moderate risk that adult groups and a few swarms may appear on the southern coastal plains from Eritrea.



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Eritrea

• SITUATION

During January, a third generation of breeding commenced on the Red Sea coastal plains. Small adult groups and swarms laid eggs that hatched and hoppers were forming early instar groups and bands in the north near Mehimet (1723N/3833E) and the Sudanese border, in central areas, and south of Massawa (1537N/3928E) to Ghelaelo (1507N/4004E). Ground control operations treated 16,545 ha in January.

• FORECAST

Locust numbers are expected to increase further on the Red Sea coast as hatching and hopper band formation continue. New adult groups and small swarms could start to form by the end of February and during March.

Ethiopia

• SITUATION

During January, scattered mature gregarious adults mixed with a few solitarious adults were seen near Ayasha (1045N/4234E) and the border of northern Somalia.

• FORECAST

Locust adults, including a few groups and perhaps a few small swarms may appear between Dire Dawa and the Djibouti and Somali borders early in the forecast period and move into the Harar Highlands. Small-scale breeding could occur in areas that receive rainfall.

Djibouti

• SITUATION

On 26 January, at least one mature swarm reportedly arrived in the southeast from adjacent areas in northwest Somalia near Ali Sabieh (1109N/4242E) in W. Beyadde. On the 28th, a swarm was seen west of the capital near Arta (1132N/4251E). On the 30th, there were reports in the south in W. Harrou (1105N/4223E) near Dikhil (1106N/4222E) and the Gobad Valley near the Ethiopian border as well as from the Day Mountains and the Tadjourah (1147N/4253E) area in the north.

• FORECAST

Small adult groups and perhaps a few small swarms may continue to appear from northwest Somalia early in the forecast period and disperse throughout the

country. Unless further rains fall, significant breeding is unlikely.

Somalia

• SITUATION

During January, there were unconfirmed reports from locals of late instar hopper bands, and groups of immature and mature adults on the northwest coastal plains between Lughaye (1041N/4356E) and Siliil (1058N/4326E).

• FORECAST

Hoppers and adults are likely to be present in some coastal, escarpment and plateau areas as far east as Las Koreh. If so, small groups, bands and a few small swarms could form as vegetation dries out. Unless further rains fall, significant breeding is unlikely.

Egypt

• SITUATION

No locusts were seen in January during surveys carried out on the Red Sea coast and in subcoastal areas between Berenice (2359N/3524E) and the Sudan border, along both sides of Lake Nasser in the Allaqi, Garf Husein (2317N/3252E), Tushka (2247N/3126E) and Abu Simbel (2219N/3138E) areas, near Aswan (2405N/3256E), and in the northwest near Siwa (2912N/2531E) and Salum (3131N/2509E).

• FORECAST

Scattered adults may be present on the Red Sea coast between Shalatyn and the Sudanese border. No significant developments are likely.

Saudi Arabia

• SITUATION

During January, second generation breeding continued along the Red Sea coastal plains between Lith (2008N/4016E) and Jizan (1656N/4233E) where hopper groups and bands were present. Adults were maturing and forming groups between Lith and Qunfidah (1909N/4107E) but remained in low numbers and scattered south of Qunfidah. Egg-laying was in progress in both areas. A few immature and mature swarms formed and moved north along the coast between Taif (2115N/4021E) and Rabigh (2247N/3901E). No locusts were seen in the interior between Khaybar (2542N/3917E) and Hail (2731N/4141E). Control operations treated 23,676 ha, mainly near Qunfidah, of which 1,800 ha were by air.

• FORECAST

Second-generation breeding, mainly between Lith and Jizan but possibly extending north to Yenbo, will cause locust numbers to continue to increase as groups, bands and small swarms form. Groups and perhaps a few small swarms could appear in the spring breeding areas of the interior by the end of the forecast period.

Yemen

• SITUATION

During January, a limited second-generation hatching occurred on the northern Red Sea coast, causing small hopper bands to form in a few places between Al Zuhrah (1541N/4300E) and Midi (1619N/4248E). Surveys recommenced after mid-month and found more than 150 bands, at densities up to 200 hoppers/m² and up to one hectare in size. Some hoppers had reached third instar by the 18th. Scattered immature and mature solitary and *transiens* adults were also present in a few wadis. Ground teams treated 678 ha but control operations were limited due to beekeepers. On the Gulf of Aden coastal plains, low numbers of immature and mature adults and one hopper band were reported at mid-month near Am Rijja (1302N/4434E).

• FORECAST

Locust numbers may increase further on the northern Red Sea coast as second-generation hatching continues, causing small hopper groups and bands to form. Fledging will commence in mid-February, and the new adults will form groups and perhaps a few small swarms. Locust numbers will also increase on the Gulf of Aden coast west of Aden from a second generation of breeding, giving rise to hopper groups and small bands.

Oman

• SITUATION

No locusts were seen during surveys carried out in January on the Musandam Peninsula, the Batinah coast near Jamma (2333N/5733E), and in the northern interior between Nizwa (2255N/5731E) and Adam (2223N/5731E) except for an isolated fledgling on the northern edge of the Wahiba Sands southeast of Ibra (2243N/5831E).

• FORECAST

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Lebanon, Palestine, Qatar, Syria, Tanzania, Turkey, Uganda and UAE

• FORECAST

No significant developments are likely.

EASTERN REGION

Iran

• SITUATION

No locusts were seen during surveys carried out on the southeastern coastal plains near Jask (2540N/5746E) and Chabahar (2517N/6036E) in January.

• FORECAST

Low numbers of adults are likely to appear along the southeast coast and breed on a small scale in areas of recent rainfall.

Pakistan

• SITUATION

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

• FORECAST

Low numbers of adults are likely to appear along the Baluchistan coast and breed on a small scale in areas of recent rainfall.

India

• SITUATION

During January, no locusts were seen during surveys carried out in Rajasthan and Gujarat.

• 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



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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.Ideo.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)
- **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>)
- **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>)

Greenness maps. Dynamic maps of green vegetation evolution every decade can now be downloaded from Columbia University's IRI (USA)

website: http://iridl.Ideo.columbia.edu/maproom/Food_Security/Locusts/Regional/greenness.html

2014 events. The following activities are scheduled or planned:

- **DLCC.** Desert Locust Control Financing System meeting, FAO Rome (11-13 March)
- **CLCPRO/CRC/SWAC.** Inter-regional Locust Information Officers workshop, Agadir, Morocco (19-23 May tbc)



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.

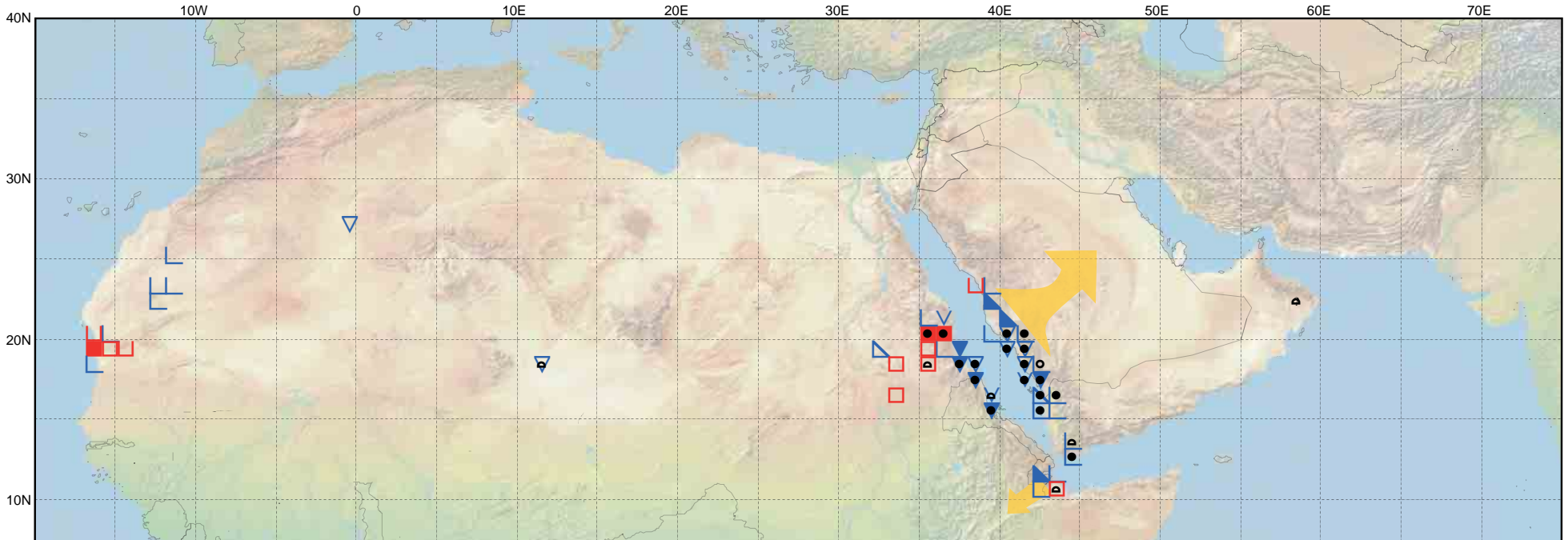


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Desert Locust Summary

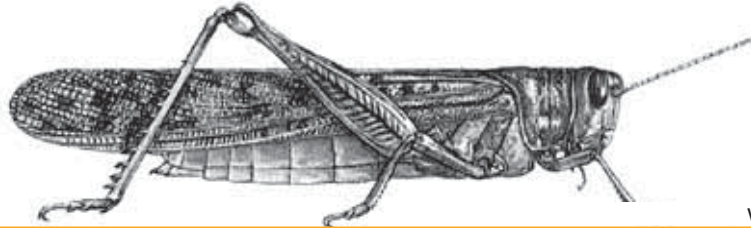
Criquet pèlerin - Situation résumée



FORECAST TO: PREVISION AU: 15.03.14	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 2014 jan 2014	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: **THREAT**

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**General Situation during February 2014
Forecast until mid-April 2014**

(3 Mar 2014)

The Desert Locust situation remained serious along both sides of the Red Sea during February as outbreaks continued in Eritrea, Yemen, Saudi Arabia and, to a lesser extent, in Sudan and northern Somalia, where hopper bands, groups and swarms formed. Although locust infestations should decline in the winter breeding areas due to control operations and drying conditions, there is a risk that adult groups and small swarms will form and move into spring breeding areas of the interior in Saudi Arabia, northern Sudan, and perhaps parts of northern Somalia and eastern Ethiopia. Small to moderate scale breeding is likely in those areas that receive rainfall. In Northwest Africa, low numbers of adults are expected to appear south of the Atlas Mountains and breed on a small scale. A similar situation is also likely in southeast Iran and western Pakistan, causing locust numbers to increase slightly.

Western Region. The situation remained calm during February. Only scattered adults were present in parts of northern Mauritania and in the Air Mountains in Niger. 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 as well as in southwest Libya and breed on a small scale in areas that receive rainfall. No significant developments are expected.

Central Region. The situation remained critical during February as outbreaks continued and important infestations persisted in the winter breeding areas of Sudan, Eritrea, Saudi Arabia, Yemen and northern Somalia. Additional breeding caused more hopper bands to form in all countries. At least one swarm formed in northeast Sudan and a few swarms moved from the Red Sea coastal plains in Saudi Arabia and Yemen to the nearby mountains. One swarm may have crossed the Red Sea from Eritrea to Yemen. Aerial and ground control operations were undertaken in Saudi Arabia and Sudan, including the Nile Valley, while ground operations were carried out in Yemen and Eritrea. Limited control operations were mounted in northwest Somalia using biopesticides. A limited number of groups and small swarms could form during the forecast period and move from the coastal plains to the interior of Saudi Arabia, Sudan, and perhaps to the plateau in northern Somalia and adjacent areas of eastern Ethiopia. Breeding will occur in these areas if rains fall.

Eastern Region. No locusts were reported and the situation remained calm in February. During the forecast period, low numbers of adults are likely to appear in coastal areas of southeast Iran and southwest Pakistan and breed on a small scale in areas of recent rainfall.

The FAO Desert Locust Bulletin is issued every month by the Desert Locust Information Service, AGP Division (Rome, Italy). It is supplemented by Alerts and Updates during periods of increased Desert Locust activity. All products are distributed by e-mail and are available on the Internet.

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

Facsimile: +39 06 570 55271

E-mail: eclo@fao.org

Internet: www.fao.org/ag/locusts

Facebook: www.facebook.com/faolocust

Twitter: twitter.com/faolocust



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DESERT LOCUST BULLETIN



Weather & Ecological Conditions in February 2014

Very little fell during February, causing vegetation to start to dry out in parts of the winter breeding areas along both sides of the Red Sea. Conditions were improving in the spring breeding areas of Northwest Africa, the interior of Saudi Arabia and in Southwest Asia as a result of light showers.

In the **Western Region**, no significant rain fell during February. In northern Mauritania, conditions were favourable for locust survival and small-scale breeding near Bir Moghreïn where light rain fell but vegetation was drying out further south near Zouerate. In Morocco, small areas of green vegetation persisted in the Western Sahara near Guelta Zemmur and Aousserd, and ecological conditions improved slightly south of the Atlas Mountains in the Ziz-Ghris Valley. In Algeria, ecological conditions were improving for breeding in the northwestern Sahara between Beni Abbes and Ain Sefra while conditions remained favourable near irrigated areas in the central Sahara near Adrar. Elsewhere, dry conditions prevailed.

In the **Central Region**, light rain fell at times in parts of the winter breeding areas along both sides of the Red Sea during February. In Yemen, light to moderate rain fell on the coastal plains of the Red Sea and Gulf of Aden during the first two decades of February. Vegetation remained green on the northern Red Sea coastal plains but started to dry out in a few places at the end of the month. In Saudi Arabia, ecological conditions remained favourable for breeding on the Red Sea coastal plains from Al Wajh to Jizan. Conditions were improving in the spring breeding areas of the interior near Gassim, and light to moderate showers fell between Hail and Al Jawf. In Sudan, vegetation was drying out along the Red Sea coastal plains as well as in subcoastal areas of the northeast. In southern Egypt, ecological conditions were favourable in a few places on the Red Sea coast and in subcoastal areas between Berenice and the Sudanese border. Vegetation remained green along both sides of Lake Nasser in the Garf Hussein and Abu Simbel areas.



Area Treated

Control operations in February treated nearly the same amount of area as January operations.

Eritrea	5,380 ha (February)
Saudi Arabia	37,283 ha (February)
Somalia	76 ha (25-26 February)
Sudan	11,381 ha (January, revised) 4,166 ha (February)
Yemen	3,150 ha (1-16 February)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During February, a few scattered immature and mature solitarious adults were present in the north between Bir Moghreïn (2510N/1135W) and Tamreiket (2518N/1102W), and to a lesser extent near Zouerate (2244N/1221W).

• FORECAST

Low numbers of adults will persist in parts of Tiris Zemmour where small-scale breeding could occur in some places, causing locust numbers to increase slightly.

Mali

• SITUATION

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

• FORECAST

Low numbers of locusts are likely to be present and will persist in parts of the Adrar des Iforas.

Niger

• SITUATION

During February, isolated mature solitarious and *transiens* adults were present at a few places in the Air Mountains south of Iferouane (1905N/0824E) as well as on the western edge of the mountains between Agadez (1658N/0759E) and Arlit (1843N/0721E).

• **FORECAST**

Scattered adults are likely to persist in a few places in the Air Mountains where small-scale breeding could occur in areas that receive rainfall or runoff.

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 near Tindouf (2741N/0811W), Beni Abbes (3011N/0214W), Ain Sefra (3245N/0035W), Adrar (2753N/0017W) and Tamanrasset (2250N/0528E).

• **FORECAST**

Scattered adults may appear and breed on a small scale south of the Atlas Mountains between Beni Abbes and Ain Sefra, in the west near Tindouf, in central Sahara irrigated areas near Adrar, and in the east near Illizi and Djanet.

Morocco

• **SITUATION**

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

• **FORECAST**

Low numbers of adults may be present in parts of the Western Sahara and breed on a small-scale in areas that receive rainfall. Scattered adults are likely to appear south of the Atlas Mountains in the Draa and Ziz-Ghris valleys where small-scale breed will cause locust numbers to increase slightly.

Libya

• **SITUATION**

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

• **FORECAST**

Low numbers of adults are likely to appear in the southwest near Ghat 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 February, breeding continued on the central Red Sea coast where egg-laying, hatching and band formation occurred north of Port Sudan in Khor Arbaat (1946N/3710E), and hopper bands persisted on the southern coast near Adobana (1810N/3816E). In both areas, some hoppers had reached fifth instar by the end of the month. Low numbers of solitary and gregarious adults persisted in the Tokar Delta. In the northeast, fifth instar hopper bands fledged and immature adults formed small groups in Wadi Oko/Diib north of Tomala (2002N/3551E). A 500 ha immature swarm was seen on the 21st and adult groups were laying eggs in a few places. Control operations treated 1,816 ha of which 900 ha were by air in February.

In the Nile Valley, dense groups of egg-laying gregarious adults were present in irrigated wheat schemes near Abu Hamed (1932N/3320E) during the second week of February. Low numbers of scattered mature adults were present near Merowe and Dongola. Control operations treated 2,350 ha of which 2,075 ha were by air.

• **FORECAST**

Breeding will decline on the Red Sea coast except for some limited hatching in Wadi Oko/Diib where small hopper groups may form. Groups and a few small swarms may form in areas of previous breeding on the central and southern coastal plains and move towards the Nile Valley, perhaps supplemented by adult groups and a few swarms from Eritrea. Locust numbers are likely to increase in the Nile Valley where hatching will cause hoppers to form groups and perhaps a few small bands near irrigated areas.



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DESERT LOCUST BULLETIN

Eritrea

• SITUATION

During February, egg-laying by adult groups, hatching, hopper band formation and fledging were in progress on the coast south of Massawa between Inghel (1528N/3953E) and Tio (1441N/4057E). New hatching and band formation occurred on the northern coast near Embere (1628N/3856E). Control operations treated 5,380 ha in February.

• FORECAST

Locust numbers are expected to increase further on the Red Sea coast south of Massawa as hatching and hopper band formation continue. New adult groups and small swarms could form in March.

Ethiopia

• SITUATION

During February, isolated mature gregarious adults were seen in a few places near Ayasha (1045N/4234E) and the border of northern Somalia.

• FORECAST

Locust adults, including a few groups and perhaps a few small swarms may appear between Dire Dawa and the Djibouti and Somali borders and move into the Harar Highlands. Small-scale breeding could occur in areas that receive rainfall.

Djibouti

• SITUATION

In early February, scattered mature gregarious adults were reported in the south near As Ela (1100N/4206E) and the Ethiopian border, and groups were seen in the north on the coast between Tadjourah (1147N/4253E) and Obock (1157N/4317E) at Orobar (1154N/4308E). On the 12th, scattered mature adults were seen on the eastern coast near the border of northern Somalia.

• FORECAST

Small adult groups and perhaps a few small swarms may continue to appear from northwest Somalia and disperse throughout the country. Unless further rains fall, significant breeding is unlikely.

Somalia

• SITUATION

In early February, small late instar hopper groups and bands mixed with scattered immature and mature gregarious adults were present on the northwest

coast between Lughaye (1041N/4356E) and Sillil (1058N/4326E). Hatching was in progress and first instar hopper bands were forming. An adult group was seen laying eggs near Lughaye on the 9th. A few small hopper bands mixed with immature and mature gregarious adults were present on the escarpment north of Burao (0931N/4533E). Ground control teams treated 76 ha using biopesticides on 25-26 February.

• FORECAST

Hopper and adult groups as well as small bands and perhaps a few small swarms are likely to form on the northwest coast in March. There is a risk that the adults may move to the plateau where they could disperse between Boroma and Burao, mature and lay eggs in areas that receive rainfall.

Egypt

• SITUATION

No locusts were seen in February during surveys carried out on the Red Sea coast and in subcoastal areas between Berenice (2359N/3524E) and the Sudan border, along both sides of Lake Nasser in the Allaqi, Garf Husein (2317N/3252E), and Abu Simbel (2219N/3138E) areas.

• FORECAST

Scattered adults may be present on the Red Sea coast between Shalatyn and the Sudanese border where limited breeding could occur in areas that remain favourable. No significant developments are likely.

Saudi Arabia

• SITUATION

During February, new hatching occurred on the Red Sea coastal plains between Lith (2008N/4016E) and Jizan (1656N/4233E) mainly during the first half of the month, followed by hatching on the northern coast near Yenbo (2405N/3802E) late in the month. Consequently, hopper groups and bands of all instars mixed with fledglings and groups of immature and mature adults were present south of Lith while a few first and second instar bands were present near Yenbo and Bader (2346N/3847E). Groups of mature adults were also present on the northern coast between Bader and Al Wajh (2615N/3627E), and some of these were laying eggs near Umm Lajj (2501N/3716E). A few mature swarms formed and were reported in the Asir Mountains near Taif (2115N/4021E) and near Al Wajh. Control operations treated 37,283 ha, mainly near Qunfidah, of which 6,650 ha were by air.

• FORECAST

An increasing number of adult groups and small swarms are expected to form on the Red Sea coast as hopper groups and bands fledge during March. There is a moderate to high risk that some of the adult groups and small swarms will remain while others

will move to the spring breeding areas of the interior, mature and lay eggs in areas that receive rainfall, causing locust numbers to increase as hatching and band formation occurs.

Yemen

• SITUATION

During the first half of February, numerous small third to fifth instar hopper bands at densities up to 500 hoppers/m² were present on the northern Red Sea coast between Al Zuhrah (1541N/4300E) and Suq Abs (1600N/4312E). After mid-month, the bands decreased due to control operations. Hoppers that were not treated fledged and formed groups of immature adults that matured during the remainder of the month. Scattered solitairous hoppers and adults were also present in the same area. On the 12th, a small immature swarm reportedly arrived on the coast at Port Al Luhayyah (1542N/4241E). On the 19th, a small mature swarm was seen east of Suq Abs. On the following day, an immature swarm was seen in the highlands south of Taiz (1335N/4401E). Numerous adults were reported in the highlands between Ibb (1358N/4411E) and Sana'a during the second half of the month. Ground teams treated 3,150 ha from 1 to 16 February. On the southern coast, scattered immature and mature solitairous adults were present west of Aden (1250N/4503E) at the end of the month.

• FORECAST

Adults will continue to form groups and small swarms on the northern Red Sea coast. Some of the populations may persist, mature and lay eggs again in areas that remain favourable while others could move north along the coastal plains of the Red Sea or into the highlands and eventually reach the spring breeding areas of the interior. Small groups may form on the southern coastal plains near Aden.

Oman

• SITUATION

During February, isolated immature solitairous adults were seen at one place on the Batinah coast west of Muscat (2337N/5833E). No locusts were seen during surveys carried out on the Musandam Peninsula and near Nizwa (2255N/5731E) in the Dakhiliya region of the northern interior.

• FORECAST

Low numbers of adults may appear in coastal and interior areas of the north and breed on a small scale in areas that receive rainfall.

Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Lebanon, Palestine, Qatar, Syria, Tanzania, Turkey, Uganda and UAE

• FORECAST

No significant developments are likely.

EASTERN REGION

Iran

• SITUATION

During February, no locusts were seen during surveys carried out on the southeastern coastal plains near Jask (2540N/5746E) and in the interior near Ghale Ganj (2731N/5752E) and Bampur (2711N/6028E).

• FORECAST

Low numbers of adults are likely to appear along the southeast coast and breed on a small scale in areas of recent rainfall.

Pakistan

• SITUATION

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

• FORECAST

Low numbers of adults are likely to appear along the Baluchistan coast and breed on a small scale in areas of recent rainfall.

India

• SITUATION

During February, no locusts were seen during surveys carried out in Rajasthan and Gujarat.

• 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.



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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.Ideo.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)
- **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>)
- **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
- **Current threats updates.** Information

Greenness maps. Dynamic maps of green vegetation evolution every decade can now be downloaded from Columbia University's IRI (USA) website: http://iridl.Ideo.columbia.edu/maproom/Food_Security/Locusts/Regional/greenness.html

2014 events. The following activities are scheduled or planned:

- **DLCC.** Desert Locust Control Financing System meeting, FAO Rome (11-13 March)
- **CLCPRO/CRC/SWAC.** Inter-regional Locust Information Officers workshop, Agadir, Morocco (19-23 May)
- **CLCPRO.** 9th Executive Committee meeting and 7th Session of the Commission, Nouakchott, Mauritania (22-26 June)
- **CRC.** 29th Session of the Commission, UAE (November)
- **SWAC.** 29th Session (50th anniversary) of the Commission, Tehran, Iran (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

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.

