

warning level: **CAUTION**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 388



**General Situation during January 2011
Forecast until mid-March 2011**

(2 Feb 2011)

Desert Locust infestations increased during January in Sudan, Saudi Arabia