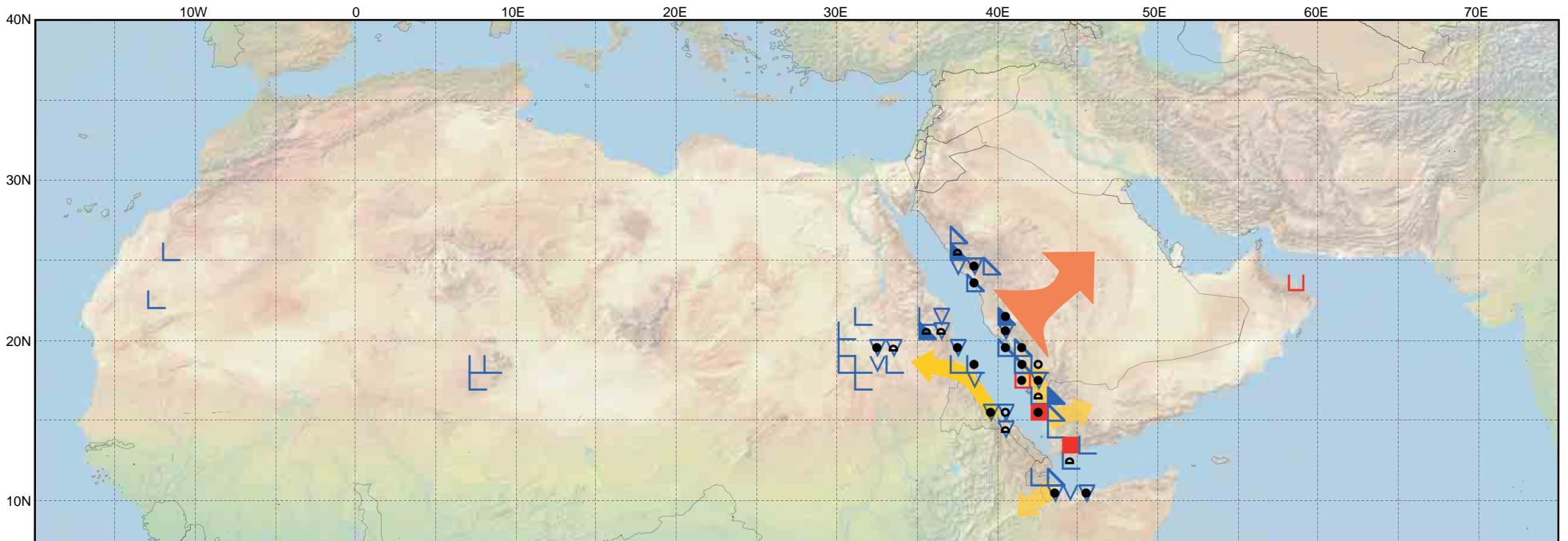


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Desert Locust Summary

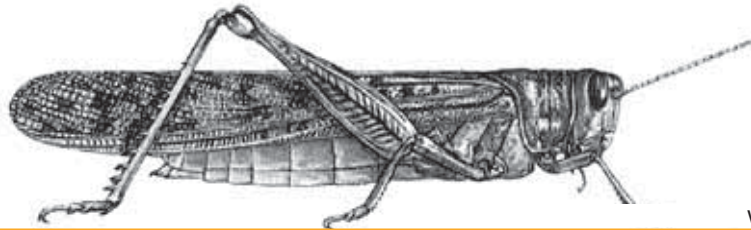
Criquet pèlerin - Situation résumée



FORECAST TO: PREVISION AU:	LIKELY PROBABLE	POSSIBLE POSSIBLE
15.04.14		
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 2014 fév 2014	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: **THREAT**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



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**General Situation during March 2014
Forecast until mid-May 2014**

(2 Apr 2014)

The Desert Locust situation improved during March along both sides of the Red Sea due to control operations and drying conditions. Nevertheless, there remains a risk that adult groups and perhaps a few small swarms may move into the spring breeding areas in the interior of Saudi Arabia and Yemen where one generation of breeding is possible. Local breeding occurred in northern Oman where it is expected to continue. A few hopper bands formed in irrigated areas along the Nile Valley in northern Sudan. Several swarms formed on the northwest coast of Somalia and moved into eastern Ethiopia where breeding is likely to occur in areas of recent rainfall. Elsewhere, small-scale breeding is likely to occur during the forecast period in the spring breeding areas of Northwest Africa and Southwest Asia, causing locust numbers to increase slightly.

Western Region. The situation remained calm during March. Ground teams treated a few small hopper groups near irrigated agricultural schemes in the central Sahara of **Algeria**. No locusts were reported elsewhere 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** as well as in southwest **Libya** and breed on a small scale in areas that receive rainfall. No significant developments are expected.

Central Region. Locust infestations declined in winter breeding areas along both sides of the Red Sea due to control operations and drying conditions. Aerial and ground control operations were undertaken in **Saudi Arabia** (23,277 ha) and **Sudan** (4,669 ha) while limited ground control operations were carried out in **Eritrea** (160 ha) and **Yemen** (4 ha). Numerous hopper bands persisted on the central coast of Saudi Arabia and egg-laying occurred on the northern coast. During the forecast period, adult groups and perhaps a few small swarms are likely to appear in the interior of Saudi Arabia and lay eggs in favourable areas that will cause locust numbers to increase as hatching and band formation occurs. Locust numbers are also likely to increase in the Nile Valley in northern **Sudan** and, to a lesser extent, in northern **Oman**. In the Horn of Africa, several swarms moved from the northwest coast of **Somalia** to eastern **Ethiopia** where they are expected to mature and lay eggs that could start to hatch by the end of April. Limited aerial and ground control operations were carried out in Ethiopia.

Eastern Region. The situation remained calm in March. Local breeding occurred at one place in the interior of southeast **Iran**. During the forecast period, low numbers of adults are likely to appear in coastal and interior areas of southeast Iran and southwest **Pakistan** and breed on a small scale in areas of recent rainfall.

The FAO Desert Locust Bulletin is issued every month by the Desert Locust Information Service, AGP Division (Rome, Italy). It is supplemented by Alerts and Updates during periods of increased Desert Locust activity. All products are distributed by e-mail and are available on the Internet.

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

Facsimile: +39 06 570 55271

E-mail: eclo@fao.org

Internet: www.fao.org/ag/locusts

Facebook: www.facebook.com/faolocust

Twitter: twitter.com/faolocust



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Weather & Ecological Conditions in March 2014

Vegetation continued to dry out in winter breeding areas along the Red Sea coasts. Good rains fell in parts of the spring breeding areas in Northwest Africa, the interior of the Arabian Peninsula, the Horn of Africa, and Southwest Asia.

In the **Western Region**, rain fell at times during March in parts of the spring breeding areas of Northwest Africa. In Algeria, moderate rains fell over the northwestern Sahara near Naama and El Bayadh. Ecological conditions remained unfavourable in the spring breeding areas except in parts of Bechar and Naama and near irrigated agricultural schemes in Adrar. In Morocco, dry conditions prevailed south of the Atlas Mountains except for a few green patches in the Ziz-Ghris Valley. In Libya, dry conditions prevailed on the Al Hamada Al Hamra plateau in the west while green vegetation was present along the border with Tunisia between Ghadames and Nalut. Dry conditions prevailed in the northern Sahel of West Africa.

In the **Central Region**, good rains fell at times during March in the spring breeding areas in the interior of the Arabian Peninsula and the Horn of Africa. In Egypt, moderate to heavy rains fell on the northern Red Sea coast between Marsa Alam and Hurgada, extending to Baris in the Western Desert on 8-9 March. Vegetation remained mainly dry on the Red Sea coast between Berenice and Halaib. In Saudi Arabia, light to moderate rains fell along the northern Red Sea coast to the north of Yenbo, extending into the interior to Al Jawf and Hail. Consequently, breeding conditions should remain favourable along the northern coast and improve in the northern interior. In Yemen, moderate to heavy rains fell at mid-month and at the end of the month in parts of the spring and summer breeding areas in the interior between Ataq and Bayhan, and north of Wadi Hadhramaut and west of Thamud. Vegetation was drying out on the Red Sea coast in the absence of significant rainfall, and ecological conditions remained favourable only in a few places mainly near irrigated areas. Strong northerly and northeasterly winds occurred over the Arabian Peninsula on 26-28 March. Good rains fell at times in the northern interior of Oman and breeding

conditions were favourable. In the Horn of Africa, light to moderate rain fell in eastern Ethiopia between Dire Dawa and the Ogaden where breeding conditions are expected to improve. Although light showers fell at times on the plateau in northwestern Somalia, vegetation remained mainly dry, and vegetation dried out on the northwest coast.

In the **Eastern Region**, light to moderate rains fell at times in parts of the spring breeding areas in southeast Iran. During the second decade of March, good rains fell in the Jaz Murian Basin and at the end of the month along the coast. Consequently, ecological conditions are expected to improve and become favourable for breeding.



Area Treated

Control operations declined in March, treating less than 28,000 ha compared to 50,000 ha in February.

Algeria	1 ha (March)
Eritrea	160 ha (March)
Ethiopia	190 ha (March)
Oman	4 ha (March)
Saudi Arabia	23,277 ha (1-27 March)
Sudan	4,669 ha (1-23 March)
Yemen	4 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

No significant developments are likely.

Mali

• SITUATION

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

• FORECAST

Low numbers of locusts are likely to be present and will persist in parts of the Adrar des Iforas.

Niger

• SITUATION

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

- **FORECAST**

Scattered adults are likely to persist in a few places in the Air Mountains and the eastern Tamesna where small-scale breeding could occur in areas that receive rainfall or runoff.

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, ground teams treated 1 ha of hopper groups in irrigated areas near Adrar (2753N/0017W). No locusts were seen during surveys carried out near Tindouf (2741N/0811W), from south of Beni Abbes (3011N/0214W) to Naama (3316N/0018W), and near In Salah (2712N/0229E) and Tamanrasset (2250N/0528E).

- **FORECAST**

Scattered adults are likely to appear and breed on a small scale south of the Atlas Mountains between Beni Abbes and Ain Sefra, in the west near Tindouf, in central Sahara irrigated areas near Adrar, and in the east near Illizi and Djanet.

Morocco

- **SITUATION**

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

- **FORECAST**

Low numbers of adults may be present in parts of the Western Sahara and breed on a small-scale in areas that receive rainfall. Scattered adults are likely to appear south of the Atlas Mountains in the Draa and Ziz-Ghris valleys where small-scale breed will cause locust numbers to increase slightly.

Libya

- **SITUATION**

No locusts were seen in March during surveys

carried out in the west on the Al Hamada Al Hamra plateau, and along the Tunisian border between Ghadames (3010N/0930E) and Nalut (3152N/1058E).

- **FORECAST**

Low numbers of adults are likely to appear in the southwest near Ghat 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, aerial (3,424 ha) and ground (795 ha) control operations continued in the northeast against groups of hoppers and immature and mature adults along Wadi Oko/Diib between Tomala (2002N/3551E) and Sufiya (2119N/3613E). Adult groups laid eggs during the first half of the month in W. Diib. A few scattered mature solitary adults were seen west of W. Diib as well as on the central coast and in Tokar Delta. On the southern coast, only scattered gregarious adults were maturing near Adobana (1810N/3816E) and Karora (1745N/3820E).

In the Nile Valley, breeding occurred in irrigated schemes southwest of Abu Hamed (1932N/3320E) where hopper bands formed, and a few scattered mature solitary adults and at least one adult group were present. Ground teams treated 450 ha.

- **FORECAST**

Limited hatching may occur early in the forecast period in Wadi Diib; otherwise infestations in the northeast and on the Red Sea coast will decline as vegetation dries out. Locust numbers are likely to increase in the Nile Valley between Abu Hamed and Dongola as adults and perhaps a few small groups appear from winter breeding areas and lay eggs near irrigated schemes.

Eritrea

- **SITUATION**

During March, mid to late-instar hopper groups continued to develop south of Massawa on the



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Ghelaelo Peninsula between Inghel (1528N/3953E) and Ghelaelo (1507N/4004E) where scattered immature and mature adults were also present. New hatching was reported at the end of the month. Control operations treated 160 ha in March. Elsewhere, mature adults were seen west of Mersa Fatma (1454N/4018E).

- **FORECAST**

Locust numbers should decline on the coast south of Massawa due to control operations and drying conditions.

Ethiopia

- **SITUATION**

During March, a medium-sized immature swarm appeared on the 11th and 13th in the east between Jijiga (0922N/4250E) and Chinhahsan (0930N/4242E) from adjacent areas of the plateau in northwest Somalia. During the last week of the month, scattered gregarious adults and small immature swarms arrived at several places between Dire Dawa (0935N/4150E) and Ayasha (1045N/4234E) as well as near Jijiga. Ground and aerial control operations treated 190 ha during March.

- **FORECAST**

Small swarms are likely to continue to appear during early April in the Jijiga area and disperse between Jijiga, Harar, Dire Dawa and Ayasha where they will mature and lay in areas of recent rainfall. Hatching and band formation could commence by the end of April.

Djibouti

- **SITUATION**

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

- **FORECAST**

There is a low risk that a few adult groups and perhaps a few small swarms may pass through the southeast from northwest Somalia to eastern Ethiopia early in the forecast period.

Somalia

- **SITUATION**

During March, hopper bands and groups of immature gregarious adults were present in the first week on the northwest coast between Gerisa

(1036N/4325E) and Lughaye (1041N/4356E). As vegetation dried out, immature swarms formed and moved up the escarpment and across the plateau between Boroma (0956N/4313E) and Hargeisa (0931N/4402E) and, to a lesser extent, Burao (0931N/4533E). From the 11th onwards, several swarms were seen near Boroma and crossing the border at Togochale (0936N/4320E) to eastern Ethiopia. Sightings increased during the last week of the month mainly near Boroma. On the 28th, an immature swarm flew over Hargeisa. At the end of the month, there was an unconfirmed report of mature gregarious adults laying eggs and hatching on the northwest coast between Gerisa and Lughaye.

- **FORECAST**

Several swarms are likely to continue to appear on the plateau in early April. Most of the swarms will cross to eastern Ethiopia but a few may persist if vegetation becomes green from recent rains between Boroma and Burao. If conditions are favourable, adults will mature and lay eggs that will hatch, leading to the formation of small hopper bands in May.

Egypt

- **SITUATION**

No locusts were seen in March during surveys carried out on the Red Sea coast and in subcoastal areas between Berenice (2359N/3524E) and the Sudan border, near Hurgada, along both sides of Lake Nasser in the Allaqi, Garf Husein (2317N/3252E), Abu Simbel (2219N/3138E) and Tushka (2247N/3126E) areas.

- **FORECAST**

No significant developments are likely.

Saudi Arabia

- **SITUATION**

During March, hopper bands of all instar were present on the central Red Sea coast between Lith (2008N/4016E) and Qunfidah (1909N/4107E), in the Asir Mountains between Mecca (2125N/3949E) and Taif (2115N/4021E), and on the northern Red Sea coast between Yenbo (2405N/3802E) and Al Wajh (2615N/3627E). Adult groups laid eggs on the north coast and interior from Umm Lajj (2501N/3716E) to east of Tabuk (2823N/3635E). On the central coast, groups of adults were maturing between Lith and Qunfidah and in the Asir Mountains south of Abha (1813N/4230E). Control operations treated 23,277 ha, mainly near Qunfidah, of which 4,200 ha were by air, on 1-27 March. No locusts were seen in the interior spring breeding areas near Al Jawf (2948N/3952E), between Khaybar (2542N/3917E) and Gassim (2621N/4358E), north of Bisha (2000N/4236E), and near Najran (1729N/4408E).

- **FORECAST**

Locust infestations are expected to decline on the Red Sea coastal plains except in the north where additional hatching and hopper group and band formation may occur. There is a moderate to high risk that adult groups and perhaps a few small swarms will appear in the interior and lay eggs in favourable areas that will cause locust numbers to increase as hatching and band formation occurs.

Yemen

- **SITUATION**

During March, locust infestations declined on the Red Sea coast and only low numbers of immature and mature solitarious and *transiens* adults persisted between Al Zuhrah (1541N/4300E) and Midi (1619N/4248E). A few late instar solitarious hoppers, fledglings and copulating adults were seen southwest of Suq Abs (1600N/4312E) in the first week. Ground teams treated 4 ha. Immature adults were present on the central coast south of Hodeidah (1450N/4258E). There were unconfirmed reports of individual locusts seen in the highlands, including Sana'a (1521N/4412E). On the southern coast, a few late instar solitarious hoppers and fledglings mixed with scattered adults were present northwest of Aden near Am Rija (1302N/4434E). Scattered immature and mature solitarious adults were also seen near Lahij (1303N/4453E) and Zinjibar (1306N/4523E).

- **FORECAST**

Low numbers of adults are likely to persist in a few places along the northern coastal plains of the Red Sea and on the Gulf of Aden coast near Aden. Scattered adults and perhaps a few small groups may appear in the spring breeding areas of the interior and lay eggs in areas of recent rainfall that will hatch during the forecast period, causing locust numbers to increase slightly.

Oman

- **SITUATION**

During March, small-scale breeding occurred in the northern interior near Ibri (2314N/5630E) and south of Buraimi (2415N/5547E) where second to fifth instar solitarious hoppers and immature adults were present in a few places. Ground teams treated 4 ha. There were unconfirmed reports of locusts between Adam (2223N/5731E) and Sinaw (2230N/5802E). No locusts were seen on the Musandam Peninsula.

- **FORECAST**

Additional breeding is likely to occur on a small scale in areas of recent rainfall in the northern interior, causing locust numbers to increase and perhaps form a few small groups.

Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Lebanon, Palestine, Qatar, Syria, Tanzania, Turkey, Uganda and UAE

- **FORECAST**

No significant developments are likely.

EASTERN REGION

Iran

- **SITUATION**

During March, isolated mature solitarious adults were seen at one place along the coast east of Chabahar (2517N/6036E) on the 3rd. No locusts were seen elsewhere near Chabahar and Jask (2540N/5746E). Scattered mature solitarious adults were seen laying eggs in the Jaz Murian Basin near Ghale Ganj (2731N/5752E) at mid-month.

- **FORECAST**

Low numbers of adults are likely to appear along the southeast coast and breed on a small scale in areas of recent rainfall. Limited hatching is likely to commence in Jaz Murian in early April.

Pakistan

- **SITUATION**

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

- **FORECAST**

Low numbers of adults are likely to appear along the Baluchistan coast and breed on a small scale in areas of recent rainfall.

India

- **SITUATION**

During March, no locusts were seen during surveys carried out in Rajasthan and Gujarat.

- **FORECAST**

No significant developments are likely.

Afghanistan

- **SITUATION**

No reports received.

- **FORECAST**

No significant developments are likely.



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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 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.Ideo.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)
- **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>)

- **FAOLOLCUST Twitter.** The very latest updates are posted on Twitter (<http://www.twitter.com/faolocust>)
- **FAOLocust Facebook.** A social means of information exchange using Facebook (<http://www.facebook.com/faolocust>)
- **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
- **Current threats updates.** Information

eLocust3. New introductory training videos are now available in three languages:

- **eLocust3 in the field** (http://www.youtube.com/watch?v=JX5-b5u_nlc)
- **eLocust3 antenna** (http://www.youtube.com/watch?v=qk9_pIF12s0)
- **eLocust3 charging** (<http://www.youtube.com/watch?v=KoubKeCMIYQ>)

2014 events. The following activities are scheduled or planned:

- **CLCPRO/CRC/SWAC.** Inter-regional Locust Information Officers workshop, Agadir, Morocco (19-23 May)
- **CRC.** 1st Sub-regional workshop on maintaining Desert Locust sprayers for non-frontline countries, Ismailia, Egypt (25-28 May)
- **CLCPRO.** 9th Executive Committee meeting and 7th Session of the Commission, Nouakchott, Mauritania (22-26 June)
- **CRC.** 29th Session of the Commission, UAE (November)
- **SWAC.** 29th Session (50th anniversary) of the Commission, Tehran, Iran (15-18 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

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.

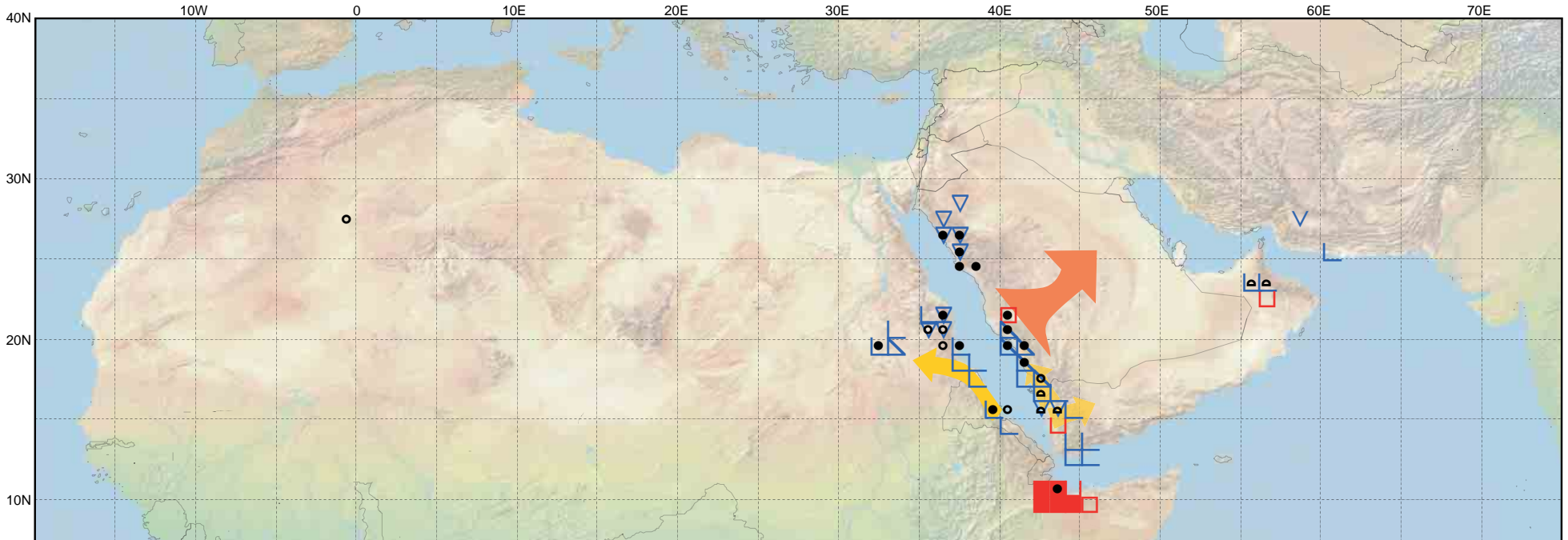


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Desert Locust Summary

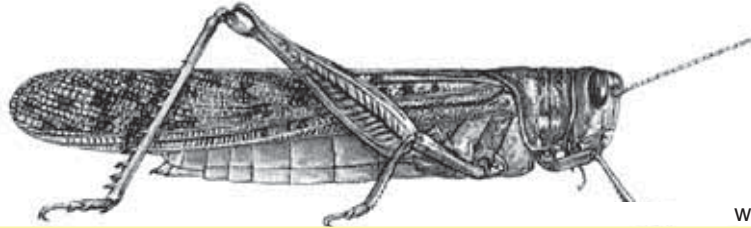
Criquet pèlerin - Situation résumée



FORECAST TO: PREVISION AU:	LIKELY PROBABLE	POSSIBLE POSSIBLE
15.05.14		
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 2014 mar 2014	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**

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FAO Emergency Centre for Locust Operations



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**General Situation during April 2014
Forecast until mid-June 2014**

(5 May 2014)

The Desert Locust situation continued to improve during April along both sides of the Red Sea due to control operations and drying conditions in Sudan, Eritrea and Saudi Arabia. Adult groups moved into the interior of Saudi Arabia where one generation of breeding is expected. Several swarms moved from northwest Somalia into eastern Ethiopia where, despite aerial and ground control operations, breeding is likely to occur and hopper bands could form during the forecast period. Smaller-scale breeding occurred in northern Oman and southeast Iran, causing small hopper groups to form. Unusually dry conditions prevailed in Northwest Africa.

Western Region. The situation remained calm during April. No significant rain fell in the spring breeding areas south of the Atlas Mountains in Northwest Africa. Consequently, ecological conditions remained unfavourable and only isolated solitary adults were seen in northeast Morocco. Dry conditions prevailed in the northern Sahel of West Africa. No significant developments are expected.

Central Region. Locust infestations continued to decline in winter breeding areas along both sides of the Red Sea due to control operations and drying conditions. Aerial and ground control operations were carried out in Saudi Arabia, and adult groups moved into the spring breeding areas of the interior where

they laid eggs. In northeast Sudan, adults formed groups and a few small swarms that were treated by ground teams. Control operations finished in Yemen and Eritrea. In Yemen, small-scale breeding may occur in the interior, causing locust numbers to increase slightly. Numerous swarms moved from northwest Somalia to eastern Ethiopia where aerial and ground control operations were undertaken, and hatching and the formation of hopper groups and bands are expected in May. Small-scale breeding is in progress and is likely to continue in northern Oman where small hopper groups formed. As vegetation dries out, locusts may form more small groups.

Eastern Region. The situation remained calm in April. Small-scale breeding was in progress in coastal and interior areas of southeast Iran and limited control operations were undertaken. During the forecast period, hatching will cause locust numbers to increase slightly. As vegetation dries out, small groups may form. Although locusts were not seen in adjacent areas of western Pakistan, small-scale breeding may occur in May.

The FAO Desert Locust Bulletin is issued every month by the Desert Locust Information Service, AGP Division (Rome, Italy). It is supplemented by Alerts and Updates during periods of increased Desert Locust activity. All products are distributed by e-mail and are available on the Internet.

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

Facsimile: +39 06 570 55271

E-mail: eclo@fao.org

Internet: www.fao.org/ag/locusts

Facebook: www.facebook.com/faolocust

Twitter: twitter.com/faolocust



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Weather & Ecological Conditions in April 2014

Vegetation continued to dry out in winter breeding areas along the Red Sea coasts. Good rains fell in parts of the spring breeding areas in the interior of the Arabian Peninsula, the Horn of Africa, and Southwest Asia. Early rains fell in the summer breeding areas in eastern Sudan and along the Indo-Pakistan border.

In the **Western Region**, no significant rain fell in the spring breeding areas of Northwest Africa during April. In Algeria, only light rains fell near Bechar. Consequently, vegetation was drying out and ecological conditions were not favourable for breeding except near Bechar and In Salah, and near irrigated areas in the Adrar area. Temperatures increased in the south where it remained dry. In Morocco, small areas of green vegetation persisted in the Ziz-Ghris Valley and in the northeast. Dry conditions prevailed in the northern Sahel of West Africa.

In the **Central Region**, vegetation continued to dry out and temperatures increased in the winter breeding areas along both sides of the Red Sea and on the northwest coast of Somalia during April. In Eritrea, small areas of green vegetation persisted on the southern coast between Ghelaelo and Tio. Good rains fell over parts of the plateau in northwest Somalia and eastern Ethiopia during the first decade of April, causing ecological conditions to become favourable for breeding primarily in Ethiopia between Ayasha and Jijiga and, to a lesser extent, in parts of northwest Somalia. In Yemen, moderate rains fell early in the month in the interior spring breeding areas of Hadhramaut, Shabwah, Marib and Al Jawf. In Saudi Arabia, light rains may have fallen at times in the interior spring breeding areas during the second half of the month. In Oman, good rains fell early in the month in parts of the northwest where ecological conditions were favourable for breeding. In eastern Sudan, heavy rains fell in summer breeding areas on the western side of the Red Sea Hills between Derudeb and Sinkat.

In the **Eastern Region**, scattered showers fell in parts of the spring breeding areas during April.

In southeast Iran, good rains fell during the second decade in the Suran-Saravan valleys, and light rain fell in parts of the Jaz Murian Basin. In western Pakistan, good rains fell in central areas of Baluchistan during the second decade. Ecological conditions remained favourable in southeast Iran from March rains and became favourable for small-scale breeding in western Pakistan during April. Pre-monsoon rains fell in summer breeding areas along both sides of the Indo-Pakistan border during the last two decades of April. Consequently, ecological conditions could improve to allow early breeding.



Area Treated

Control operations in April treated nearly the same as in March.

Eritrea	105 ha (April)
Ethiopia	2,370 ha (April)
Iran	600 ha (April)
Oman	130 ha (April)
Saudi Arabia	19,994 ha (April)
Sudan	3,620 ha (1-16 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 locusts may be present and could persist in parts of the Adrar des Iforas.

Niger

• SITUATION

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

• FORECAST

Low numbers of locusts may be present and could persist in a few places in the Air Mountains.

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 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 near Bechar (3135N/0217W), Adrar (2753N/0017W), and In Salah (2712N/0229E) in April.

• FORECAST

Unless further rains fall in the spring breeding areas, no significant developments are likely.

Morocco

• SITUATION

During April, isolated mature solitary adults were present in the northeast near Bouarfa (3232N/0159W) and a few immature adults were seen in Guelmim (2859N/1003W).

• FORECAST

Unless further rains fall in the spring breeding areas, no significant developments are likely.

Libya

• SITUATION

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

• FORECAST

Unless further rains fall in the spring breeding areas, no significant developments are likely.

Tunisia

• SITUATION

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

• FORECAST

No significant developments are likely.

CENTRAL REGION

Sudan

• SITUATION

During the first half of April, hopper groups and a few small immature adult groups and swarms formed in Wadi Oko/Diib between Tomala (2002N/3551E) and Sufiya (2119N/3613E). Ground teams treated 3,620 ha. Isolated mature solitary adults persisted in the Tokar Delta. No locusts were seen elsewhere on the coast.

• FORECAST

Locust numbers will decline in the northeast but are likely to increase in the Nile Valley between Abu Hamed and Dongola as adults and small groups appear from the northeast and breed near irrigated schemes. Hatching is expected and hopper groups and small bands may form.

Eritrea

• SITUATION

During April, locust infestations declined along the Red Sea coast. Control operations finished in the Ghelaelo (1507N/4004E) area on the 14th but continued against third and fourth instar gregarious hoppers and immature gregarious adults near Tio (1441N/4057E). Ground teams treated 105 ha during the month.

• FORECAST

No significant developments are likely.

Ethiopia

• SITUATION

During April, numerous immature swarms, varying in size from 1 to 20 km², arrived primarily in Awbere (0947N/4311E) district from northwest Somalia. As the swarms were highly mobile, they spread into adjacent areas between Jijiga (0922N/4250E), Dire Dawa (0935N/4150E), and Ayasha (1045N/4234E). Some of the swarms were maturing and starting to copulate. Control operations treated 2,370 ha of which 2,190 ha were by air. At the end of the month, there was an unconfirmed report of a swarm in the highlands near Nazareth (0832N/3916E).

• FORECAST

There is a low possibility that a few more swarms may appear from northwest Somalia early in the forecast period between Jijiga, Dire Dawa and Ayasha, perhaps reaching the Harar Highlands and the Rift Valley. Breeding is likely to occur in these



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areas with hatching in May. Hoppers are likely to form groups and small hopper bands.

Djibouti

• SITUATION

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

• FORECAST

No significant developments are likely.

Somalia

• SITUATION

On 2-4 April and again on 10-12 April, a few immature swarms were seen on the plateau near Boroma (0956N/4313E), Hargeisa (0931N/4402E), and west of Burao (0931N/4533E) moving southwest towards eastern Ethiopia. On the 18th and 21st, an immature swarm was seen near Gabiley (0942N/4338E). During the last decade of the month, no locusts were seen during surveys carried out on the coast and plateau except for 5 ha of gregarious mid-instar hoppers at densities up to 20 hoppers/m² on the northwest coast near Lughaye (1041N/4356E).

• FORECAST

There is a low possibility that a few more swarms may be reported on the plateau early in the forecast period moving towards eastern Ethiopia. Although small-scale breeding could occur in areas of recent rainfall, the situation is expected to remain calm.

Egypt

• SITUATION

No locusts were seen in April during surveys carried out on the Red Sea coast and in subcoastal areas between Berenice (2359N/3524E) and the Sudan border, along both sides of Lake Nasser in the Allaqi, Garf Husein (2317N/3252E), Abu Simbel (2219N/3138E) and Tushka (2247N/3126E) areas, and in the northwest near Siwa (2912N/2531E) and Salum (3131N/2509E).

• FORECAST

No significant developments are likely.

Saudi Arabia

• SITUATION

During April, control operations continued against hopper bands and adult groups mainly on the northern Red Sea coastal plains between Yenbo

(2405N/3802E) and Al Wajh (2615N/3627E) and adjacent subcoastal areas in the Asir Mountains. Smaller infestations were present on the central coast between Lith (2008N/4016E) and Qunfidah (1909N/4107E), on the extreme northern coast near Jordan, and in the Asir Mountains near Taif (2115N/4021E). Adult groups moved from the Tabuk and Medinah regions to the interior and laid eggs from east of Khaybar (2542N/3917E) to Hail (2731N/4141E) and, to a lesser extent, near Al Jawf (2948N/3952E). Control operations treated 19,994 ha in April, of which 3,400 ha were by air.

• FORECAST

Locust infestations will decline on the Red Sea coastal plains but will increase in the interior areas of Al Jawf, Hail and perhaps Gassim as hatching occurs and hoppers form bands.

Yemen

• SITUATION

During the first two decades of April, low numbers of immature and mature solitarious adults were present on the central coast near Hodeidah (1450N/4258E) and, to a lesser extent, on the northern Red Sea coastal plains near Midi (1619N/4248E) and on the Gulf of Aden coast near Am Rija (1302N/4434E).

• FORECAST

Locust numbers will continue to decline on the coastal plains of the Red Sea and Gulf of Aden. Scattered adults and perhaps a few small groups may be appear in the spring breeding areas of the interior and lay eggs in areas of recent rainfall that will hatch during the forecast period, causing locust numbers to increase slightly.

Oman

• SITUATION

During April, small-scale breeding was in progress in the northern interior near Ibri (2314N/5630E) as *transiens* and gregarious adults continued to lay eggs, and groups of mid to late instar hoppers formed. Scattered solitarious adults were maturing throughout the area as well as further east in the Dakhiliya and Sharqiya regions between Adam (2223N/5731E) and Al Qabel (2234N/5843E). More groups of solitarious and gregarious hoppers of all instars at densities up to 3 hoppers/m² were seen near Ibri during the last decade. Control operations commenced on the 30th in farms, treating 130 ha.

• FORECAST

In early May, small-scale hatching will continue and fledging will commence in Dhahera, causing locust numbers to increase. Thereafter, hoppers and adults are likely to concentrate as vegetation dries out and form small groups. Limited breeding may also occur in parts of Dakhiliya and Sharqiya.

Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Lebanon, Palestine, Qatar, Syria, Tanzania, Turkey, Uganda and UAE

• FORECAST

No significant developments are likely.

EASTERN REGION

Iran

• SITUATION

In late March and early April, scattered mature solitarious and *transiens* adults were present on about 1,000 ha at densities of up to 5 adults/m² and laying eggs in areas of heavy rainfall on the southeast coast near Jask (2540N/5746E). Hatching occurred during the second decade of the month and low numbers of solitarious hoppers were seen. Ground teams treated 600 ha on 21-30 April. In the Jaz Murian Basin, scattered immature and mature solitarious adults were present and breeding at a few places near Kahnuj (2757N/5742E).

• FORECAST

Small-scale breeding will continue in coastal and interior areas of the southeast, causing locust numbers to increase slightly. As vegetation dries out, small groups may form by the end of the forecast period.

Pakistan

• SITUATION

No locusts were seen during surveys carried out in the spring breeding areas of Baluchistan in April.

• FORECAST

Low numbers of adults may be present in parts of Baluchistan where small-scale breeding could occur in areas of recent rainfall. Low numbers of adults are likely to appear in summer breeding areas of Bahawalpur and Rahimyar Khan where recent rainfall may allow early breeding to occur.

India

• SITUATION

During April, no locusts were seen during surveys carried out in Rajasthan and Gujarat.

• FORECAST

Low numbers of adults are likely to appear in Jaisalmer and Bikaner districts where recent rainfall may allow early breeding to occur.

Afghanistan

• SITUATION

No reports received.

• FORECAST

No significant developments are likely.



Announcements

Desert Locust warning levels. A colour-coded scheme indicates the seriousness of the current Desert Locust situation: green for *calm*, yellow for *caution*, orange for *threat* and red for *danger*. The scheme is applied to the Locust Watch web page and to the monthly bulletin's header. The levels indicate the perceived risk or threat of current Desert Locust infestations to crops and appropriate actions are suggested for each level.

Locust reporting. During calm (green) periods, countries should report at least once/month and send RAMSES data with a brief interpretation. During caution (yellow), threat (orange) and danger (red) periods, often associated with locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent at least twice/week within 48 hours of the latest survey. Affected countries are also encouraged to prepare decadal bulletins summarizing the situation. All information should be sent by e-mail to the FAO/ECLD Desert Locust Information Service (eclod@fao.org). Information received by the end of the month will be included in the FAO Desert Locust Bulletin for the current month; otherwise, it will not appear until the following month. Reports should be sent even if no locusts were found or if no surveys were conducted.

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

- **MODIS.** Vegetation imagery every 16 days (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/Regional/.MODIS/index.html)
- **MODIS.** Daily rainfall imagery in real time (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/index.html)
- **RFE.** Rainfall estimates every day, decade and month (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/index.html)
- **Greenness maps.** Dynamic maps of green vegetation evolution every decade (http://iridl.ldeo.columbia.edu/maproom/Food_Security/Locusts/Regional/greenness.html)



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DESERT LOCUST BULLETIN

- **CLCPRO.** 9th Executive Committee meeting and 7th Session of the Commission, Nouakchott, Mauritania (22-26 June)
- **CRC.** 29th Session of the Commission, UAE (November)
- **SWAC.** 29th Session (50th anniversary) of the Commission, Tehran, Iran (15-18 December)

- **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
- **Current threats updates.** Information

eLocust3. New introductory training videos are now available:

- eLocust3 in the field (http://www.youtube.com/watch?v=JX5-b5u_nlc)
- eLocust3 antenna (http://www.youtube.com/watch?v=qk9_pIFl2s0)
- eLocust3 charging (<http://www.youtube.com/watch?v=KoubKeCMIYQ>)
- eLocust3 new report (<http://www.youtube.com/watch?v=5BqpM6R4jJ8>)
- eLocust3 photos (http://www.youtube.com/watch?v=xsO-F7ALF_0)
- eLocust3 reports list (<http://www.youtube.com/watch?v=SoYCncytSsk>)
- eLocust3 settings (<http://www.youtube.com/watch?v=4XtdM0aJn5Q>)

2014 events. The following activities are scheduled or planned:

- **CLCPRO/CRC/SWAC.** Inter-regional Locust Information Officers workshop, Agadir, Morocco (19-23 May)
- **CRC.** 1st Sub-regional workshop on maintaining Desert Locust sprayers for non-frontline countries, Ismailia, Egypt (25-28 May)



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.

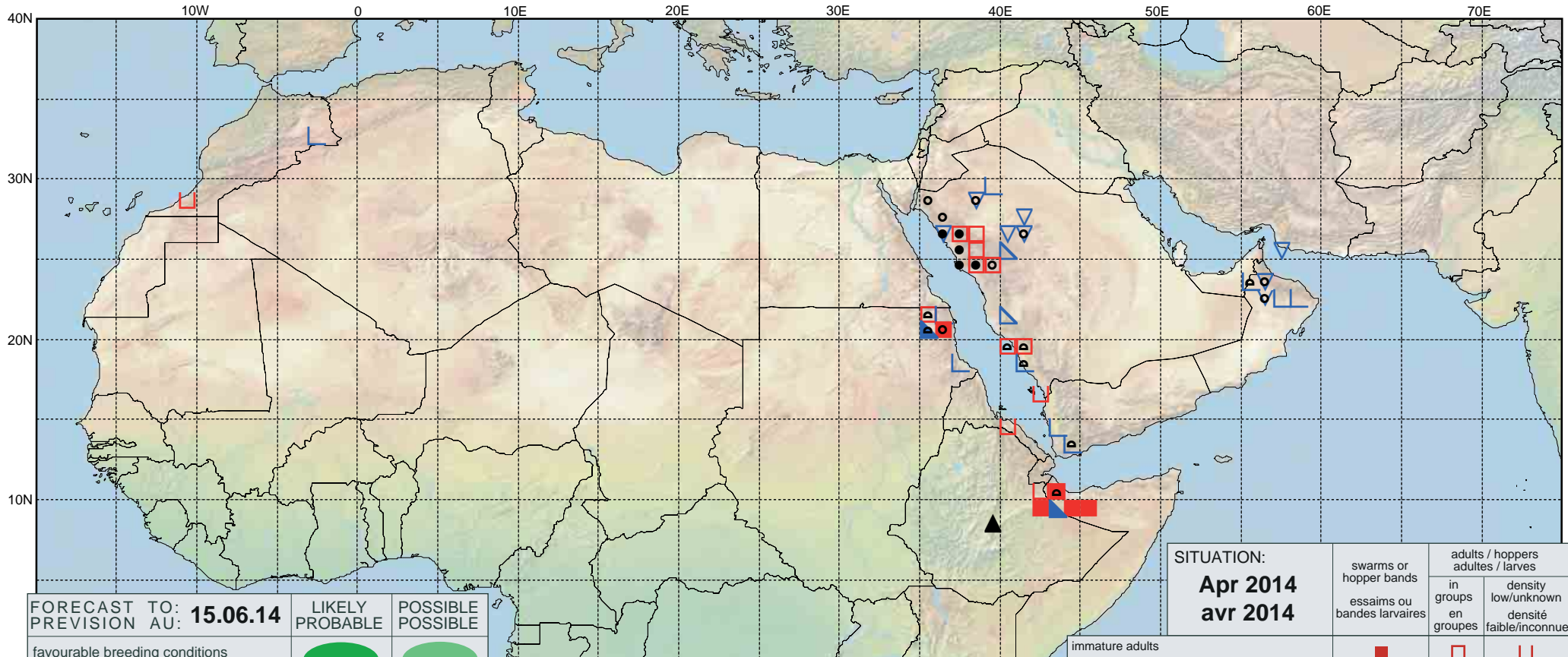


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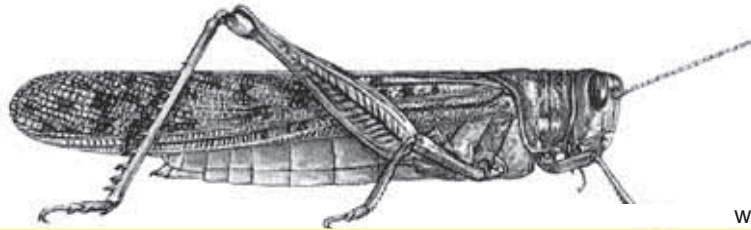
Desert Locust Summary

Criquet pèlerin - Situation résumée



FORECAST TO: PREVISION AU:	15.06.14	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 2014 avr 2014	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 May 2014
Forecast until mid-July 2014**

(3.6.2014)

The Desert Locust situation remained calm during May except in the Arabian Peninsula and Horn of Africa. Ground and aerial control operations were carried out against hopper bands that formed in the interior of Saudi Arabia. Ground operations were also undertaken in northern Oman and UAE. Swarms moved along the plateau in northern Somalia and into eastern Ethiopia with a few reaching the central and northern highlands. Although aerial and ground control operations were carried out, egg-laying and subsequent hopper band formation are expected in eastern Ethiopia and perhaps northern Somalia. There is a risk that a few small swarms from northeast Somalia and Oman may reach the summer breeding areas along the Indo-Pakistan border where pre-monsoon rains fell in May and early breeding is expected. During the forecast period, locust numbers will increase slightly in the summer breeding areas of the Sahel of West Africa and Sudan with the onset of the seasonal rains.

Western Region. The situation remained calm during May. Due to a lack of rain, dry conditions prevailed in the spring breeding areas south of the Atlas Mountains in Northwest Africa. A few groups of hoppers and adults were treated near irrigated crops in the central Sahara of **Algeria**. Early rains may have fallen in parts of the summer breeding areas in the northern Sahel of West Africa. During the forecast period, low numbers of adults are expected to appear

in southeast and central **Mauritania**, northern **Mali** and in the Tamesna and Air Mountains of northern **Niger**. Small-scale breeding will occur in those areas that receive rainfall.

Central Region. Locusts declined on the Red Sea coast of northern **Saudi Arabia** as small groups and swarms moved to the interior where hatching and band formation occurred in May. Aerial and ground control operations were carried out. Breeding also occurred in the northern interior of **Oman** where an increasing number of hopper groups formed and were treated. The infestations extended to several farms on the border in **UAE** where hopper bands were controlled. About a dozen swarms appeared in eastern **Ethiopia** from adjacent areas of northern **Somalia**. A few swarms moved east across northern Somalia and may continue towards the Indo-Pakistan summer breeding areas. Most of the swarms remained in eastern Ethiopia while a few moved into the central and northern highlands. Although aerial and ground control operations were undertaken, breeding will occur during the forecast period, causing hopper bands to form in eastern Ethiopia and, to a lesser extent, in parts of the northern Somalia plateau. Small-scale breeding occurred in cropping areas of the Nile Valley in northern **Sudan** and control operations were carried out.

Eastern Region. The situation remained calm in May. Small-scale breeding in southeast **Iran** may cause a few adult groups to form and move to the Indo-Pakistan border. A similar situation may be in progress in southwest **Pakistan** where heavy rains fell in May. Limited control operations were carried out in Iran. Early breeding is expected to occur along both sides of the Indo-Pakistan border due to a second consecutive month of pre-monsoon rains. There is a risk that a few small groups or swarms may appear from Oman and perhaps northern Somalia.

The FAO Desert Locust Bulletin is issued every month by the Desert Locust Information Service, AGP Division (Rome, Italy). It is supplemented by Alerts and Updates during periods of increased Desert Locust activity. All products are distributed by e-mail and are available on the Internet.

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

Facsimile: +39 06 570 55271

E-mail: eclo@fao.org

Internet: www.fao.org/ag/locusts

Facebook: www.facebook.com/faolocust

Twitter: twitter.com/faolocust



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DESERT LOCUST BULLETIN



Weather & Ecological Conditions in May 2014

Ecological conditions remained unusually dry in the spring breeding areas of Northwest Africa due to little rainfall. Good rains fell in the Horn of Africa. Early rains fell in parts of the summer breeding areas of the Sahel in West Africa and, for the second consecutive month, along the Indo-Pakistan border.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) continued its seasonal movement northwards over the Sahel in West Africa in May. During the first two decades, it was positioned further north than usual over Mali and Niger, reaching Gao and Tassara, respectively. Light to moderate rains, early for this time of year, may have fallen in parts of Tamesna in both countries, the Air Mountains in Niger, and from Timetrine and northwest Mali to southeast and central Mauritania. No rain fell during the third decade. In Northwest Africa, light rains fell in parts of the Anti-Atlas Mountains in Morocco during the first decade and along the southern side of the Atlas Mountains in the northeast, extending to Algeria during the second decade. Despite these rains, primarily dry conditions prevailed in the region but ecological conditions are expected to improve in Mauritania, Mali and Niger.

In the **Central Region**, good rains fell over the Horn of Africa and in the spring breeding areas of the interior of Saudi Arabia during the first two decades of May. Light to moderate rainfall occurred in eastern Ethiopia and adjacent areas on the northern Somalia plateau between Boroma, Garowe and Erigavo. Heavier rains fell in the Ethiopian Highlands and in parts of the Ogaden. Consequently, ecological conditions remained favourable for breeding in Ethiopia and improved in northern Somalia where the southwest monsoon winds had become established by mid May. In the spring breeding areas in the interior of Saudi Arabia, good rains fell during the first decade of May near Hail that should allow breeding to continue until June. In northern Oman, vegetation was drying out in most places despite light rainfall in early May. In the summer breeding areas, good rains fell in eastern Sudan near Derudeb for the second

consecutive month and ecological conditions are likely to be favourable for breeding.

In the **Eastern Region**, good rains fell in parts of the spring breeding areas in southeast Iran and southwest Pakistan in mid-May. The heaviest showers occurred in Pakistan near Turbat and Lasbela. The rains may allow ecological conditions to remain favourable for locust breeding and survival slightly longer than in most years. Pre-monsoon rains continued to fall along both sides of the Indo-Pakistan border during the first two decades of May. Consequently, breeding is likely to commence earlier than most years in parts of Tharparkar and Cholistan, Pakistan and in Rajasthan, India.



Area Treated

Control operations treated nearly 30,000 ha in May, which was slightly more than in April.

Algeria	40 ha (May)
Ethiopia	2,372 ha (May)
Iran	2,400 ha (May)
Oman	4,960 ha (May)
Saudi Arabia	16,448 ha (May)
Sudan	4,595 ha (April updated)
	786 ha (May)
UAE	2,500 ha (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 centre, and breed on a small scale with the onset of the summer rains.

Mali

• SITUATION

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

• FORECAST

Scattered adults are likely to appear in parts of Timetrine, the Adrar des Iforas, and Tamesna and breed on a small scale as ecological conditions improve in areas of recent rainfall.

Niger

• SITUATION

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

• FORECAST

Scattered adults are likely to appear in parts of Tamesna and the Air Mountains, and breed on a small scale as ecological conditions improve in areas of recent rainfall.

Chad

• SITUATION

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

• FORECAST

No significant developments are likely.

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

During May, groups of immature and mature adults were present near cropping areas south of Adrar (2753N/0017W). The mature adults were copulating and late instar hopper groups were seen at one place. Ground teams treated 40 ha. No locusts were seen in the east near Illizi (2630N/0825E).

• FORECAST

Low numbers of adults are likely to persist near crops in the Adrar area where limited breeding could continue. Scattered adults may appear in the extreme south if rainfall occurs.

Morocco

• SITUATION

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

• FORECAST

Unless further rains fall in the spring breeding areas, no significant developments are likely.

Libya

• SITUATION

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

• FORECAST

Unless further rains fall in the spring breeding areas, 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

During the second half of April, control operations declined in the northeast where 975 ha of small groups and swarms of immature and mature adults were treated along Wadi Oko/Diib between Tomala (2002N/3551E) and Sufiya (2119N/3613E). Scattered adults were breeding on a small scale in a few places along the Nile River near Abu Hamed (1932N/3320E) and Dongola (1910N/3027E).

During May, scattered immature and mature solitary adults persisted in Wadi Oko/Diib. No locusts were seen on the southern coastal plains. In the Nile Valley, solitary hoppers and scattered maturing solitary and gregarious adults, at densities up to 1,250 adults/ha, were present in cropping areas in the Nile Valley near Dongola, Merowe (1830N/3149E), Berber (1801N/3400E) and Ed Damer (1734N/3358E). Some adults were copulating. Aerial control operations treated 786 ha of small adult groups near Ed Damer.

• FORECAST

Small-scale breeding will continue in the Nile Valley of Northern and River Nile States. An increasing number of adults will appear in summer breeding areas between Darfur and the Red Sea Hills, perhaps supplemented by a few small swarmlets from Saudi Arabia and Ethiopia. Initially, most of the adults are likely to be present in areas of recent rainfall near Kassala, but will extend to other areas as rains fall. Small-scale breeding will cause locust numbers to increase slightly.

Eritrea

• SITUATION

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



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DESERT LOCUST BULLETIN

• FORECAST

Scattered adults are likely to appear in the western lowlands where small-scale breeding will occur with the onset of the summer rains.

Ethiopia

• SITUATION

During May, about a dozen small to medium sized immature and mature swarms, ranging in size from 7 to 50 km², appeared from northern Somalia in Somali and Dire Dawa regions of the east. Some of the swarms moved to Oromiya, Addis Ababa and Amhara regions, reaching Addis Ababa on the 14th and adjacent districts in the highlands during the following week. One swarm nearly reached Lake Tana in the north and then disappeared. Control operations treated 2,372 ha mainly in the first half of May, of which 2,150 ha were treated by air.

• FORECAST

Breeding may be in progress and is likely to continue during June in Dire Dawa and Somali regions, perhaps including parts of the Ogaden, leading to the formation of hopper bands. There is a moderate risk that some swarms may reach the northern highlands where breeding is less likely.

Djibouti

• SITUATION

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

• FORECAST

No significant developments are likely.

Somalia

• SITUATION

In early May, there was an unconfirmed report of hoppers on the northwest coast near Geerisa (1022N/4434E). There were a few reports of immature and mature swarms on the plateau after mid-month. On the 19-20th, a mature swarm appeared over Hargeisa (0931N/4402E). On the 25-26th, immature swarms were reported near Boroma (0956N/4313E). On the 27th, maturing swarms were seen further east in Sool region, reaching the Las Anod (0828N/4721E) area that may have reached the northeast on the 29th.

• FORECAST

Small adult groups and swarms could continue to move towards the northeast early in the forecast

period. Limited breeding may occur in a few places on the plateau where rains fell recently that may lead to the formation of small hopper groups and bands.

Egypt

• SITUATION

No locusts were seen in May during surveys carried out on the Red Sea coast and in subcoastal areas near Abu Ramad (2224N/3624E), and along both sides of Lake Nasser in the Allaqi, Garf Husein (2317N/3252E), Abu Simbel (2219N/3138E) and Tushka (2247N/3126E) areas.

• FORECAST

No significant developments are likely.

Saudi Arabia

• SITUATION

During May, a few hoppers and adult groups persisted on the northern Red Sea coast and near Tabuk (2823N/3635E). Adult groups and small swarms continued to move from the Tabuk and Medinah regions to the interior where they persisted throughout the month. Egg-laying commenced in the third week of April followed by hatching from early May onwards. Hoppers of all instars formed small groups and bands from east of Khaybar (2542N/3917E) to Hail (2731N/4141E) and Gassim (2621N/4358E). Smaller scale breeding occurred south of Al Jawf (2948N/3952E) where mature adults, hoppers and a few hopper groups were present. Two aircraft and 15 ground teams treated 16,448 ha in May, of which 5,800 were by air.

• FORECAST

Early in the forecast period, small adult groups are likely to form in the interior near Hail, especially near cropping areas. Thereafter, locust infestations will decline as temperatures increase, vegetation dries out, and adults move to summer breeding areas in Sudan.

Yemen

• SITUATION

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

• FORECAST

Scattered adults may be present in parts of the interior where rains previously fell. Unless further rainfall occurs, no significant developments are likely.

Oman

• SITUATION

During May, breeding continued in the northern interior region of Dhahera between Ibri (2314N/5630E) and Buraimi (2415N/5547E) where an increasing number of small groups of late instar hoppers and immature adults developed as the month progressed.

Fledging started at mid-month and adults were maturing. Most of the infestations were concentrated southwest of Ibra and moving into farms as vegetation dried out. Ground teams treated 4,960 ha in May. Scattered mature solitary adults were seen further east near Ibra (2243N/5831E), and low-density solitary adults were reported from the Musandam Peninsula near Diba (2538N/5615E) at the end of the month.

• **FORECAST**

An increasing number of adult groups, and perhaps a few small swarms, are likely to form in Dhahera as vegetation dries out. Undetected breeding may have occurred in parts of Dakhiliya and Sharqiya.

UAE

• **SITUATION**

On 13 May, fourth and fifth instar hopper bands at densities of 10-20 hoppers/m² first moved from adjacent areas in Oman into several farms along a 50 km stretch of the border southwest of Al Ain (2413N/5543E) between Al Araad (2348N/5525E) and Al Quo'a (2326N/5525E). As hoppers fledged, immature adults increased from 18 to 25 May; thereafter, infestations declined as ground teams treated 2,500 ha. In Al Sharjah, low-density solitary adults were reported near Al Dhaid (2519N/5557E) on the 25th.

• **FORECAST**

A few small adult groups may appear near Al Ain and in parts of Ras Al Khaimah and Fujairah early in the forecast period.

Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Lebanon, Palestine, Qatar, Syria, Tanzania, Turkey and Uganda

• **FORECAST**

No significant developments are likely.

EASTERN REGION

Iran

• **SITUATION**

During May, control operations against hopper infestations on the southeast coast near Jask (2540N/5746E) ended on the 11th. In the Jaz Murian Basin, hatching occurred near Kahnuj (2757N/5742E) where solitary and *transiens* hoppers of all instars formed a few small groups of up to 200 hoppers/bush. Fledging was in progress and scattered immature solitary and *transiens* adults were reported. Scattered mature adults were seen near Bampur (2711N/6028E). Ground teams treated 2,400 ha in May.

• **FORECAST**

As vegetation dries out, a few small groups are likely to form and move east towards the Indo-Pakistan summer breeding areas.

Pakistan

• **SITUATION**

No reports were received during May.

• **FORECAST**

Although small-scale breeding may have occurred in parts of Baluchistan that received recent rains, locust numbers will decline as vegetation dries out and adults move to the summer breeding areas along the Indo-Pakistan border. Consequently, locusts will increase in Cholistan and Tharparkar, perhaps supplemented by adults arriving from Iran, Oman and the Horn of Africa. Early breeding is expected to occur in areas of pre-monsoon rains.

India

• **SITUATION**

During May, isolated mature solitary adults were seen at one location northwest of Jaisalmer (2652N/7055E) on the 16th. No locusts were seen elsewhere in Rajasthan and Gujarat.

• **FORECAST**

Low numbers of adults may be present in parts of western Rajasthan where small-scale breeding is expected to occur in areas that received pre-monsoon rains.

Afghanistan

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.

 **Announcements**

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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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2014 events. The following activities are scheduled or planned:

- **CLCPRO.** 9th Executive Committee meeting and 7th Session of the Commission, Nouakchott, Mauritania (22-26 June)
- **CRC.** 29th Session of the Commission, Abu Dhabi, UAE (23-27 November)
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Glossary of terms

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

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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.

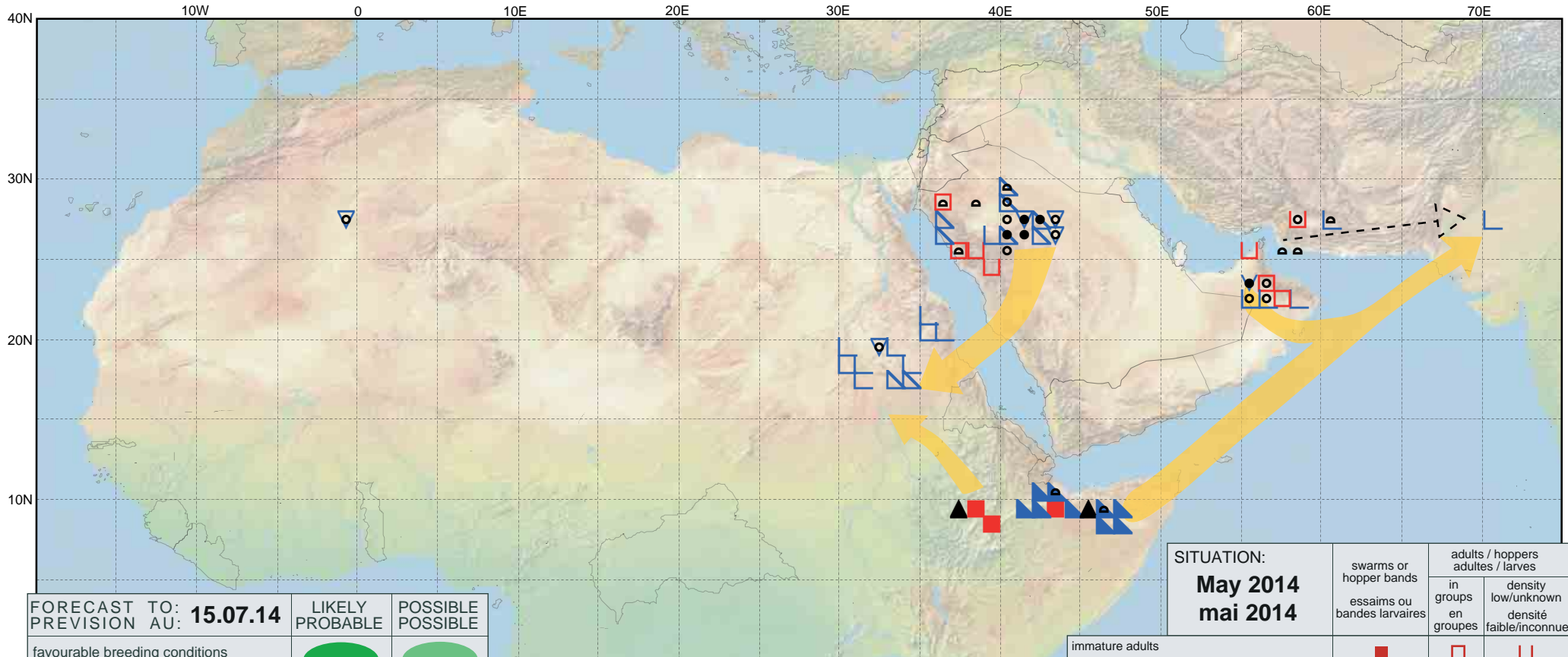


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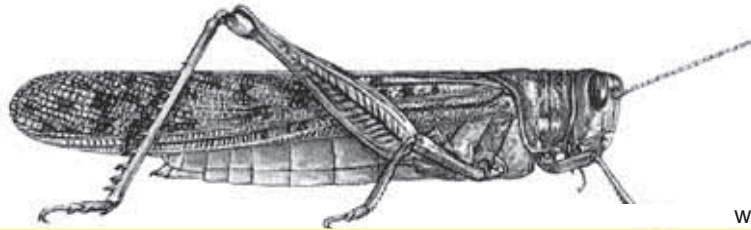
Desert Locust Summary

Criquet pèlerin - Situation résumée



FORECAST TO: PREVISION AU: 15.07.14	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 2014 mai 2014	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 June 2014
Forecast until mid-August 2014**

(3.7.2014)

The Desert Locust situation remained calm during June except in parts of the Central Region. Although control operations continued against infestations in the spring breeding areas of Saudi Arabia, a few small swarms may form and move to Yemen and Sudan in July where breeding will occur in areas that receive summer rains. Locust infestations declined in the Horn of Africa and a few swarms moved to northern Ethiopia and Eritrea. In Iran, control operations were carried out against hopper and adult groups that formed in the spring breeding areas. During the forecast period, small-scale breeding will commence with the onset of the seasonal rains in the summer breeding areas of the northern Sahel in West Africa and along the Indo-Pakistan border, causing locust numbers to increase slightly but remain below threatening levels.

Western Region. The situation remained calm during June. A few groups of mature adults were present and laying eggs in irrigated areas in the central Sahara of **Algeria** and 22 ha were treated. Elsewhere, dry conditions prevailed, and no surveys were carried out and no locusts were reported. During the forecast period, low numbers of adults are expected to appear in southeast and central **Mauritania**, northern **Mali**, in the Tamesna and Air Mountains of northern **Niger**, and in central and eastern **Chad**. Small-scale breeding will occur in those areas that receive rainfall, causing locust numbers to increase slightly.

Central Region. The situation remained generally calm during June except in **Saudi Arabia** where spring breeding continued in the interior, giving rise to additional hopper groups and bands, and adult groups. Groups of mature adults moved south while a few immature swarms arrived in northern **Yemen** and dispersed in the interior and central highlands. Aerial and ground control operations treated 17,800 ha in Saudi Arabia. A few swarms were seen on the plateau in northern **Somalia** in early June and small swarms moved to northern **Ethiopia** and adjacent highland areas in **Eritrea**. Aircraft treated nearly 1,200 ha in northern Ethiopia. Control operations concluded in **Oman** and only scattered adults remained. In northern **Sudan**, adults formed a few groups in the Nile Valley that were treated. During the forecast period, a few small swarms may form in the spring breeding areas of the interior in Saudi Arabia and move to the summer breeding areas in Sudan and Yemen where breeding will cause locust numbers to increase in those areas that receive rainfall. A few small swarms from northern Ethiopia could appear in Eritrea and move to Sudan in July.

Eastern Region. Groups of hoppers and adults formed in the spring breeding areas of southeastern **Iran**, and 18,000 ha were treated during the first half of June. Thereafter, the situation improved. No locusts were reported elsewhere in the region. During the forecast period, low numbers of adults are expected to appear on both sides of the **Indo-Pakistan** border where small-scale breeding will occur with the arrival of the southwest monsoon rains, causing locust numbers to increase slightly.

The FAO Desert Locust Bulletin is issued every month by the Desert Locust Information Service, AGP Division (Rome, Italy). It is supplemented by Alerts and Updates during periods of increased Desert Locust activity. All products are distributed by e-mail and are available on the Internet.

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

Facsimile: +39 06 570 55271

E-mail: eclo@fao.org

Internet: www.fao.org/ag/locusts

Facebook: www.facebook.com/faolocust

Twitter: twitter.com/faolocust



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Weather & Ecological Conditions in June 2014

Despite a few showers, seasonal rains did not yet commence in the summer breeding areas of the northern Sahel in West Africa and Sudan. Mainly dry conditions prevailed along the Indo-Pakistan border due to a delay in the arrival of the southwest monsoon.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) continued its seasonal movement northwards over the Sahel in West Africa in June. During the first two decades, it was positioned further north than usual over Mali and Niger, almost reaching In Abangharit in Niger, resulting in light rainfall in central Mali and Niger between Gao and Agadez. By the end of the month, the ITCZ had reached Tintane and Oualata in southern Mauritania, but remained south of Kidal in Mali, south of In Abangharit in Niger and south of Arada in Chad. Its position during the third decade was slightly further south than usual. Nevertheless, light rains fell in northern Mali in Timetrine and the northern Adrar des Iforas. Ecological conditions are expected to improve in these areas while conditions remained dry and unfavourable for breeding in other parts of the northern Sahel. In Northwest Africa, no significant rainfall occurred and dry conditions prevailed except for a few places along the Ziz-Ghris Valley in Morocco south of the Atlas Mountains.

In the **Central Region**, the Inter-Tropical Convergence Zone (ITCZ) retreated slightly southwards in Sudan during the first two decades of June but then moved north again during the last decade of June, reaching Hamrat Esh Sheikh and south of Khartoum. Consequently, only light showers fell in the southern portion of the summer breeding areas south of El Fasher and near Sodiri and Kassala. More rainfall will be required before ecological conditions become favourable for breeding in the interior of Sudan and western Eritrea. Good rains fell in northwest Ethiopia and to a lesser extent at times on parts of the plateau in northwest Somalia and adjacent areas of the Ogaden in eastern Ethiopia. Good rains also fell in parts of the central highlands in Yemen. As a result of these rains and associated

runoff, ecological conditions could become favourable for limited breeding on the Somali plateau near Burao, in parts of the Ogaden, and in wadis that drain the eastern side of the central highlands in Yemen.

In the **Eastern Region**, light rain fell at times in the summer breeding areas of Pakistan and India during June. In Pakistan, showers fell in the Lasbela area during the first two decades and in northern Cholistan during the last decade. In India, light rain fell in eastern Rajasthan during the first decade and northern Rajasthan in the last decade. Nevertheless, generally dry conditions prevailed due to the delayed arrival of the southwest monsoon.



Area Treated

Control operations treated nearly 37,300 ha in June, compared to 29,500 ha in May.

Algeria	22 ha (May)
Ethiopia	1,180 ha (June)
Iran	11,500 ha (May, updated) 18,000 ha (1-15 June)
Oman	56 ha (June)
Saudi Arabia	17,800 ha (June)
Sudan	125 ha (June)



Desert Locust Situation and Forecast

(see also the summary on page 1)

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 centre, and breed on a small scale with the onset of the summer rains, causing locust numbers to increase slightly.

Mali

• SITUATION

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

• FORECAST

Scattered adults are likely to appear in parts of Timetrine, the Adrar des Iforas, and Tamesna and breed on a small scale as ecological conditions improve in areas of recent rainfall, causing locust numbers to increase slightly.

Niger

• SITUATION

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

• FORECAST

Scattered adults are likely to appear in parts of Tamesna and the Air Mountains, and breed on a small scale as ecological conditions improve in areas of recent rainfall, causing locust numbers to increase slightly.

Chad

• SITUATION

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

• FORECAST

Scattered adults are likely to appear in the northern Sahel and breed on a small scale with the onset of the summer rains, causing locust numbers to increase slightly.

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

During June, groups of mature adults were present and laying eggs in irrigated areas in the central Sahara near Adrar (2753N/0017W), and control teams treated 22 ha.

• FORECAST

Low numbers of adults are likely to persist near crops in the Adrar area where limited breeding could continue. Scattered adults may appear in the extreme south if rainfall occurs.

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

During June, scattered immature and mature solitary adults including a few small groups persisted in the Nile Valley between Abu Hamed (1932N/3320E) and Wadi Halfa (2147N/3122E). Isolated mature adults were seen in Wadi Muqaddam in the Bayuda Desert northwest of Khartoum. Control teams treated 125 ha during June.

• FORECAST

Small-scale breeding will continue in the Nile Valley of Northern and River Nile States. An increasing number of adults will appear in summer breeding areas between Darfur and the Red Sea Hills, perhaps supplemented by a few small swarms from Saudi Arabia and Ethiopia. Small-scale breeding will cause locust numbers to increase slightly in areas of rainfall.

Eritrea

• SITUATION

On 28 June, a small swarm crossed from the Ethiopian border south of Adi Kula (1438N/3850E) and moved north in the highlands towards Areza (1454N/3845E). No surveys were conducted during the month.

• FORECAST

In early July, a few small swarms may appear in the highlands south of Asmara and move towards the western lowlands where breeding will occur with the onset of the summer rains.

Ethiopia

• SITUATION

During the first week of June, a few immature and mature swarms moved back and forth across the border with northern Somalia near Jijiga (0922N/4250E), and at least one medium-sized mature swarm reached the Afar region in the northeast



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and continued to the northern region of Tigray where it dispersed between Mekele (1329N/3928E) and Axum (1407N/3843E), about 60 km south of the Eritrea border. Aerial control operations treated 1,180 ha. In the eastern region, there were no further reports of locusts after the first week of June.

- **FORECAST**

A few small swarms may persist in the northern highlands early in the forecast period. Unless further rainfall occurs, no significant developments are likely in the eastern region.

Djibouti

- **SITUATION**

No reports were received during June.

- **FORECAST**

No significant developments are likely.

Somalia

- **SITUATION**

During June, a few immature and mature swarms were seen in the first decade moving on the plateau between Boroma (0956N/4313E) and Burao (0931N/4533E) as well as in the northeast near Iskushuban (1017N/5014E). No locusts were reported after 10 June.

- **FORECAST**

Small adult groups and swarms could continue to move on the plateau early in the forecast period. Limited breeding may occur in areas of recent rainfall.

Egypt

- **SITUATION**

No locusts were seen in June during surveys carried out on the Red Sea coast between Abu Ramad (2224N/3624E) and the Sudan border, and near Lake Nasser between Abu Simbel (2219N/3138E) and Tushka (2247N/3126E).

- **FORECAST**

No significant developments are likely.

Saudi Arabia

- **SITUATION**

During June, hatching continued during the first week in the interior, causing hopper groups and bands to form from east of Khaybar (2542N/3917E) to Hail (2731N/4141E) and Gassim (2621N/4358E). Groups of immature and mature adults were also present in

the same area. At the end of the month, a few mature adult groups were seen further south near Rawdah (2115N/4252E) and in the Asir Mountains near Taif (2115N/4021E) and Abha (1813N/4230E). One aircraft and 15 ground teams treated 17,800 ha in June, of which 2,700 were by air.

- **FORECAST**

A few small adult groups and swarms may form in the interior during July and move to summer breeding areas in Sudan and Yemen.

Yemen

- **SITUATION**

During June, a few immature swarms from the spring breeding areas appeared in the north. On the 13th, at least one immature swarm was reported near Sada'a (1656N/4345E), followed by a swarm in the interior near Al Hazm (1609N/4447E) and unconfirmed reports of small swarms or groups north of Wadi Hadhramaut on the plateau between Al Abr (1608N/4714E) and Thamud (1717N/4955E) on the 17th. There were also unconfirmed reports of similar populations in the Shabwah region on the same day. On the 22nd, an immature swarm was seen in the central highlands about 150 km south of Sana'a near Al Radmah (1413N/4435E). There were further reports of adult groups and swarms in the highlands at the end of the month. Surveys could not be carried out during June.

- **FORECAST**

A limited number of adult groups and small swarms are likely to concentrate in areas of green vegetation in Marib, Shabwah and the northern plateau of Hadhramaut where they will mature and lay eggs. If conditions remain favourable, hatching and band formation could occur. There is also a moderate risk that a few small groups or swarms could appear in the highlands and interior from spring breeding areas in Saudi Arabia during July.

Oman

- **SITUATION**

During the first half of June, the situation improved in Dhahera and Buraimi regions due to previous control operations and drying conditions. Only isolated late instar hoppers and adults were seen north of Ibri (2314N/5630E) and along the UAE border near Buraimi (2415N/5547E). No locusts were reported after mid-month. Small-scale breeding occurred in the Musandam Peninsula where scattered third to fifth instar hoppers and immature *transiens* adults were present in crops near Rodha (2551N/5616E). *Transiens* adults were also seen in crops in Sharqiya region southeast of Adam (2223N/5731E) and there were unconfirmed reports of hoppers. In the south, scattered immature and mature adults appeared in

irrigated cropping areas on the edge of the Rub Al Khali between Thumrait (1736N/5401E) and the Saudi Arabian border. Ground teams treated 56 ha in June.

• **FORECAST**

Isolated adults may persist in a few irrigated cropping areas in Sharqiya and Dhofar where they could breed on a small scale. No significant developments are likely.

UAE

• **SITUATION**

No reports were received during June.

• **FORECAST**

Small residual populations may be present in a few farms near the Oman border. No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Lebanon, Palestine, Qatar, Syria, Tanzania, Turkey and Uganda

• **FORECAST**

No significant developments are likely.

EASTERN REGION

Iran

• **SITUATION**

During the first half of June, immature and mature adult groups formed on the southeast coast near Jask (2540N/5746E) and Chabahar (2517N/6036E) as well as in the interior near Bampur (2711N/6028E). Some adults were seen copulating. Groups of late instar hoppers at densities of 200-300 hoppers/bush mixed with scattered solitary and *transiens* adults were present in the western part of the Jaz Murian Basin. Control teams treated 18,000 ha during the first half of June. The situation improved after mid-month.

• **FORECAST**

As vegetation dries out, a few small groups may form and move east to the Indo-Pakistan summer breeding areas.

Pakistan

• **SITUATION**

A late report indicated that no locusts were reported during May.

During June, no locusts were seen during surveys carried out in Tharparkar, Khairpur and Cholistan deserts, and in the Lasbela area.

• **FORECAST**

Small-scale breeding will commence with the onset of the monsoon rains, causing locust numbers to increase slightly in Lasbela, Tharparkar, Khairpur and Cholistan.

India

• **SITUATION**

During June, no locusts were seen during surveys carried out in Rajasthan and Gujarat.

• **FORECAST**

Low numbers of adults may be present in parts of Rajasthan where small-scale breeding is expected to occur with the onset of the monsoon rains.

Afghanistan

• **SITUATION**

No reports received.

• **FORECAST**

No significant developments are likely.



Announcements

Desert Locust warning levels. A colour-coded scheme indicates the seriousness of the current Desert Locust situation: green for *calm*, yellow for *caution*, orange for *threat* and red for *danger*. The scheme is applied to the Locust Watch web page and to the monthly bulletin's header. The levels indicate the perceived risk or threat of current Desert Locust infestations to crops and appropriate actions are suggested for each level.

Locust reporting. During calm (green) periods, countries should report at least once/month and send RAMSES data with a brief interpretation. During caution (yellow), threat (orange) and danger (red) periods, often associated with locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent at least twice/week within 48 hours of the latest survey. Affected countries are also encouraged to prepare decadal bulletins summarizing the situation. All information should be sent by e-mail to the FAO/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.



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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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DLIO workshop. The presentation made at the recent CLCPRO/CRC/SWAC Locust Information Officer workshop (Agadir, Morocco 19-23 May) is available on Slideshare:

<http://www.slideshare.net/FAOLocust/2014-clcprocrswac-desert-locust-information-officer-workshop>

2014 events. The following activities are scheduled or planned:

- **CRC.** 29th Session of the Commission, Abu Dhabi, UAE (23-27 November)
- **SWAC.** 29th Session (50th anniversary) of the Commission, Tehran, Iran (15-18 December)



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- 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;
- 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

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RAINFALL

LIGHT

- 1 - 20 mm of rainfall.

MODERATE

- 21 - 50 mm of rainfall.

HEAVY

- more than 50 mm of rainfall.

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- the process of reproduction from copulation to fledging.

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- July - September/October

WINTER RAINS AND BREEDING

- October - January/February

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- 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.



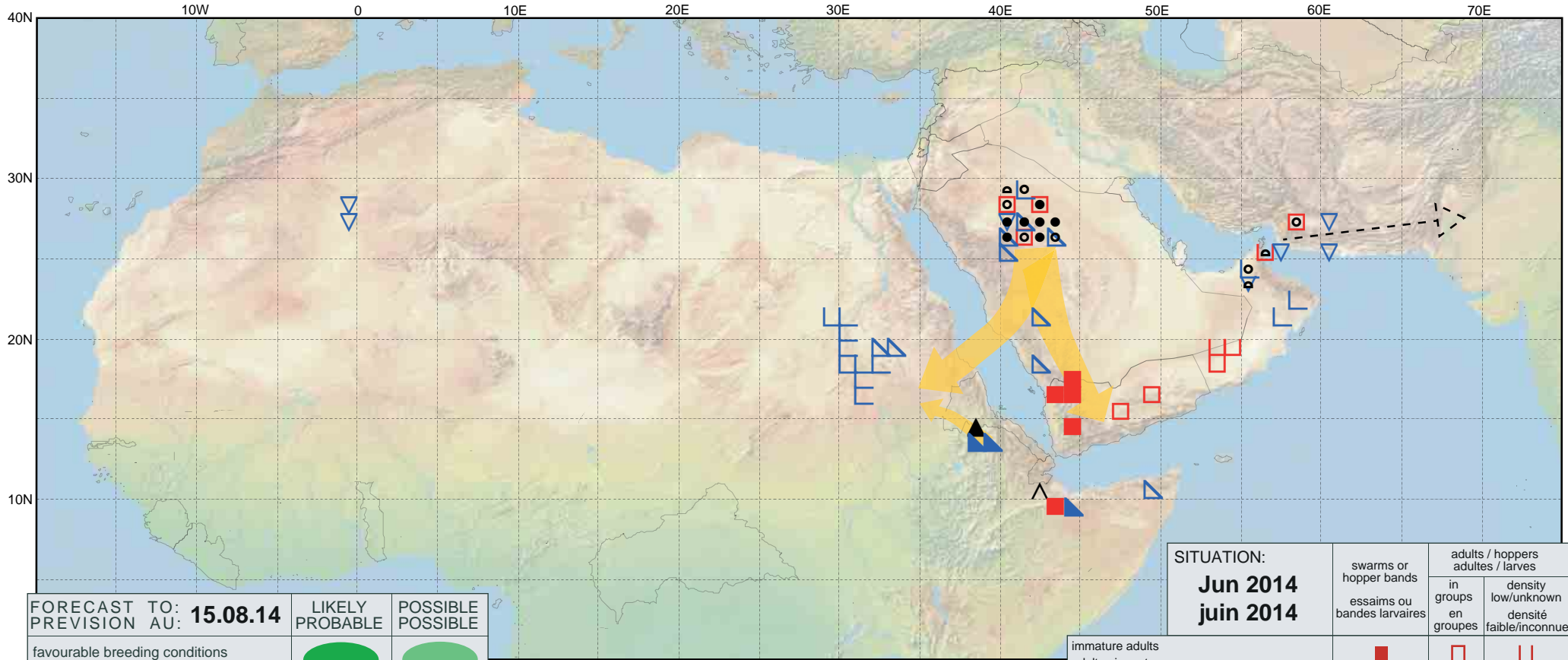
No. 429



Desert Locust Summary

Criquet pèlerin - Situation résumée

429



FORECAST TO:
PREVISION AU: **15.08.14**

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



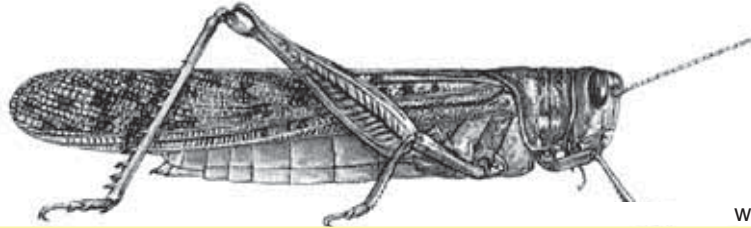
SITUATION:

Jun 2014
juin 2014

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. 430



**General Situation during July 2014
Forecast until mid-September 2014**

(1.8.2014)

The Desert Locust situation improved during July. Limited control operations were carried out against a small number of adult groups and swarms that formed in the spring breeding areas in the interior of Saudi Arabia. Some swarms moved to Yemen where they dispersed and may eventually lay eggs. Remnants of swarms were reported in northern Ethiopia and one swarm was treated in Eritrea. Scattered adults and a few small groups were present in northern Sudan where local breeding occurred in a few places, and scattered adults appeared in the summer breeding areas in Pakistan. During the forecast period, small-scale breeding will occur in the northern Sahel of West Africa and Sudan as well as along both sides of the Indo-Pakistan border, causing locust numbers to increase slightly.

Western Region. No locusts were reported and the situation remained calm in July. Seasonal rains commenced during the month in the summer breeding areas of the northern Sahel in West Africa and ecological conditions were improving. Consequently, small-scale breeding is expected to occur during the forecast period, causing locust numbers to increase slightly in southern and central **Mauritania**, northern **Mali**, **Niger** and **Chad**.

Central Region. The situation remained generally calm in July. Locust infestations declined in the spring breeding areas in the interior of **Saudi Arabia** due to control operations and drying conditions. Nevertheless, some adult groups and small swarms formed and moved southwest towards the Red Sea while others moved to the highlands and interior of **Yemen**. There is a risk that a few small swarms could reach **Sudan** where scattered adults and a few small groups were already present in the north. Remnants of earlier swarms were maturing in the northern highlands of **Ethiopia** and one swarm reached **Eritrea** where it was treated. During the forecast period, breeding will occur in the interior of Sudan and perhaps in the western lowlands of Eritrea and in the interior of Yemen, causing locust numbers to increase slightly.

Eastern Region. The situation remained calm in July. The southwest monsoon commenced, bringing rainfall to the summer breeding areas along both sides of the Indo-Pakistan border. So far, only scattered adults have been reported in Cholistan, **Pakistan**. During the forecast period, small-scale breeding will cause locust numbers to increase in Rajasthan, **India** and adjacent areas of Pakistan.

The FAO Desert Locust Bulletin is issued every month by the Desert Locust Information Service, AGP Division (Rome, Italy). It is supplemented by Alerts and Updates during periods of increased Desert Locust activity. All products are distributed by e-mail and are available on the Internet.

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

Facsimile: +39 06 570 55271

E-mail: eclo@fao.org

Internet: www.fao.org/ag/locusts

Facebook: www.facebook.com/faolocust

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No. 430

DESERT LOCUST BULLETIN



Weather & Ecological Conditions in July 2014

Seasonal rains commenced in the summer breeding areas of the northern Sahel in West Africa and Sudan as well as along the Indo-Pakistan border, causing ecological conditions to improve for breeding.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) continued its seasonal movement northwards over the Sahel in West Africa during July. By the third decade of the month, it had reached Tidjikja in central Mauritania, the Algerian border in northeast Mali, Arlit in Niger, and Kalait in northeast Chad. Its position over Mali was further north than usual. Consequently, good rains fell throughout most of the summer breeding areas in the northern Sahel in Mauritania between Boutilimit, Tidjikja and Nema, in the Timetrine, Adrar des Iforas and southern Tamesna in Mali, in southern Tamesna and the Tanout area of Niger, and in central areas of Kanem, Batha and Biltine regions in Chad. As a result, ecological conditions were becoming favourable for breeding over a widespread area. On the other hand, dry conditions prevailed in Northwest Africa.

In the **Central Region**, the Inter-Tropical Convergence Zone (ITCZ) moved steadily northwards over central Sudan during July, reaching Abu Uruq in North Kordofan and Ed Damer in the Nile Valley by the end of the second decade. Consequently, light to moderate showers fell south of these areas, extending from Chad to Eritrea, while heavier rains fell near Umm Saiyala in North Kordofan. As a result, ecological conditions were becoming favourable for breeding. In Eritrea, light rains fell in the southern part of the western lowlands. In Yemen, little rain fell in the interior except for a couple of light showers in the Hadhramaut and Shabwah regions. Dry conditions prevailed on the coast and plateau in northern Somalia.

In the **Eastern Region**, the southwest monsoon arrived in Rajasthan in mid-July, considered as generally normal for most years. Consequently, light to moderate rains fell mainly during the last week of the month in Rajasthan and Gujarat, extending to



Area Treated

Control operations declined dramatically in July, treating less than 2,500 ha compared to more than 37,000 ha in June.

Eritrea 100 ha (July)

Saudi Arabia 2,180 ha (July)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

No locusts were seen during a survey in southern and central areas on 17-21 July.

• FORECAST

Scattered adults are likely to appear in the south and centre, and breed on a small scale in areas of recent rainfall, causing locust numbers to increase slightly.

Mali

• SITUATION

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

• FORECAST

Scattered adults are likely to appear in parts of Timetrine, Tilemsi Valley, the Adrar des Iforas, and southern Tamesna and breed on a small scale in areas of recent rainfall, causing locust numbers to increase slightly.

Niger

• SITUATION

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

• FORECAST

Scattered adults are likely to appear in southern parts of Tamesna and the Air Mountains, and breed on a small scale in areas of recent rainfall, causing locust numbers to increase slightly.

Chad

• SITUATION

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

• FORECAST

Scattered adults are likely to appear in southern parts of Kanem, Batha and Biltine, and breed on a small scale in areas of recent rainfall, causing locust numbers to increase slightly.

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

• FORECAST

Scattered adults may appear in the extreme south and breed on a small scale if rainfall occurs.

Morocco

• SITUATION

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

• FORECAST

No significant developments are likely.

Libya

• SITUATION

No reports were received 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 adults and a few small groups were maturing in the north along the Atbara River east of Ed Damer (1734N/3358E) and, to a lesser extent,

in the Nile Valley between Berber (1801N/3400E) and Karima (1832N/3148E). Limited breeding occurred near Abu Hamed (1932N/3320E) where isolated fourth instar hoppers were reported.

• FORECAST

Small-scale breeding will continue in Northern and River Nile States. An increasing number of adults will appear in summer breeding areas between Darfur and the Red Sea Hills, perhaps supplemented by a few small swarms from Saudi Arabia. Small-scale breeding will cause locust numbers to increase slightly in areas of rainfall.

Eritrea

• SITUATION

In early July, an immature swarmlet was seen near Adi-Keyh (1451N/3922E) and the Ethiopian border. Ground teams treated 100 ha on 11 July.

• FORECAST

Scattered adults are likely to appear in the western lowlands. If additional rainfall occurs, small-scale breeding will take place, causing locust numbers to increase slightly.

Ethiopia

• SITUATION

In early July, a swarm reportedly moved from the Adigrat (1417N/3928E) area in northern Tigray to adjacent areas of Eritrea. Remnants of earlier immature swarms were maturing in the Amhara highlands of South Wello near Dessie (1107N/3938E).

• FORECAST

A few small swarms may persist in the northern highlands, mature and disperse to breed on a limited scale.

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

Egypt

- SITUATION

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

- FORECAST

No significant developments are likely.

Saudi Arabia

- SITUATION

During the first half of July, infestations declined in the spring breeding areas of the interior near Hail (2731N/4141E) as small immature adult groups and swarms moved southwest to the Asir Mountains near Medinah (2430N/3935E). Small mature groups and swarms were seen in the mountains as far south as Taif (2115N/4021E) and near Abha (1813N/4230E). Ground teams treated 2,180 ha. No locusts were seen during the second half of July.

- FORECAST

A few small adult groups and swarms may persist in parts of the Asir Mountains early in the forecast period as they move to summer breeding areas in Sudan and Yemen.

Yemen

- SITUATION

During the first decade of July, immature adult groups and swarms continued to appear in the highlands between Sana'a and Sada'a (1656N/4345E) as well as in the interior desert regions of Al Jawf and Shabwah. Scattered immature adults were seen during the remainder of the month in the interior between Marib (1527N/4519E) and Ataq (1435N/4649E) and, to a lesser extent, in Wadi Hadhramaut.

- FORECAST

Adult groups and small swarms are likely to concentrate in areas of green vegetation in Al Jawf, Marib, Shabwah and the northern plateau of Hadhramaut where they will mature and lay eggs in areas of recent rainfall. There is also a moderate risk that a few small groups or swarms could appear in the highlands and interior from spring breeding areas in Saudi Arabia in early August.

Oman

- SITUATION

No locusts were seen during surveys in the northern interior near Adam (2223N/5731E) in 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 reports were received during July.

- FORECAST

No significant developments are likely.

Pakistan

- SITUATION

During July, scattered mature solitary adults were seen at 10 places in Cholistan near the Indian border in Bahawalpur and Rahimyar Khan areas.

- FORECAST

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

India

- SITUATION

During July, no locusts were seen during surveys carried out in Rajasthan and Gujarat.

- 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.

Locust reporting. During calm (green) periods, countries should report at least once/month and send RAMSES data with a brief interpretation. During caution (yellow), threat (orange) and danger (red) periods, often associated with locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent at least twice/week within 48 hours of the latest survey. Affected countries are also encouraged to prepare decadal bulletins summarizing the situation. All information should be sent by e-mail to the FAO/ECLD Desert Locust Information Service (eclod@fao.org). Information received by the end of the month will be included in the FAO Desert Locust Bulletin for the current month; otherwise, it will not appear until the following month. Reports should be sent even if no locusts were found or if no surveys were conducted.

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

- **MODIS.** Vegetation imagery every 16 days (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/Regional/MODIS/index.html)
- **MODIS.** Daily rainfall imagery in real time (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/index.html)
- **RFE.** Rainfall estimates every day, decade and month (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/index.html)
- **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=P_LjxRk5CAwvG_0iFxiZ5C2fLByF3jHvHOx
- **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>)
- **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
- **CLCPRO/CRC/SWAC Locust Information Officer workshop final report.** Publications – Reports.

2014 events. The following activities are scheduled or planned:

- **CRC.** 29th Session of the Commission, Abu Dhabi, UAE (23-27 November)
- **SWAC.** 50th Anniversary of the Commission, Tehran, Iran (15 December)
- **SWAC.** 29th Session of the Commission, Tehran, Iran (16-18 December)
- **EMPRES/WR.** 13th EMPRES Liaison Officer Meeting, Ouagadougou, Burkina Faso (1-5 December)
- **EMPRES/WR.** 10th Steering Committee Meeting, Ouagadougou, Burkina Faso (8-9 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



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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.

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.

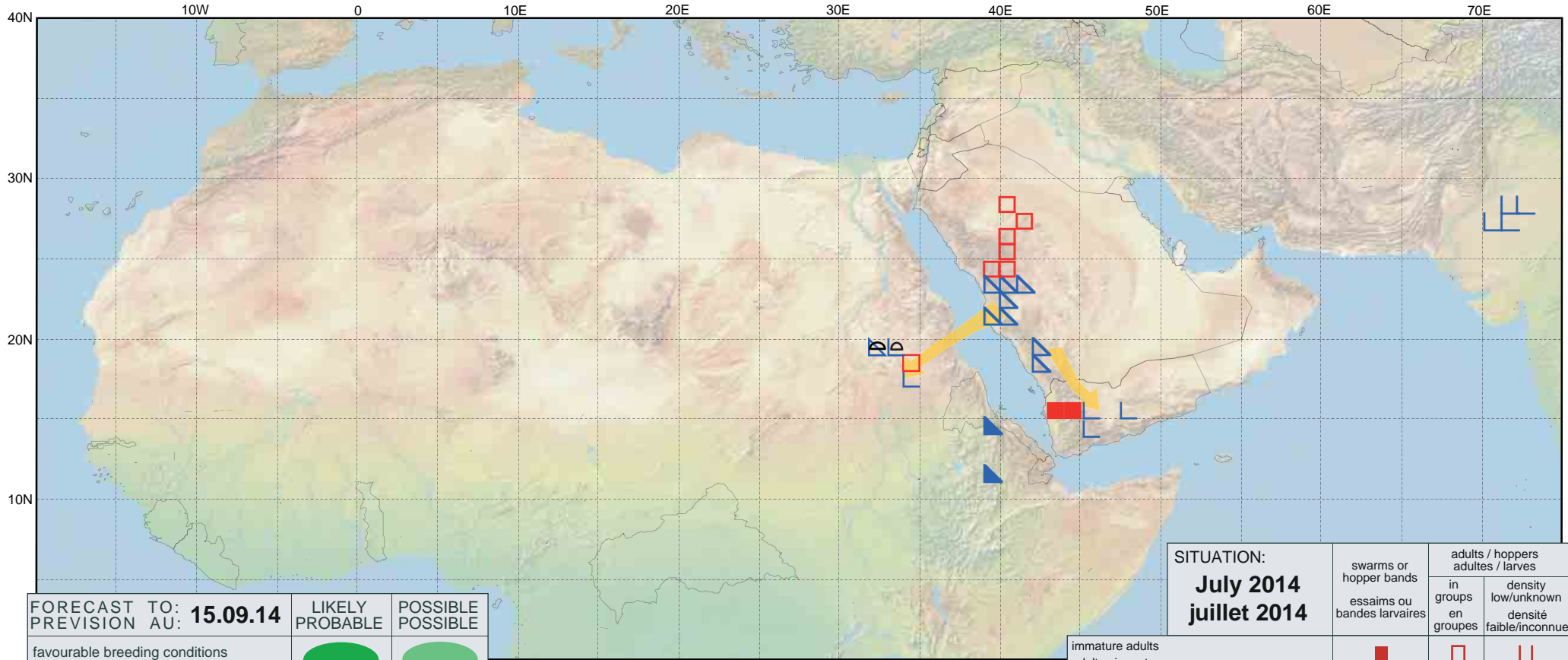
EASTERN








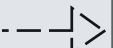
- locust-affected countries in South-West Asia: Afghanistan, India, Iran and Pakistan.





















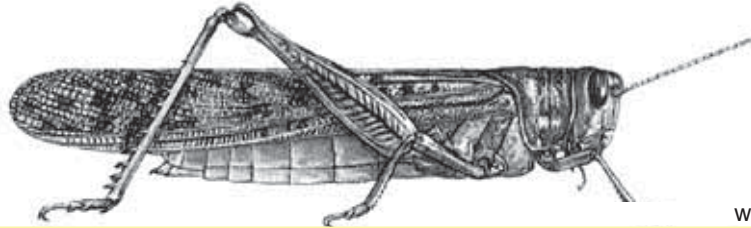
Desert Locust Summary

Criquet pèlerin - Situation résumée



FORECAST TO: PREVISION AU: 15.09.14	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 2014 juillet 2014	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. 431



**General Situation during August 2014
Forecast until mid-October 2014**

(2.9.2014)

The Desert Locust situation remained calm during August. Although only isolated adults were reported in the Sahel of West Africa and Sudan, there is potential for widespread breeding to occur that could cause locust numbers to increase substantially. Good rains fell throughout the area and much further north than usual. If vegetation starts to dry out in October, locusts could concentrate and form numerous groups in those areas that remain green. All countries should remain extremely vigilant. Elsewhere, good rains fell on the Red Sea coast of Yemen where small-scale breeding is expected. Summer breeding may end early along the Indo-Pakistan border where only low numbers of adults are present and the monsoon weakened after mid-August.

Western Region. The situation remained calm in August. Good rains fell unusually far north in the Sahel of West Africa, giving rise to favourable breeding conditions over a widespread area from western Mauritania to northeast Chad. Low numbers of adults were present in **Mauritania, Niger** and **Chad**, and almost certainly in northern **Mali** but surveys could not confirm this due to persistent insecurity. During the forecast period, breeding is expected to occur on a small but widespread scale, causing locust numbers to increase. If vegetation starts to dry out in October,

locusts could concentrate and form numerous groups in many areas. No locusts were reported in Northwest Africa.

Central Region. The situation remained calm in August. Good rains fell unusually far north in Sudan and gave rise to favourable breeding conditions over a widespread area, extending from Chad to western Eritrea. Low numbers of adults were present in **Sudan** and small-scale breeding was probably underway but difficult to detect. A few swarms continued to lay eggs in a small area of northeast **Ethiopia** and control teams treated 313 ha of hopper bands. In the absence of surveys, the situation remained unclear in **Yemen** where there were unconfirmed reports of adults on the Red Sea coast and swarms in the southern highlands. During the forecast period, widespread small-scale breeding is expected to occur in Sudan, causing locust numbers to increase with the potential to form numerous groups in about October when vegetation starts to dry out. Limited breeding is likely in western **Eritrea** and on the Red Sea coast in Yemen.

Eastern Region. The situation remained calm in August with only low numbers of adults present along both sides of the **Indo-Pakistan** border. Small-scale breeding was probably in progress in a few areas but is expected to be limited due to poor monsoon rains. No significant developments are likely.

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E-mail: eclo@fao.org

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Facebook: www.facebook.com/faolocust

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No. 431

DESERT LOCUST BULLETIN



Weather & Ecological Conditions in August 2014

Unusually good and widespread rains fell in the summer breeding areas of the Sahel in West Africa and Sudan as well as further north, giving rise to good breeding conditions. Good rains also fell on the Red Sea coast in Yemen. Monsoon rains declined at mid-month along the Indo-Pakistan border.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) continued its seasonal movement northwards over the Sahel in West Africa during August. By the third decade of the month, it had reached Akjoujt, Mauritania, 100 km north of Bir Bou Mokhtar and In Guezzam in southern Algeria, and north of Fada in northeast Chad. Its position was some 1.5 degrees further north than usual. As a result, unusually good rains fell throughout southern and central Mauritania, northern Mali and Niger, and central and northeast Chad. Rains reached as far north as Tibesti and the Mourdi Depression in northern Chad and light rains fell in parts of the Central and Southern Sahara of Algeria. Compared to August 2013, this month's rainfall was better distributed in the Sahel and cumulative totals exceeding 25 mm or more, the amount necessary for locust breeding, occurred some 100-400 km further north. Consequently, ecological conditions were favourable or became favourable over a large, widespread area of the northern Sahel. In Northwest Africa, ecological conditions remained favourable for locust survival on a limited scale in the Ziz-Ghris Valley south of the Atlas Mountains.

In the **Central Region**, the Inter-Tropical Convergence Zone (ITCZ) moved north during the first half of August over Sudan, reaching Dongola, and then began to retreat southwards. Good rains fell throughout the summer breeding areas from Darfur to the Red Sea Hills, and to the western lowlands in Eritrea. Good rains also extended into the Libyan Desert of northwest Sudan, north of Wadi Howar, reaching Nukhaylah oasis and Jebel Abyad Plateau where it rarely rains. Good rains that fell along the Red Sea from Jizan, Saudi Arabia to the Gulf of Aden in Yemen will allow breeding conditions to become

favourable. Light rain fell in parts of the summer breeding area in the interior of Yemen, mainly in Marib where flooding was reported and in Wadi Hadhramaut. Consequently, only limited areas appear to be favourable for breeding. In Oman, light showers occurred in parts of the northern interior but vegetation continued to be dry. In the Horn of Africa, good rains fell in northern and eastern Ethiopia. Light rains associated with the Karan season fell over parts of the Somali plateau near Boroma and on the escarpment, and vegetation started to become green in some areas.

In the **Eastern Region**, good rains associated with the monsoon fell in summer areas along both sides of the Indo-Pakistan border during the first decade of August but very little rain fell thereafter. Consequently, there remained a 20% deficit in West Rajasthan and ecological conditions were favourable for breeding only in some areas. In Pakistan, green vegetation was mainly limited to Cholistan. With an early withdrawal of the monsoon, vegetation is expected to dry out earlier than normal and breeding will end in both countries.



Area Treated

Ethiopia 313 ha (August)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During the second half of August, isolated solitary adults were present and maturing in Hodh El Chargui east of Nema (1636N/0715W), and northeast of Aguilal Faye (1827N/1444W) in Trarza and southwest Adrar.

• FORECAST

Small-scale breeding will cause locust numbers to increase within a widespread area between Trarza and Hodh El Chargui. If vegetation starts to dry out in October, numerous groups may form.

Mali

• SITUATION

During August, no locusts were seen by surveys in the west near Kayes (1426N/1128W) and Nara

(1510N/0717W), and in central areas near Mopti (1430N/0415W).

• **FORECAST**

Scattered adults are likely to be present in parts of Timetrine, Tilemsi Valley, the Adrar des Iforas, and southern Tamesna and will breed on a small scale, causing locust numbers to increase within a widespread area. If vegetation starts to dry out in October, numerous groups may form.

Niger

• **SITUATION**

During August, surveys were undertaken in the Tamesna between Agadez (1658N/0759E) and In Abangharit (1754N/0559E) where isolated mature solitary adults were seen.

• **FORECAST**

Small-scale breeding will cause locust numbers to increase in the Tamesna. Scattered adults may be present in the Air Mountains and breeding on a small scale in areas of recent rainfall. If vegetation starts to dry out in October, numerous groups may form.

Chad

• **SITUATION**

During August, isolated adults were maturing in northeast Kanem near Salal (1448N/1712E), in northwest Batha and southern BET near Beurkia (1523N/1800E), in Biltine between Arada (1501N/2040E) and Kalait (1550N/2054E), and in BET near Fada (1714N/2132E) and north of the Mourdi Depression.

• **FORECAST**

Small-scale breeding will occur over a widespread area, extending from Kanem to the northeast, causing locust numbers to increase. If vegetation starts to dry out in October, numerous groups may form.

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 near Adrar (2753N/0017W) in August.

• **FORECAST**

Scattered adults may appear in the extreme south and breed on a small scale in areas of recent rainfall.

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 July and 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, low numbers of mature solitary adults were present at densities up to 150 adults/ha in a few places of North Kordofan near Sodiri (1423N/2906E), in White Nile east of Umm Saiyala (1426N/3112E), in the Baiyuda Desert north of Khartoum, in Kassala state south of Derudeb (1731N/3607E), on the western side of the Red Sea Hills northwest of Haiya (1820N/3621E), and in River Nile and Northern states along the Nile Valley near Ed Damer (1734N/3358E), Abu Hamed (1932N/3320E), Merowe (1830N/3149E), Debba (1821N/3057E) and Dongola (1910N/3027E). Small-scale breeding occurred further north towards Wadi Halfa (2147N/3122E) where a few third instar hoppers were reported.

• **FORECAST**

Small-scale breeding is likely to be progress within a large area between Darfur and the Red Sea Hills. Breeding will continue during the forecast period, causing locust numbers to gradually increase. Once the seasonal rains end, vegetation will start to dry



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out and locusts will concentrate and could form small groups.

Eritrea

- SITUATION

No locust reports were received during August.

- FORECAST

Scattered adults are likely to be present in the western lowlands and breeding in areas of recent rainfall. Consequently, locust numbers will increase.

Ethiopia

- SITUATION

Several swarms laid eggs in July that hatched in August, causing a few hundred small hoppers bands to form in a small area of about 50 km x 75 km in the Awash Valley on the eastern side of the Amhara highlands near Mile (1123N/4052E). A few swarms continued to lay eggs at mid-month. Control teams treated 313 ha during August. On 5 August, an immature swarm was seen between Jijiga (0922N/4250E) and the border of northern Somalia.

- FORECAST

Hatching and band formation may continue in the northern Awash Valley during September. Any hoppers that escape control operations may form small adult groups or swarmlets that could spread into adjacent highland areas or move southeast towards Dire Dawa.

Djibouti

- SITUATION

No reports were received during August.

- FORECAST

No significant developments are likely.

Somalia

- SITUATION

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

- FORECAST

Isolated adults may be present in a few places on the plateau. No significant developments are likely.

Egypt

- SITUATION

During August, no locusts were seen on the Red Sea coast between Shalatyn (2308N/3535E) and the Sudan border.

- FORECAST

No significant developments are likely.

Saudi Arabia

- SITUATION

During August, no locusts were seen in the interior between Medinah (2430N/3935E) and (2731N/4141E), in the Asir Mountains near Taif (2115N/4021E) and Abha (1813N/4230E), and on the Red Sea coast between Lith (2008N/4016E) and Qunfidah (1909N/4107E).

- FORECAST

Scattered adults may be present and breeding on a small scale in areas of recent rainfall near Jizan. Consequently, locust numbers could increase slightly.

Yemen

- SITUATION

A late report indicated immature swarms were seen on the southern edge of the highlands to the north of the Gulf of Aden coastal plains near Am Rijja (1302N/4434E) on 13-17 July.

In the absence of surveys, the situation remained unclear during August. There were unconfirmed reports of scattered immature and mature adults on the northern Red Sea coastal plains near Suq Abs (1600N/4312E), and a few immature and mature swarms in the south near Zinjibar (1306N/4523E) and Am Rijja.

- FORECAST

Small-scale breeding may be in progress in parts of the interior near Marib and in Hadhramaut. Small-scale breeding is expected to occur on the northern Red Sea coastal plains and perhaps on the Gulf of Aden coast, causing locust numbers to increase slightly in both areas. A few small swarms may persist in the southern highlands.

Oman

- SITUATION

No locusts were seen during surveys in the northern interior west of Adam (2223N/5731E) and in the Musandam Peninsula 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

During July, no locusts were seen on the southeast coast near Chabahar (2517N/6036E) and in the interior near Bampur (2711N/6028E).

During August, no locusts were seen during surveys carried out in Sistan-Baluchistan, Hormozgan and Kerman provinces.

• FORECAST

No significant developments are likely.

Pakistan

• SITUATION

During August, isolated mature solitarious adults were seen at 6 places near the Indian border in Bahawalpur and Rahimyar Khan districts of Cholistan. No locusts were seen in Tharparkar desert or in the Lasbela area west of Karachi.

• FORECAST

Small-scale breeding will continue during September, causing locust numbers to increase slightly between Tharparkar and Cholistan. Unless further rains fall, conditions are expected to become dry earlier than in most years and breeding will come to an end in October.

India

• SITUATION

During August, isolated immature solitarious adults were present in northwest Rajasthan between Bikaner (2801N/7322E) and the Pakistan border. No locusts were seen in Gujarat.

• FORECAST

Small-scale breeding will continue during September, causing locust numbers to increase slightly in Rajasthan. Unless further rains fall, conditions are expected to become dry earlier than in most years and breeding will come to an end in October.

Afghanistan

• SITUATION

No reports received.

• FORECAST

No significant developments are likely.

to the monthly bulletin's header. The levels indicate the perceived risk or threat of current Desert Locust infestations to crops and appropriate actions are suggested for each level.

Locust reporting. During calm (green) periods, countries should report at least once/month and send RAMSES data with a brief interpretation. During caution (yellow), threat (orange) and danger (red) periods, often associated with locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent at least twice/week within 48 hours of the latest survey. Affected countries are also encouraged to prepare decadal bulletins summarizing the situation. All information should be sent by e-mail to the FAO/ECLD Desert Locust Information Service (eclod@fao.org). Information received by the end of the month will be included in the FAO Desert Locust Bulletin for the current month; otherwise, it will not appear until the following month. Reports should be sent even if no locusts were found or if no surveys were conducted.

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

- **MODIS.** Vegetation imagery every 16 days (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/.Regional/.MODIS/index.html)
- **MODIS.** Daily rainfall imagery in real time (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/index.html)
- **RFE.** Rainfall estimates every day, decade and month (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/index.html)
- **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=P_LjxRk5CAwvG_0iFxfjZ5C2fLByF3jvhHOx
- **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>)



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



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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>)
- **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

2014 events. The following activities are scheduled or planned:

- **CRC.** 29th Session of the Commission, Abu Dhabi, UAE (23-27 November)
- **EMPRES/WR.** 13th EMPRES Liaison Officer Meeting, Ouagadougou, Burkina Faso (1-5 December)
- **EMPRES/WR.** 10th Steering Committee Meeting, Ouagadougou, Burkina Faso (8-9 December)
- **SWAC.** 50th Anniversary of the Commission, Tehran, Iran (15 December)
- **SWAC.** 29th Session of the Commission, Tehran, Iran (16-18 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

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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Desert Locust Summary

Criquet pèlerin - Situation résumée

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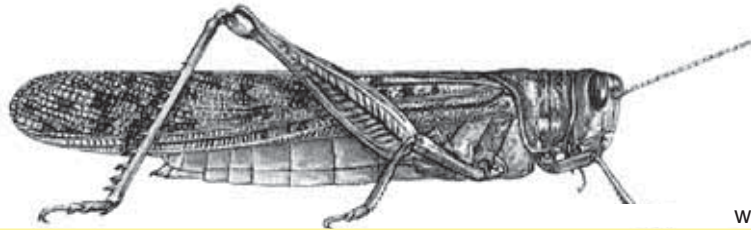
FORECAST TO:
PREVISION AU: **15.10.14**

LIKELY PROBABLE 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:
August 2014
août 2014

	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**

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FAO Emergency Centre for Locust Operations



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**General Situation during September 2014
Forecast until mid-November 2014**

(2.10.2014)

The Desert Locust situation remained calm during September. Only low numbers of hoppers and adults were seen during surveys in the northern Sahel between Mauritania and Eritrea. However, ecological conditions remained very favourable for breeding and there may be more locusts present than seen during the surveys. This should become evident once vegetation dries out and adults form groups. Consequently, there is a risk for groups to form in western Mauritania, northern Mali and Niger, northeast Chad, central and eastern Sudan, and in western Eritrea. It appears that this has already started in eastern Sudan where adult groups and a swarm formed. Strict vigilance is required in all countries during October as there is a potential for the situation to deteriorate. Good rains fell in the winter breeding areas along the eastern side of the Red Sea where small-scale breeding will cause locust numbers to increase. The situation remains unclear in Yemen due to insecurity. Elsewhere, a few small swarms are expected to form in northeast Ethiopia.

Western Region. The situation remained calm in September. Although good rains fell throughout the summer breeding areas in the northern Sahel of West Africa and conditions were favourable for breeding, only low numbers of adults and a few hoppers were detected in **Mauritania** and **Chad** while only adults were seen in **Niger**. There were reports of hoppers in northwest **Mali** and adults in the northeast but neither could be confirmed by surveys due to insecurity. There

is a potential risk that more locusts may be present than indicated by survey results, and this may become evident once vegetation dries out and adults form groups in areas that remain green in parts of Niger and Chad. In Mauritania, this could become evident as more adults appear in the northwest where breeding is expected to occur, causing locust numbers to increase further. Therefore, strict vigilance is required during the forecast period to detect those areas where gregarization could take place. In Northwest Africa, a few adult groups were breeding in irrigated areas of the Central Sahara in **Algeria** that were treated, and isolated adults were seen in northeast **Morocco**.

Central Region. During September, scattered adults were present and breeding in the interior of **Sudan** and western **Eritrea**. As breeding conditions were favourable over a widespread area, more adults may be present than indicated by survey results. This should become evident once vegetation dries out and adults form groups. The first signs of this appeared in eastern Sudan at the end of the month when an increasing number of adult groups and at least one swarm formed and were treated. More groups and small swarms are expected during October, mainly west of the Red Sea Hills, and some of these will move towards the winter breeding areas on the Red Sea coast of Sudan and southeast **Egypt**. No locusts were seen in **Saudi Arabia** and the situation remained unclear in **Yemen** with reports of breeding on the coast and a swarm in the highlands. As good rains fell on the Red Sea coast in both countries, small-scale breeding is expected to occur that will cause locust numbers to increase gradually. Local breeding continued in northeast **Ethiopia** where numerous small hopper bands formed and were treated. A few small swarms could form and move towards northern **Somalia**. No locusts were reported in **Oman**.

The FAO Desert Locust Bulletin is issued every month by the Desert Locust Information Service, AGP Division (Rome, Italy). It is supplemented by Alerts and Updates during periods of increased Desert Locust activity. All products are distributed by e-mail and are available on the Internet.

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

Facsimile: +39 06 570 55271

E-mail: eclo@fao.org

Internet: www.fao.org/ag/locusts

Facebook: www.facebook.com/faolocust

Twitter: twitter.com/faolocust



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Eastern Region. The situation remained calm in September with only scattered adults present in a few places along both sides of the **Indo-Pakistan** border. Small-scale breeding may have occurred but locust numbers did not increase significantly. The southwest monsoon withdrew from the area after mid-month. No significant developments are likely.



Weather & Ecological Conditions in September 2014

Ecological conditions remained favourable in the summer breeding of the Sahel in West Africa and Sudan. Good rains fell along parts of the Red Sea coast. Monsoon rains ended in the Indo-Pakistan summer breeding areas.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) was further north than usual over Mali, Niger and Chad, reaching the Algerian border, the northern Air Mountains in Niger and just south of Fada in northeast Chad during the first decade of September. Thereafter, it retreated southwards. In Mauritania, the ITCZ was located south of 18N, which is about normal. Consequently, good rains fell throughout most of the summer breeding areas in southern Mauritania, northeast Mali, northern Niger and Chad where conditions remained favourable for breeding. Good rains also fell in northwest Mauritania that should allow vegetation to become green. In Northwest Africa, ecological conditions continued to remain favourable for locust survival on a limited scale in the Ziz-Ghris Valley south of the Atlas Mountains.

In the **Central Region**, the Inter-Tropical Convergence Zone (ITCZ) was at its most northerly position over Sudan during the first decade of September, having reached Abu Uruq and Atbara. Thereafter, it retreated steadily southwards, reaching El Obeid by the end of the month. Consequently, good rains fell south of the ITCZ in the summer breeding areas from North Darfur to the western lowlands of Eritrea in early September but declined after mid-month. Good rains also fell along the western side of the Red Sea Hills in Sudan as well as in the highlands

of Eritrea that may run off onto the Red Sea coast. Heavier showers fell in the northern highlands of Ethiopia. Good rains fell along the Red Sea coastal plains from Lith, Saudi Arabia to Mocca, Yemen that should cause vegetation to become green in winter breeding areas. Light showers fell in the interior of Yemen in Wadi Hadhramaut and Shabwah. In the Horn of Africa, good rains fell in eastern Ethiopia and in adjacent areas of the plateau and escarpment in northwest Somalia. As a result, breeding conditions are likely to be favourable in Ethiopia and should improve in northern Somalia.

In the **Eastern Region**, good rains associated with the monsoon fell in parts of the summer areas along both sides of the Indo-Pakistan border, namely Tharparkar and eastern Rajasthan, during the first decade of September. No significant rain fell after mid-month, indicating that the monsoon had withdrawn from the Indo-Pakistan summer breeding areas. Green vegetation was present in eastern Rajasthan and parts of Cholistan and Tharparkar. Vegetation was drier in western Rajasthan except to the north of Jaisalmer.



Area Treated

Algeria	41 ha (September)
Ethiopia	134 ha (September)
Sudan	2,430 ha (September)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During September, isolated solitarious immature and mature adults were present in the south mainly to the north of Aioun El Atrous (1639N/0936W) and northeast of Tamchekket (1714N/1040W), in the western part of the country north of Boutilimit (1732N/1441W), Magta Lahjar (1730N/1305W), and near the Senegal River southeast of Rkiz (1658N/1514W). Small-scale breeding occurred east of Aguilal Faye (1827N/1444W) where isolated solitarious hoppers of all instars but mainly second instar were present.

• FORECAST

Small-scale breeding is likely to continue during October in the south. As vegetation dries out, small groups may form in some places. Locust numbers are

expected to increase in the west and northwest as adults arrive from the south and breeding occurs.

Mali

• SITUATION

During September, local scouts reported that small-scale breeding occurred in the Adrar des Iforas where solitary hoppers of all instars were seen in W. Tahalt northwest of Kidal (1827N/0125E) and in the far northwest of the country south of Taoudenni (2240N/0358W) in the Marcouba area. Due to insecurity, surveys could not be conducted in either area to confirm these reports.

• FORECAST

Small-scale breeding is likely to be in progress and will continue in parts of Timetrine, Tilemsi Valley, the Adrar des Iforas, and Tamesna, causing locust numbers to increase. As vegetation dries out, small groups are expected to form in some places.

Niger

• SITUATION

During September, isolated immature and mature solitary adults were present in a few places of central Tamesna between In Abangharit (1754N/0559E) and Tassara (1650N/0550E). Isolated mature adults were seen in the Termit area north of Tasker (1507N/1041E) as well as north of Filingué (1421N/0319E) in the southwest.

• FORECAST

Small-scale breeding is likely to continue in southern and central Tamesna, in the Termit and Filingué areas, and perhaps in parts of the Air Mountains, causing locust numbers to increase. As vegetation dries, small groups are likely to form in some places.

Chad

• SITUATION

During September, scattered immature adults were present in northeast Kanem near Salal (1448N/1712E) and northeast of Mao (1406N/1511E) while scattered mature adults were seen in the northeast between Kalait (1550N/2054E) and Fada (1714N/2132E). A few third instar solitary hoppers were reported in southeast Kanem to the northeast of Moussoro (1338N/1629E).

• FORECAST

Small-scale breeding is likely to continue in the northern Sahel and in the northeast, causing locust numbers to increase. As vegetation dries, small groups are likely to form in both places.

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, small groups of adults were seen laying eggs near irrigated areas in the Adrar (2753N/0017W) area in the Central Sahara. Ground teams treated 41 ha. No locusts were seen in the south near the borders of Mali and Niger.

• FORECAST

Local infestations are likely to persist in the Adrar area with hatching and perhaps the formation of small groups. Scattered adults may appear in the extreme south as well as east of Tindouf, and breed on a small scale in areas of recent rainfall.

Morocco

• SITUATION

During September, isolated immature solitary adults were seen during the second decade in the northeast near Bouarfa (3232N/0159W).

• FORECAST

No significant developments are likely.

Libya

• SITUATION

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

• FORECAST

No significant developments are likely.

Tunisia

• SITUATION

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

• FORECAST

No significant developments are likely.

CENTRAL REGION

Sudan

• SITUATION

During September, scattered immature and mature



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solitary adults were present at densities of less than 500 adults/ha in North Kordofan and White Nile states between Sodiri (1423N/2906E), Abu Uruq (1554N/3027E) and the Nile Valley, in W. Muqaddam of the Baiyuda Desert northwest of Khartoum, in the Nile Valley north of Dongola (1910N/3027E) and near Shendi (1641N/3322E), along the Atbara River, and near Kassala (1527N/3623E). Small-scale breeding was detected near Kassala where scattered solitary hoppers of all instars were present. Immature and mature adults formed groups at densities up to 1,500 adults/ha in both areas, and laying was reported. At the end of the month, a mature swarm was seen and an increasing number of adult groups were forming. Control operations treated 2,430 ha of which 1,000 ha were by air.

• **FORECAST**

There is a moderate risk that the situation will deteriorate as vegetation dries out in the summer breeding areas and an increasing number of groups, bands and swarm may form, mainly in the Baiyuda Desert and between the Nile Valley and the Red Sea Hills. By the end of the forecast period, adult groups and perhaps a few small swarms are likely to appear in Wadi Diib and on the Red Sea coast.

Eritrea

• **SITUATION**

During August, a few isolated solitary adults were present on the Red Sea coast near Sheib (1551N/3903E).

During September, fourth instar solitary hoppers and scattered mature solitary adults were present in the western lowlands near Kerkebet (1618N/3724E) and Wadi Barka.

• **FORECAST**

Small-scale breeding may continue in parts of the western lowlands during October but should decline by the end of the forecast period.

Ethiopia

• **SITUATION**

During September, breeding continued in the northern Awash Valley near Mile (1123N/4052E) where 121 second instar hopper groups and bands up to 5,000 m² in size as well as fledglings and one immature adult group were present. Ground teams treated 134 ha. The immature swarm reported on 5

August in Bulletin 431 was incorrect as no swarms were seen in the Jijiga area during August.

• **FORECAST**

As vegetation dries out, breeding should end in the northern Awash Valley. Any hoppers that escape control operations may form small adult groups or swarmlets that could spread into adjacent highland areas or move southeast towards Dire Dawa.

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 September.

• **FORECAST**

There is a low risk that a few small groups and swarmlets from northeast Ethiopia could appear in areas of recent rainfall on the plateau and escarpment where isolated adults may already be present.

Egypt

• **SITUATION**

During September, no locusts were seen on the Red Sea coast between Abu Ramad (2224N/3624E) and the Sudan border and along the shores of Lake Nasser near Garf Husein (2317N/3252E), Tushka (2247N/3126E) and Abu Simbel (2219N/3138E).

• **FORECAST**

By the end of the forecast period, adults and perhaps a few small groups or swarmlets may appear on the Red Sea coast in the southeast from adjacent areas in Sudan.

Saudi Arabia

• **SITUATION**

During September, no locusts were seen along the Red Sea coastal plains between Jizan (1656N/4233E) and Lith (2008N/4016E), and in the interior near Gassim (2621N/4358E).

• **FORECAST**

Scattered adults may be present and breeding on a small scale in areas of recent rainfall on the Red Sea coast between Lith and Jizan. Consequently, locust numbers could increase slightly.

Yemen

• **SITUATION**

The situation remained unclear in September due to insecurity and the absence of surveys. Breeding was in progress on the Red Sea coastal plains near Bajil (1458N/4314E) where scattered mid-instar

solitary hoppers were seen on the 11th. There was an unconfirmed report of an immature and mature swarm on the 18th south of Taiz (1335N/4401E) in the southern highlands.

- **FORECAST**

Locust numbers are expected to continue to increase on the Red Sea coast and, to a lesser extent, on the Gulf of Aden coast as a result of small-scale breeding. There is a risk that a few small groups could form in some areas.

Oman

- **SITUATION**

During September, no locusts were seen during surveys in the northern interior near Adam (2223N/5731E), on the Battinah coast near Jamma (2333N/5733E), in coastal and mountain areas west of Jamma, 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**

During September, no locusts were seen during surveys carried out on the southeast coast near Jask (2540N/5746E).

- **FORECAST**

No significant developments are likely.

Pakistan

- **SITUATION**

No reports were received during September.

- **FORECAST**

Breeding will come to an end in Cholistan and Tharparkar and no significant developments are likely.

India

- **SITUATION**

During September, no locusts were seen in Rajasthan except for two places between Bikaner (2801N/7322E) and the Pakistan border where isolated mature adults were present. No locusts were seen in Gujarat.

- **FORECAST**

Breeding will come to an end in Rajasthan and 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)
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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

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

- **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
- **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

2014 events. The following activities are scheduled or planned:

- **CRC.** 29th Session of the Commission, Abu Dhabi, UAE (23-27 November)
- **EMPRES/WR.** 13th EMPRES Liaison Officer Meeting, Ouagadougou, Burkina Faso (1-5 December)
- **EMPRES/WR.** 10th Steering Committee Meeting, Ouagadougou, Burkina Faso (8-9 December)
- **SWAC.** 50th Anniversary of the Commission, Tehran, Iran (15 December)
- **SWAC.** 29th Session of the Commission, Tehran, Iran (16-18 December)

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.

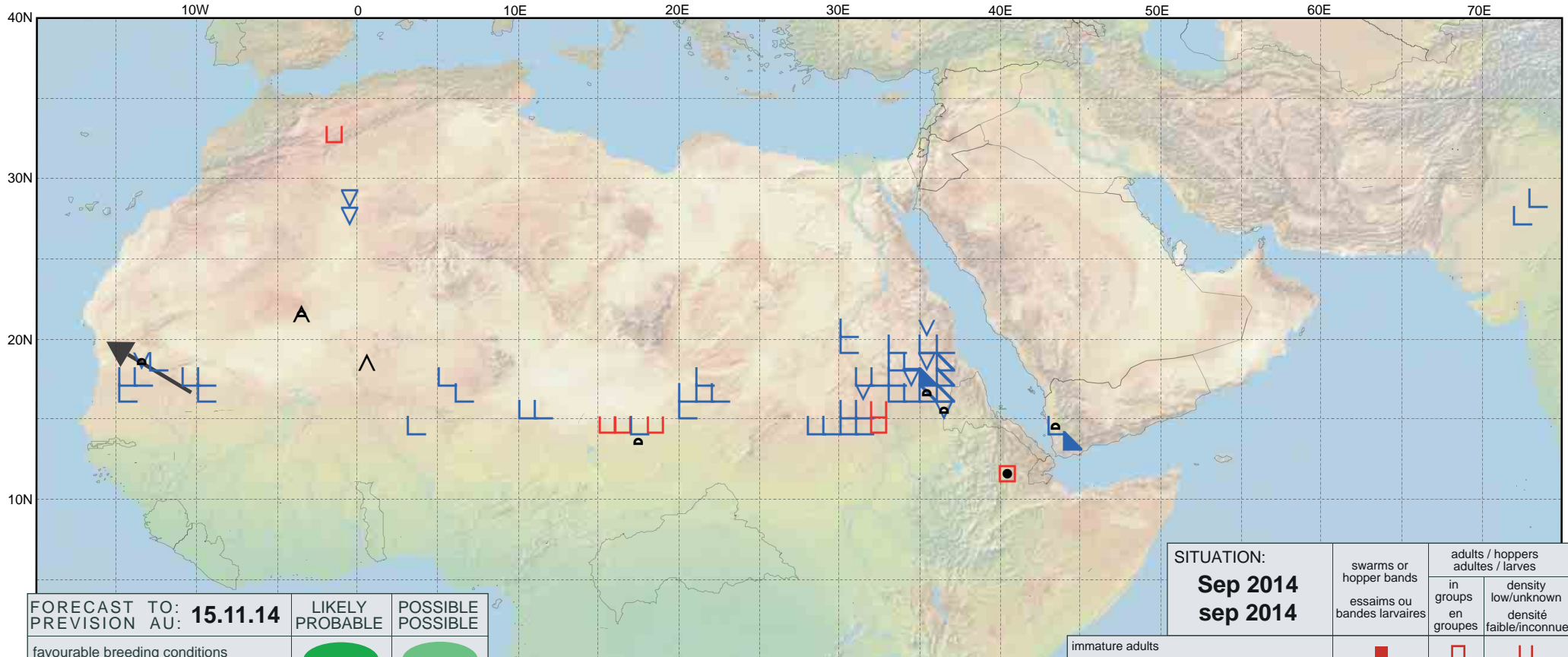


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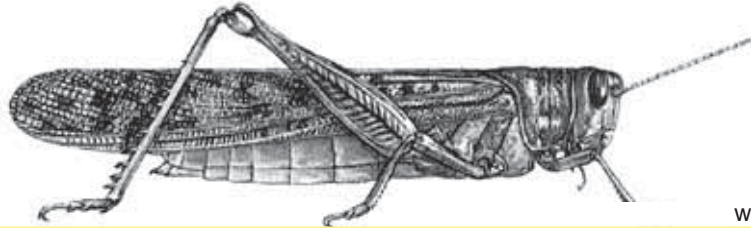
Desert Locust Summary

Criquet pèlerin - Situation résumée



FORECAST TO: PREVISION AU: 15.11.14	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 2014 sep 2014	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 October 2014
Forecast until mid-December 2014**

(4.11.2014)

An outbreak developed during October in Sudan where intensive aerial and ground control operations were mounted against hopper bands and adult groups. Some adults moved to winter breeding areas along the Red Sea coast where they laid eggs. A few adult groups appeared in southern Egypt and limited control operations were carried out along the Nile. Breeding commenced on the coast of Eritrea and southern Yemen while scattered adults were present along the Red Sea coast in Saudi Arabia and Yemen. Ground teams treated a few hopper bands and swarmlets that persisted in northeast Ethiopia. Although the situation was calm in the Western Region where small-scale breeding occurred in Mauritania, Niger and Chad, locust numbers may be increasing in western Mauritania. In South-West Asia, a few locusts persisted in the summer breeding areas along both sides of the Indo-Pakistan border. During the forecast period, strict vigilance is required along both sides of the Red Sea where locust numbers will increase in Egypt, Sudan, Eritrea, Saudi Arabia and Yemen.

Western Region. The situation remained calm in October. Although small-scale breeding occurred in western Mauritania, central Niger and in Chad, locust numbers remained low except in western Mauritania where they started to increase at the end of the month. In Northwest Africa, a few adults were seen in Morocco and central Algeria. During the forecast period, locust numbers will increase in west and

northwest Mauritania as a result of local breeding that could lead to the formation of small groups of hoppers and adults. Low numbers of adults will persist in parts of northern Mali, Niger and northeast Chad.

Central Region. A small outbreak developed during October in Sudan where hopper bands and adult groups formed in the summer breeding areas from north of Khartoum to the Red Sea Hills. Populations were starting to shift to the winter breeding areas where adults appeared in the northeast and on the Red Sea coast where they laid eggs. Ground and aerial teams were mobilized and treated 20,000 ha. Immature adult groups also appeared in southern Egypt and limited control operations were undertaken near Abu Simbel. More groups and perhaps a few small swarms are likely to form in November and move to the Red Sea coastal plains and subcoastal areas in Sudan and southeast Egypt where breeding will occur. Small-scale breeding started on the Red Sea coast in Eritrea where limited control operations were carried out. In northeast Ethiopia, control teams treated a few late instar hopper bands and small swarmlets that formed in areas of previous breeding. Low numbers of adults were present along parts of the Red Sea coast in Saudi Arabia and Yemen, and small-scale breeding was in progress on the Gulf of Aden coast. During the forecast period, breeding will cause locust numbers to increase along both sides of the Red Sea in Egypt, Sudan, Eritrea, Saudi Arabia and Yemen.

Eastern Region. The situation remained calm in October. Locust numbers declined along both sides of the Indo-Pakistan border as vegetation continued to dry out. No significant developments are likely.

The FAO Desert Locust Bulletin is issued every month by the Desert Locust Information Service, AGP Division (Rome, Italy). It is supplemented by Alerts and Updates during periods of increased Desert Locust activity. All products are distributed by e-mail and are available on the Internet.

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

Facsimile: +39 06 570 55271

E-mail: eclo@fao.org

Internet: www.fao.org/ag/locusts

Facebook: www.facebook.com/faolocust

Twitter: twitter.com/faolocust



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**Weather & Ecological Conditions in October 2014**

Rainfall ended at mid-month in the summer breeding areas of the Sahel in West Africa but continued in Sudan. Good rains fell along parts of the Red Sea coast where ecological conditions became favourable for breeding.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) continued its seasonal retreat southwards in the Sahel of West Africa and, after mid-month, it had moved well south of the summer breeding area. Consequently, rainfall declined throughout these areas from early October onwards and vegetation began to dry out rapidly. Nevertheless, ecological conditions remained favourable for breeding in a few limited areas, such as in parts of central and western Mauritania, and in southern Algerian along the Malian border near Timeiaouine.

In the **Central Region**, the Inter-Tropical Convergence Zone (ITCZ) remained stationary over central and northern Sudan and was located north of Sodiri and Khartoum, some 150-200 km further north than usual, during the first two decades of October. As a result, sporadic rains fell in parts of North Kordofan, River Nile and Kassala states. This slowed down the drying out of annual vegetation and allowed conditions to remain favourable for breeding. In the winter breeding areas, light rains began falling in early October on the Red Sea coast in southeast Egypt and on the plains from Port Sudan to Massawa, Eritrea. Rains continued during the second decade in southeast Egypt and extended to Wadi Diib in northeast Sudan. Light showers fell near the Sudan/Eritrea border while heavier rain occurred north of Massawa. Consequently, vegetation was becoming green and breeding conditions were favourable in many areas. On the eastern side of the Red Sea, moderate to heavy rains fell along the coast from north of Jizan in Saudi Arabia to the Gulf of Aden coast in southern Yemen during the first decade. Vegetation was already green along the Red Sea and Gulf of Aden coastal plains in Yemen from earlier rainfall during September and conditions were favourable for breeding.

**Area Treated**

Egypt	82 ha (October)
Eritrea	8 ha (October)
Ethiopia	63 ha (October)
Sudan	20,072 ha (October)

**Desert Locust Situation and Forecast***(see also the summary on page 1)***WESTERN REGION****Mauritania****• SITUATION**

During October, isolated solitarious adults were maturing in the south between Aioun El Atrous (1639N/0936W) and northeast of Tamchekket (1714N/1040W) and in the west between Boutilimit (1732N/1441W) and Akjoujt (1945N/1421W) and west of Tidjikja (1833N/1126W). Small-scale breeding was in progress in the Aguilal Faye (1827N/1444W) area where adults were seen laying eggs and a few isolated mid-instar solitarious hoppers were present. Locust numbers were increasing at the end of the month at one place in Aguilal Faye where up to 1,600 hoppers/ha were seen.

• FORECAST

Locust numbers are expected to increase in the west and northwest as the remainder of the adults arrive from the south and breed, especially if more rains fall. This could lead to the formation of small groups of hoppers and adults in parts of Trarza, Inchiri and southwest Adrar.

Mali**• SITUATION**

No surveys were conducted during October. However, reports continued to be received from local scouts that scattered mature solitarious adults mixed with hoppers of all instars were present in W. Tahalt in the Tilemsi Valley northwest of Kidal (1827N/0125E) and in the far northwest of the country south of Taoudenni (2240N/0358W) in the Marcouba area. Due to insecurity, surveys could not be conducted in either area to confirm these reports.

- **FORECAST**

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

Niger

- **SITUATION**

During October, small-scale breeding occurred in central areas between Tanout (1458N/0852E) and Termit Massif (1600N/1120E) where scattered solitary hoppers of all instars and immature and mature solitary adults were present. Small-scale breeding may have occurred in southern Tamesna but this could not be confirmed due to a lack of surveys. No locusts were seen in the southwest near Filingué (1421N/0319E).

- **FORECAST**

As vegetation dries, a few small groups may form during November in areas of previous breeding. Thereafter, locust numbers will decline.

Chad

- **SITUATION**

During October, low numbers of immature and mature solitary adults were scattered between Salal (1448N/1712E) in Kanem and Fada (1714N/2132E) in the northeast. Small-scale breeding occurred in a few places northeast of Beurkia (1523N/1800E) and near Fada where a few mid-instar hoppers were present.

- **FORECAST**

As vegetation dries, a few small groups may form in areas of previous breeding in November. Thereafter, locust numbers will decline.

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, scattered immature solitary adults were present near irrigated areas in the Adrar (2753N/0017W) area in the Central Sahara. No locusts were seen in the south near Tamanrasset (2250N/0528E) and along the border of Mali near Timeiaouine (2026N/0148E).

- **FORECAST**

Low numbers of locusts may persist near irrigated areas of Adrar. Scattered adults may be present and could persist in the extreme south along the border with Mali.

Morocco

- **SITUATION**

During October, no locusts were seen in the Draa Valley between Tata (2944N/0758W) and Tantan (2826N/1106W) except for an isolated mature solitary adult near the Algerian border at Ksar Chair (2908N/0758W).

- **FORECAST**

Low numbers of adults may appear in the extreme south of the Western Sahara and breed on a small scale if rainfall occurs.

Libya

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

Tunisia

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

CENTRAL REGION

Sudan

- **SITUATION**

During October, scattered immature and mature adults persisted parts of North Kordofan and White Nile states between Sodiri (1423N/2906E) and the Nile at Ed Dueim (1400N/3220E) and Khartoum (1533N/3235E), in the Baiyuda Desert, in the north near Dongola (1910N/3027E), along the Atbara River and in the east between Kassala (1527N/3623E) and Derudeb (1731N/3607E). Hopper bands of various instars formed in the Baiyuda Desert, along the Atbara River and near Haiya (1820N/3621E) while immature and mature adults formed groups near Kassala and, to a lesser extent in the Baiyuda Desert and near Abu Hamed (1932N/3320E). In the winter breeding areas, local breeding commenced in Wadi Oko/Diib



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north of Tomala (2002N/3551E) where second to fourth instar hoppers and an increasing number of immature and mature adults were present during the last week. At least one mature adult group appeared on the Red Sea coast and laid eggs south of Suakin (1906N/3719E). Control operations increased throughout the month, treating 20,072 ha of which 10,100 ha were by air. The mature swarm reported in Bulletin 432 (September) was confirmed to be a mistaken report of an adult group.

• **FORECAST**

An increasing number of groups, bands and swarms are expected to form, mainly in the Baiyuda Desert and between the Nile Valley and the Red Sea Hills in November. Adult groups and perhaps a few small swarms are likely to move east and northeast, and appear in Wadi Oko/Diib and on the Red Sea coast. Hatching is expected on the coast and in Wadi Oko/Diib.

Eritrea

• **SITUATION**

During October, breeding commenced on the Red Sea coast near Shelshela (1553N/3906E) where scattered mature solitarious adults were seen copulating. Ground teams treated 8 ha of medium density first and second instar *transiens* and gregarious hoppers.

• **FORECAST**

Breeding will continue in areas of recent rainfall on the Red Sea coastal plains between Massawa and Karora, causing locust numbers to increase.

Ethiopia

• **SITUATION**

During October, a few late instar hopper bands up to 1,500 m² in size formed in areas of previous breeding in the northern Awash Valley near Mile (1123N/4052E). Three immature swarmlets were reported in the same area. A few hopper bands were seen in a new area about 100 km to the northwest near Gane Geb (1230N/3947E). Ground control operations treated 63 ha.

• **FORECAST**

Locust infestations are expected to decline further in the northern Awash Valley and no further 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**

Low numbers of adults are expected to appear on the coastal plains in the northwest and breed on a small scale if rainfall occurs.

Egypt

• **SITUATION**

During October, several small groups of immature adults were seen on both sides of Lake Nasser near Abu Simbel (2219N/3138E). Ground teams treated 82 ha. No locusts were seen in the Garf Husein (2317N/3252E) area or on the Red Sea coastal plains between Berenice (2359N/3524E) and the Sudan border.

• **FORECAST**

Adult groups and perhaps a few small swarmlets from Sudan may appear on the Red Sea coast between Berenice and Halaib, mature quickly and lay eggs in areas of recent rainfall. Subsequent hatching will cause locust numbers to increase.

Saudi Arabia

• **SITUATION**

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

• **FORECAST**

Scattered adults may be present and breeding on a small scale in areas of recent rainfall on the Red Sea coast between Lith and Jizan. Consequently, locust numbers are expected to increase.

Yemen

• **SITUATION**

During October, scattered immature and mature adults were present on the northern Red Sea coast between Al Zuhrah (1541N/4300E) and Midi (1619N/4248E), and to a lesser extent on the central coast between Hodeidah (1450N/4258E) and Zabid (1410N/4318E). On the Gulf of Aden coast, scattered immature and mature adults were present and small-scale breeding was in progress near Am Rijja (1302N/4434E) and Zinjibar (1306N/4523E).

• **FORECAST**

Small-scale breeding will cause locust numbers to

increase on the Red Sea and Gulf of Aden coastal plains. There is a risk that a few small groups could form in some areas.

Oman

- SITUATION

During October, no locusts were seen during surveys in the northern interior near Nizwa (2255N/5731E) and Ibri (2314N/5630E) on in mountain areas west of Jamma (2333N/5733E) 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

During October, isolated mature solitary adults were present near Chabahar (2517N/6036E). No locusts were seen elsewhere during surveys carried out on the coast near Jask (2540N/5746E) and in the interior near Ghale Ganj (2731N/5752E) in the Jaz Murian Basin.

- FORECAST

No significant developments are likely.

Pakistan

- SITUATION

During September, scattered immature and mature solitary adults were present in Cholistan south of Bahawalpur (2924N/7147E) and along the India border.

During October, scattered mature solitary adults persisted in a few of the above-mentioned places.

- FORECAST

No significant developments are likely.

India

- SITUATION

During the first fortnight of October, isolated immature and mature solitary adults persisted at a few places to the west of Bikaner (2801N/7322E) near the Indira Gandhi Canal and the Pakistan border. No locusts were seen during the second fortnight.

- FORECAST

No significant developments are likely.

Afghanistan

- SITUATION

No reports received.

- FORECAST

No significant developments are likely.

Announcements

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- **MODIS.** Daily rainfall imagery in real time (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/index.html)
- **RFE.** Rainfall estimates every day, decade and month (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/index.html)



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- 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

- **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=P LjxRk5CAwvG_0iFvjZ5C2fLByF3jvhvHOx
- **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>)
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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
- **Current threats.** Sudan
- **Desert Locust risk map.** 4 November 2014

2014 events. The following activities are scheduled or planned:

- **CRC.** 29th Session of the Commission, Dubai, UAE (23-27 November)
- **EMPRES/WR.** 13th EMPRES Liaison Officer Meeting, Tunis, Tunisia (1-5 December)
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- **Pesticide Referee Group.** 10th meeting, Tunis, Tunisia (10-12 December)
- **SWAC.** 50th Anniversary of the Commission, Tehran, Iran (15 December)
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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.



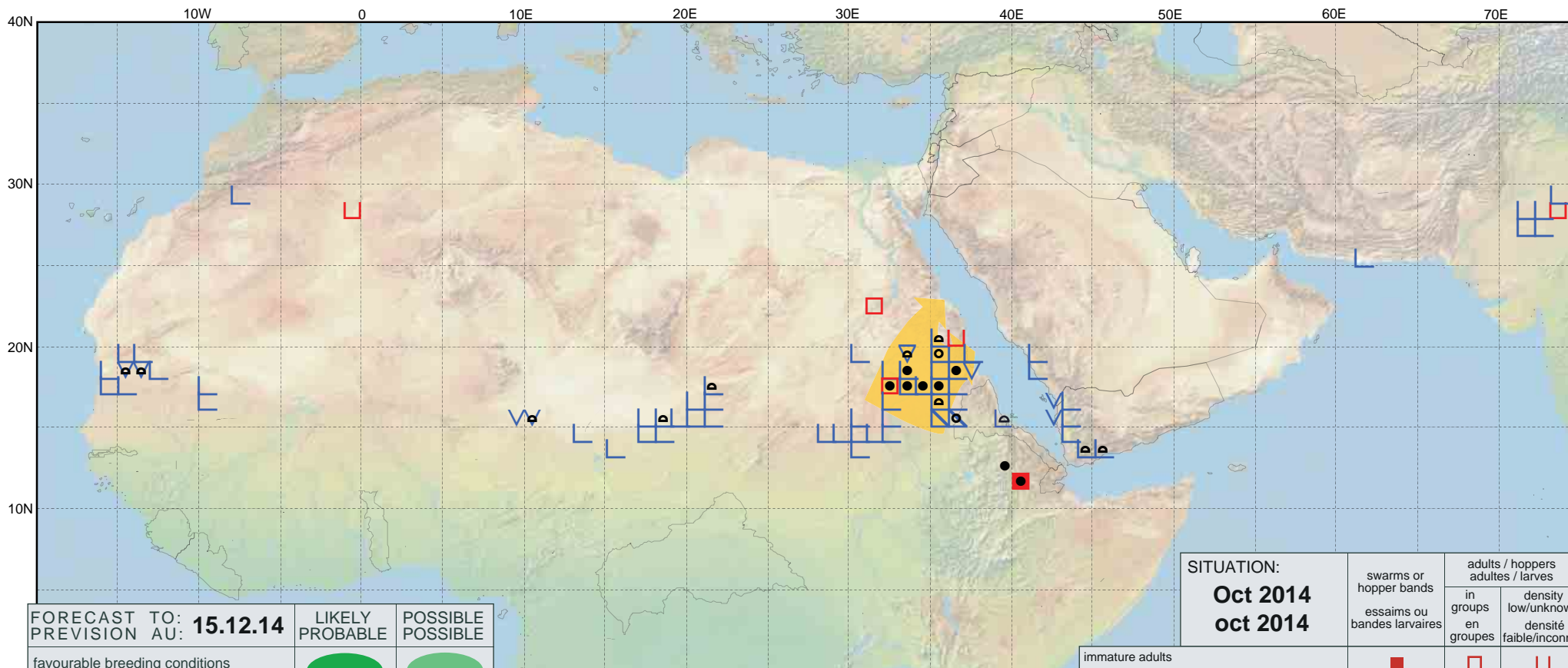
No. 433



Desert Locust Summary

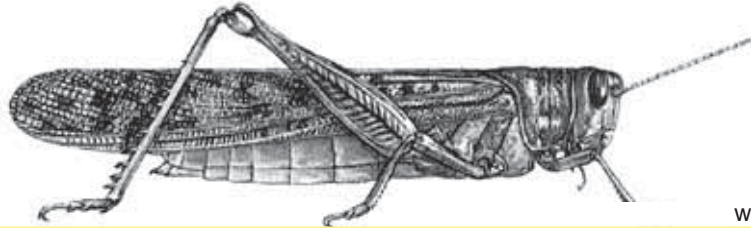
Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU:	15.12.14	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 2014 oct 2014	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. 434



**General Situation during November 2014
Forecast until mid-January 2015**

(3.12.2014)

An outbreak continued in Sudan during November as swarms formed in the summer breeding areas of the interior and moved to winter breeding areas on the Red Sea coastal plains and laid eggs. Another outbreak developed on the Red Sea coast of Eritrea where hoppers formed bands. Intensive control operations were underway in both countries. Scattered adults were present on the Red Sea coast in Saudi Arabia and Yemen. During the forecast period, breeding will cause locust numbers to increase along both sides of the Red Sea, particularly in Sudan and Eritrea where hatching and band formation are expected. Intensive survey and control operations will be required in both countries. Elsewhere, the situation remained calm.

Western Region. The situation remained calm in November. Local breeding occurred in **Niger** and western **Mauritania** but locust numbers remained low. Locusts may be present in northern **Mali** but this could not be confirmed in the absence of surveys due to insecurity. In Northwest Africa, unusually heavy rains fell in **Morocco**, the **Western Sahara** and in northern Mauritania that could eventually lead to good conditions for spring breeding.

Central Region. While the outbreak continued in **Sudan**, another outbreak developed on the Red Sea coast in **Eritrea**. As a result of good breeding, hoppers formed groups and bands on the central and northern coast, and ground teams treated nearly 7,000 ha in

November. In Sudan, intensive aerial and ground control operations continued in the summer breeding areas of the interior against hopper bands and swarms, treating 76,000 ha. Swarms that escaped control moved to the Red Sea coast and laid eggs by the end of November along a 250 km stretch and some 7,000 ha were treated. Although the outbreaks are currently confined to Sudan and Eritrea, there remains a risk that adult groups and a few small swarms may appear in southeast **Egypt** where so far only scattered adults and small-scale breeding have been reported. Scattered adults were also present on the Red Sea coast in **Saudi Arabia** and **Yemen**. Locust numbers will increase along both sides of the Red Sea, primarily in Sudan where hatching and band formation will occur in December and in Eritrea where a second generation of breeding is likely in January.

Eastern Region. The situation remained calm in November. Only isolated adults persisted in a few places of Rajasthan, **India**. No significant developments are likely.

The FAO Desert Locust Bulletin is issued every month by the Desert Locust Information Service, AGP Division (Rome, Italy). It is supplemented by Alerts and Updates during periods of increased Desert Locust activity. All products are distributed by e-mail and are available on the Internet.

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

Facsimile: +39 06 570 55271

E-mail: eclo@fao.org

Internet: www.fao.org/ag/locusts

Facebook: www.facebook.com/faolocust

Twitter: twitter.com/faolocust



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DESERT LOCUST BULLETIN



Weather & Ecological Conditions in November 2014

Good rains continued along both sides of the Red Sea coast where ecological conditions were favourable for breeding. Unusually heavy rains fell in Northwest Africa. Dry conditions prevailed in Southwest Asia.

In the **Western Region**, unusually heavy rains fell in Northwest Africa during the third decade of November. The rains extended from central areas of the Western Sahara to the Atlas Mountains in Morocco as well as adjacent areas of western Algeria and parts of northern Mauritania. Up to 100 mm was reported in some areas. The heaviest showers occurred along the coast, on the southern side of the Anti-Atlas Mountains and to the east of Tindouf, Algeria. Ecological conditions were favourable for breeding in the Draa Valley and in northeast Morocco near Bouarfa but were dry in the extreme south. In Algeria, conditions were favourable for breeding near Tamanrasset, Illizi and along the Malian border near Timeiaouine. In Libya, light showers fell during the first decade in the southwest near Ghat. Dry conditions prevailed in the northern Sahel of West Africa.

In the **Central Region**, good rains fell at times in the winter breeding areas along both sides of the Red Sea. During the second decade, good rains fell along the entire length of the Red Sea coast in Sudan as well as in Eritrea from Karora to Ghelaelo. Ecological conditions were favourable for breeding in both countries. In Saudi Arabia, good rains fell on the southern coast near Jizan during the first decade and on the central coast from Qunfidah to Yenbo during the second and third decades. Consequently, vegetation was becoming green and conditions were favourable for breeding in most areas. In southeast Egypt, moderate rainfall occurred at times on the Red Sea coast near Abu Ramad while heavier rains fell on 21-22 November. In the Horn of Africa, good rains fell during the third decade in the Harar Highlands of eastern Ethiopia as well as between Jijiga and Boroma, northern Somalia. Ecological conditions remained generally dry in winter breeding areas on the coast in northwest Somalia.



Area Treated

Eritrea	6,943 ha (November)
Sudan	82,977 ha (November)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During November, a few scattered mature solitary adults persisted north of Aioun El Atrous (1639N/0936W) in the south, and in the Aguilal Faye (1827N/1444W) area of the west. Local breeding was detected in the latter area where scattered first to fourth instar solitary hoppers were seen at one location.

• FORECAST

Scattered locusts are expected to persist in the Aguilal Faye area and may be present in the northwest. If additional rains fall, small-scale breeding will cause locust numbers to slightly increase in both areas. No significant developments are likely.

Mali

• SITUATION

No surveys were carried out and no locusts were reported during November. Nevertheless, local scouts indicated that scattered mature solitary adults previously seen in the Tilemsi Valley northwest of Kidal (1827N/0125E) were concentrating in vegetation that remained green.

• FORECAST

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

Niger

• SITUATION

During November, scattered immature and mature solitary adults were present in Tamesna between Tassara (1650N/0550E) and In Abangharit (1754N/0559E) and in central areas between Tanout (1458N/0852E) and Termit Massif (1600N/1120E). Small-scale breeding occurred in both areas

where third to fifth instar solitary hoppers were reported. No locusts were seen northeast of Zinder (1346N/0858E).

- **FORECAST**

Scattered adults may appear in parts of the southern Air Mountains where they are likely to persist in areas that remain green.

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, no locusts were seen during surveys carried out near Adrar (2753N/0017W) in the Central Sahara, Illizi (2630N/0825E) in the east, Tamanrasset (2250N/0528E) in the south and along the Malian border near Timeiaouine (2026N/0148E).

- **FORECAST**

Small-scale breeding could occur in favourable areas near Adrar, Illizi, Tamanrasset and Timeiaouine but low temperatures are expected to delay development.

Morocco

- **SITUATION**

During the third decade of November, a few isolated immature solitary adults were seen south of the Atlas Mountains near Guelmim (2859N/1003W).

- **FORECAST**

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

Libya

- **SITUATION**

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

- **FORECAST**

Low numbers of adults may appear in areas of recent rainfall in the southwest.

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 the first half of November, hopper bands continued to form in the summer breeding areas of the Baiyuda Desert, along the Atbara River and west of the Red Sea Hills near Haiya (1820N/3621E) while hopper groups formed near Kassala (1527N/3623E). By mid-month, nearly all the bands had fledged, forming dense immature groups and swarms that moved to winter breeding areas on the Red Sea coast. During the last week of the month, numerous immature groups and swarms appeared on the coastal plains between Bir Salalah (2034N/3701E) and Tokar (1827N/3741E) where they quickly matured and laid eggs. Adult groups also reached the southern coast and laid eggs near Aiterba (1753N/3819E) and the Eritrea border. Immature and mature solitary adults were scattered throughout all of these areas as well as along Wadi Oko/Diib in the northeast. So far, hopper bands of all instars have formed in one area near Port Sudan (1938N/3713E) from October breeding while a few solitary hoppers were seen on the coast south of Suakin (1906N/3719E) and in the Tokar Delta. During November, control teams treated 75,962 ha in the summer breeding areas of which 57,660 ha were by air. In the winter breeding areas, 7,015 ha were treated of which 6,000 ha were by air.

- **FORECAST**

Moderate to large-scale hatching will occur from early December onwards that will cause locust numbers to increase with hopper groups and bands forming on the Red Sea coast between Mohamed Qol to Karora. Fledging from earlier breeding will occur during December. Smaller scale breeding is likely in Wadi Oko/Diib. There is a risk of adult groups and swarms arriving on the southern coast from Eritrea.



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DESERT LOCUST BULLETIN

Eritrea

• SITUATION

During November, an outbreak developed on the central coast near Sheib (1551N/3903E) where medium to high densities of first and second instar gregarious hoppers were reported early in the month. Thereafter, an increasing number of hopper groups and bands of all instars formed in the nearby Akbanazouf Plain. Scattered mature adults were present and copulating until about mid-month in both areas as well as between Wekiro (1548N/3918E) and Massawa (1537N/3928E). On the northern coast, a few first to third instar hopper groups and bands, and groups of copulating adults were seen during the last week of the month near Karora (1745N/3820E) and immature adults were present near Mehimet (1723N/3833E). Control teams treated 6,943 ha during November.

• FORECAST

Breeding will cause locust numbers to increase in areas of recent rainfall on the Red Sea coastal plains between Massawa and Karora and is likely to extend to Ghelaelo. Hoppers are expected to form groups and small bands while adults will form groups and perhaps a few swarmlets. A second generation of breeding is likely to commence in January near Sheib, causing locust numbers to increase further.

Ethiopia

• SITUATION

In mid-November there was a report of a swarmlet in the Afar region of the northeast; otherwise, no surveys were carried out and no locusts were reported during the month.

• 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 a survey carried out on the plateau between Hargeisa (0931N/4402E) and Boroma (0956N/4313E), the escarpment and on the

northwest coast between ulhar (1023N/4425E) and the Djibouti border on 21-25 November.

• FORECAST

Low numbers of adults are expected to be present on the coastal plains in the northwest and will breed on a small scale if rainfall occurs. This would cause locust numbers to increase gradually.

Egypt

• SITUATION

During the first half of November, scattered immature and mature solitarious and *transiens* adults were seen in the Allaqi area (2245N/3344E) and on the eastern shore of Lake Nasser near the Sudan border. Low numbers of mature solitarious adults were seen during the last week on the Red Sea coast near Halaib (2213N/3638E) and in subcoastal areas southwest of Shalatyn. Small-scale breeding was underway in the latter area where first and second instar hoppers were present from egg-laying during the second week of November. No locusts were seen between Shalatyn (2308N/3535E) and Marsa Alam (2504N/3454E), near Tushka (2247N/3126E) and in the northwest near Siwa (2912N/2531E) and Salum (3131N/2509E).

• FORECAST

There is a moderate risk that adult groups and perhaps a few small swarmlets from Sudan may appear in early December on the Red Sea coast between Berenice and Halaib, mature quickly and lay eggs in areas of recent rainfall. Subsequent hatching will cause locust numbers to increase.

Saudi Arabia

• SITUATION

During November, an increasing number of scattered immature and mature solitarious adults were seen on the Red Sea coastal plains from Lith (2008N/4016E) to about 80 km south of Qunfidah (1909N/4107E). No locusts were seen elsewhere along the coast.

• FORECAST

Small-scale breeding will cause locust numbers to increase on the Red Sea coast primarily between Lith and Qunfidah but is likely to extend north to Yenbo and south to Jizan.

Yemen

• SITUATION

During November, low numbers of immature and mature solitarious adults were present on the northern Red Sea coast between Midi (1619N/4248E) and Al Zuhrah (1541N/4300E), and on the central coast from Bajil (1458N/4314E) to south of Hodeidah (1450N/4258E), and on the Gulf of Aden coast primarily northwest of Aden (1250N/4503E) and, to

a lesser extent, near Zinjibar (1306N/4523E). Small-scale breeding occurred near Am Rija (1302N/4434E).

- **FORECAST**

Small-scale breeding will cause locust numbers to increase on the Red Sea and Gulf of Aden coastal plains. There is a risk that a few small groups could form in some areas.

Oman

- **SITUATION**

During November, no locusts were seen during surveys on the northern Batinah coast, the Musandam Peninsula, in the northern interior near Adam (2223N/5731E), and in the extreme south near Maziuna (1750N/5239E) and the Yemen border.

- **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**

During November, no locusts were seen during surveys carried out on the coast near Jask (2540N/5746E).

- **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**

During the first fortnight of November, isolated immature and mature solitary adults persisted at a few places to the west of Bikaner (2801N/7322E) near the Indira Gandhi Canal and the Pakistan border. No locusts were seen during the second fortnight.

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

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

- **MODIS.** Vegetation imagery every 16 days (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/Regional/.MODIS/index.html)
- **MODIS.** Daily rainfall imagery in real time (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/index.html)
- **RFE.** Rainfall estimates every day, decade and month (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/index.html)
- **Greenness maps.** Dynamic maps of green vegetation evolution every decade (http://iridl.ldeo.columbia.edu/maproom/Food_Security/Locusts/Regional/greenness.html)



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- **Desert Locust risk map.** 4 November 2014
- **India National ToT report.** Publications – Reports – SWAC
- **Regional locust commissions.** Information

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- **SWAC.** 50th Anniversary of the Commission, Tehran (15 December)
- **SWAC.** 29th Session of the Commission, Tehran (16-18 December)
- **CRC.** Regional contingency planning workshop, Hurgada, Egypt (15-19 February)
- **CRC/SWAC.** 7th inter-regional workshop for Desert Locust Information Officers, Cairo (22-25 February)

A.K. Rai. It is with deep regret that we announce the death of A.K. Rai on 22 November. Mr. Rai was the former Deputy Director (Entomology) at the field headquarters of the Locust Warning Organization in Jodhpur, India. 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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DESERT LOCUST BULLETIN

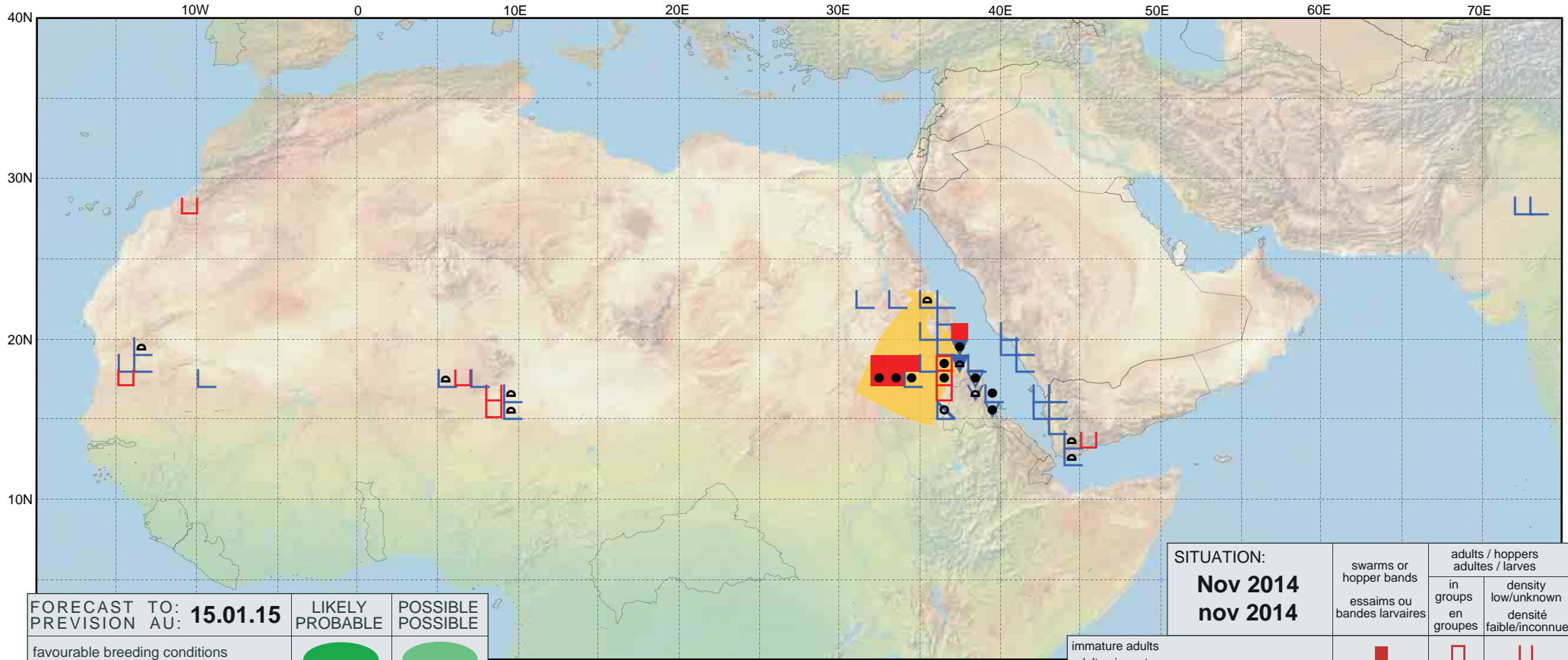
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Desert Locust Summary

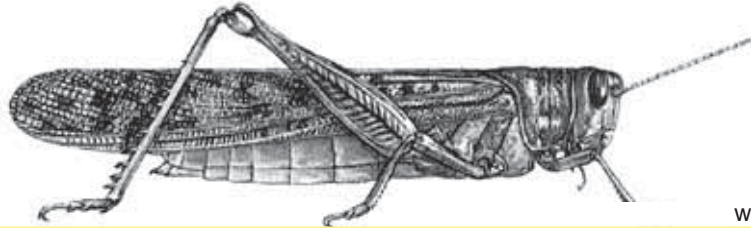
Criquet pèlerin - Situation résumée

434



FORECAST TO: PREVISION AU: 15.01.15	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: Nov 2014 nov 2014	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. 435



**General Situation during December 2014
Forecast until mid-February 2015**

(4.1.2015)

Desert Locust outbreaks were in progress on the Red Sea coast in Sudan and Eritrea where control operations continued against ongoing breeding during December. A local outbreak developed in Saudi Arabia where control operations were mounted against small hopper bands. Small-scale breeding occurred on the Red Sea and Gulf of Aden coast in Yemen. Elsewhere, the situation remained calm. During the forecast period, a second generation of breeding will cause locust numbers to increase and bands and perhaps small swarms to form in Sudan and Eritrea. Locust numbers will also increase in Saudi Arabia due to breeding but on a smaller scale.

Western Region. The situation remained calm in December. Very little rain fell and ecological conditions were mainly dry. A few scattered hoppers were present in western **Mauritania**. Low numbers of locusts might be present and could persist in parts of northern **Mali** and **Niger**. As temperatures warm up towards the end of the forecast period, low numbers of adults may appear south of the Atlas Mountains in **Morocco** and in parts of the Sahara in **Algeria** and southwest **Libya** where they could eventually breed on a small scale if rainfall occurs.

Central Region. Widespread hatching occurred during December on the Red Sea coast in **Sudan** that gave rise to hopper groups and bands. Ground and aerial control operations treated nearly 12,000 ha which was much less than in November. Fledging

will commence about mid-January and, thereafter, an increasing number of adult groups and swarms could form. If conditions remain favourable, there is a risk of another generation of breeding. In **Eritrea**, first-generation breeding continued on the coast where more hopper bands formed as well as adult groups and a few swarms. A second generation of breeding commenced at the end of December that will cause locust numbers to increase further with new hopper bands in January and swarms forming by mid-February. Ground teams treated 4,000 ha. In **Saudi Arabia**, a local outbreak developed near Mecca where hopper bands formed and aerial and ground operations treated 1,800 ha. Breeding will continue on the Red Sea coast, causing locust numbers to increase and hopper bands and perhaps a few swarmlets are likely to form. The situation remained calm in **Yemen** where small-scale breeding was in progress on the Red Sea and Gulf of Aden coast, and in southeast **Egypt** where few locusts were reported.

Eastern Region. The situation remained calm and no locusts were reported during December. Light rain that fell for the second consecutive month in the Jaz Murian Basin of southeast **Iran** may allow ecological conditions to become favourable in February. No significant developments are likely.

The FAO Desert Locust Bulletin is issued every month by the Desert Locust Information Service, AGP Division (Rome, Italy). It is supplemented by Alerts and Updates during periods of increased Desert Locust activity. All products are distributed by e-mail and are available on the Internet.

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

Facsimile: +39 06 570 55271

E-mail: eclo@fao.org

Internet: www.fao.org/ag/locusts

Facebook: www.facebook.com/faolocust

Twitter: twitter.com/faolocust



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Weather & Ecological Conditions in December 2014

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**, dry conditions persisted throughout most of the region during December. No significant rain fell and temperatures were low in most areas. Nevertheless, small areas of green vegetation were present in the Ziz-Ghris Valley on the southern side of the Atlas Mountains in Morocco, in central Algeria near Adrar and in Libya near Ghat in the southwest and near Al Haruj in the centre of the country. Apart from these exceptions, ecological conditions remained unfavourable for breeding.

In the **Central Region**, light rain fell in some parts of the winter breeding areas along both sides of the Red Sea. In Sudan, light showers fell during the first two decades of the month along the coast between Port Sudan and the Eritrean border where ecological conditions remained favourable for breeding. In Eritrea, green vegetation was present on the central Red Sea coast near Sheib, the Akbanazouf Plains, south of Embere, north of Mersa Gulbub and on the northern coastal plains between Mehimet and Karora, and in Wadi Karora. Vegetation was also green south of Massawa in the northern part of the Ghelaelo Peninsula. In Egypt, light to moderate rain fell early in the month on the Red Sea coast near Shalatyn and Abu Ramad, and vegetation was green. In Saudi Arabia, light rain fell along parts of the central and southern coast of the Red Sea at times and ecological conditions were favourable for breeding. In Yemen, light rains fell during the first decade along parts of the Red Sea coast. In Oman, light rain may have fallen near the central coast northeast of Marmul while vegetation continued to dry out in the north. No rain fell and mainly dry conditions prevailed in the Horn of Africa.

In the **Eastern Region**, light to moderate showers fell in the Jaz Murian Basin in the interior of southeast



Area Treated

Eritrea	4,070 ha (1-26 December)
Saudi Arabia	1,823 ha (December)
Sudan	11,951 ha (1-28 December)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During the first two decades of December, a few scattered solitarious hoppers of all instars were seen northeast of Aguilal Faye (1827N/1444W). No locusts were seen during the third decade in the north near Zouerate (2244N/1221W) and near Bir Moghreïn (2510N/1135W), and in northern Trarza.

• FORECAST

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

Mali

• SITUATION

Although surveys were not carried out and no locusts were reported during December, local scouts indicated that small-scale breeding might have occurred in the northern Adrar des Iforas near Tessalit (2011N/0102E) where first to third instar hoppers mixed with immature and mature solitarious adults were seen.

• FORECAST

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

Niger

• SITUATION

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

• 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 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 carried out near Adrar (2753N/0017W) in the Central Sahara, Illizi (2630N/0825E) in the east, and Tamanrasset (2250N/0528E) in the south.

• FORECAST

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

Morocco

• SITUATION

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

• FORECAST

Low numbers of adults may appear south of the Atlas Mountains in the Draa and Ziz-Ghris valleys at the end of the forecast period and eventually breed on a small scale once temperatures increase and if rainfall occurs.

Libya

• SITUATION

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

• FORECAST

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

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 the summer breeding area, immature adults formed a few groups in the Baiyuda Desert, mature adults formed groups and laid eggs along the Nile southwest of Abu Hamed (1932N/3320E), and scattered immature and mature solitarious adults were present along the Atbara River and between Kassala (1527N/3623E) and Derudeb (1731N/3607E) in early December.

In the winter breeding area, adult groups and swarms continued to mature and lay eggs on the Red Sea coast between Bir Salalah (2034N/3701E) and Tokar (1827N/3741E) during the first half of December. Hatching first started south of Suakin (1906N/3719E) in the first decade and then occurred elsewhere along the coast from north of Port Sudan (1938N/3713E) to Tokar. This was followed by hatching on the southern plains near Aiterba (1753N/3819E) and the Eritrea border during the second decade. Consequently, hoppers formed groups and small bands that, by the last week, had reached fourth instar near Suakin and third instar near Aiterba. Adult groups and a few swarms continued to lay eggs near Aiterba until the end of the month. Control operations treated 11,951 ha on 1-28 December of which 9,000 ha were by air. In the northeast subcoastal areas, scattered solitarious adults were maturing in Wadi Oko/Diib between Tomala (2002N/3551E) and the Egypt border.

• FORECAST

Fledging will commence on the central and southern coastal plains about mid-January; thereafter, an increasing number of immature adult groups and small swarms are likely to form. If conditions remain favourable, the swarms could mature and another generation of breeding might commence at the end of the forecast period.

Eritrea

• SITUATION

During December, first-generation breeding continued on the northern coast near Karora (1745N/3820E) and the Sudan border where laying and hatching occurred until mid-month, causing more



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hopper bands to form. On the central coast, first-generation hopper bands and adult groups formed as well as a few swarmlets. By the end of the month, a second generation of breeding had commenced and adults laid eggs in central coastal areas near Wekiro (1548N/3918E), Sheib (1551N/3903E), and the Akbanazouf Plains and on the northern coast near Mehimet (1723N/3833E) as well as on the plains to the south. A few swarms had formed and were laying eggs near Wekiro at the end the month. Control teams treated 4,070 ha on 1-26 December.

- **FORECAST**

Second generation breeding will cause locust numbers to increase on the Red Sea coastal plains between Massawa and Karora where hatching and band formation will occur in January with new adult groups and swarms forming by mid-February. Smaller infestations may extend to Ghelaelo.

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

- **FORECAST**

Low numbers of adults are likely to appear on the coastal plains in the northwest and breed on a small scale if rainfall occurs.

Egypt

- **SITUATION**

During December, scattered immature and mature solitarious adults were present in the Abra q area of the Red Sea Hills south of El Sheikh El Shazly (2412N/3438E) and along the eastern shore of Lake Nasser near Abu Simbel (2219N/3138E).

- **FORECAST**

Small-scale breeding will cause locust numbers to increase slightly in areas that receive rainfall on the Red Sea coast and subcoastal areas in the southeast.

Saudi Arabia

- **SITUATION**

During December, local breeding occurred in the foothills of the Asir Mountains north of Mecca (2125N/3949E) where adult groups were seen copulating and laying eggs from the 3rd onwards. Hatching took place during the second and third weeks and a few small hopper groups and bands formed and reached third instar by the 23rd. Solitarious adults were maturing on the central Red Sea coast southeast of Qunfidah (1909N/4107E) throughout the month and, by the last week, a few mature groups had formed and laid eggs. On the northern coast, immature solitarious adults were present near Yenbo (2405N/3802E). No locusts were seen on the southern plains near Jizan (1656N/4233E). Control operations treated 1,823 ha during December of which 1,200 ha were by air.

- **FORECAST**

Breeding will continue to cause locust numbers to increase on the Red Sea coast between Qunfidah and Yenbo where hatching will occur and groups of hoppers and adults, hopper bands and perhaps a few swarmlets are likely to form.

Yemen

- **SITUATION**

During December, low numbers of immature and mature solitarious adults persisted on the northern Red Sea coast between Midi (1619N/4248E) and Al Zuhrah (1541N/4300E), and on the central coast from Bajil (1458N/4314E) to south of Hodeidah (1450N/4258E), and on the Gulf of Aden coast primarily northwest of Aden (1250N/4503E). Small-scale breeding occurred on the northern Red Sea coast and Gulf of Aden coast where low densities of solitarious hoppers of all instars were present in a few places.

- **FORECAST**

Small-scale breeding will continue to cause locust numbers to increase slightly on the Red Sea and Gulf of Aden coastal plains.

Oman

- **SITUATION**

During December, no locusts were seen during surveys on the northern Batinah coast near Jamma (2333N/5733E) and Sohar (2421N/5644E), the Musandam Peninsula, and in the northern interior near Ibri (2314N/5630E).

- **FORECAST**

Low numbers of adults may appear in the spring breeding areas on the Batinah 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) and Chabahar (2517N/6036E) in December.

- **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 December.

- **FORECAST**

Isolated adults may appear in coastal areas of Baluchistan at the end of the forecast period.

India

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

Afghanistan

- **SITUATION**

No reports received.

- **FORECAST**

No significant developments are likely.

infestations to crops and appropriate actions are suggested for each level.

Locust reporting. During calm (green) periods, countries should report at least once/month and send RAMSES data with a brief interpretation. During caution (yellow), threat (orange) and danger (red) periods, often associated with locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent at least twice/week within 48 hours of the latest survey. Affected countries are also encouraged to prepare decadal bulletins summarizing the situation. All information should be sent by e-mail to the FAO/ECLD Desert Locust Information Service (eclod@fao.org). Information received by the end of the month will be included in the FAO Desert Locust Bulletin for the current month; otherwise, it will not appear until the following month. Reports should be sent even if no locusts were found or if no surveys were conducted.

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

- **MODIS.** Vegetation imagery every 16 days (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/Regional/.MODIS/index.html)
- **MODIS.** Daily rainfall imagery in real time (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/index.html)
- **RFE.** Rainfall estimates every day, decade and month (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/index.html)
- **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_0iFxfZ5C2fLByF3jvhHOx
- **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>)
- **FAOLOCUST Twitter.** The very latest updates are posted on Twitter (<http://www.twitter.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



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- **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

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, Cairo (22-25 February)

Cliff Ashall (24 February 1922 – 3 November 2014). Mr. Ashall completed his degree after war service in the Royal Engineers in West Africa and Burma. He then joined Desert Locust Survey (DLS) and served in Eastern Africa and Arabia. After DLCO-EA was established, he returned to the UK where he worked at the Anti-Locust Research Centre (ALRC) / Centre for Overseas Pest Research (COPR) until he retired. 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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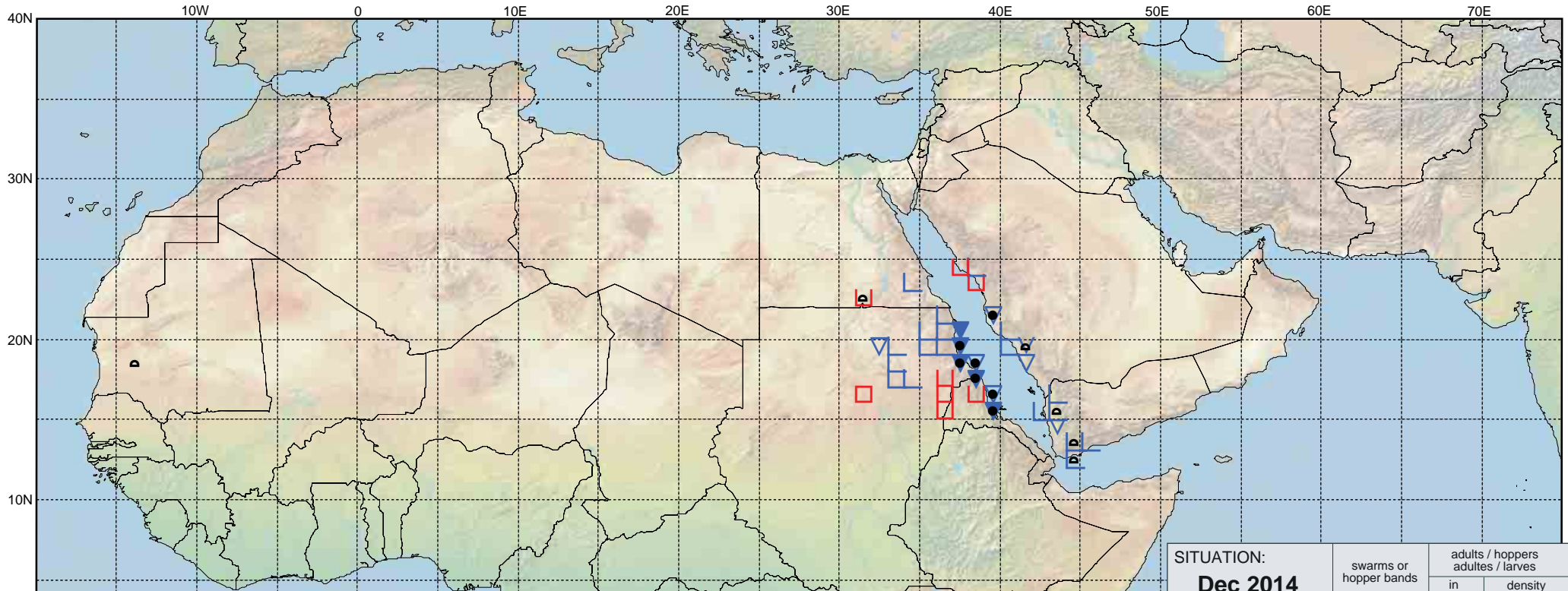
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Desert Locust Summary

Criquet pèlerin - Situation résumée



FORECAST TO: PREVISION AU:	15.02.15	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: Dec 2014 déc 2014	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)			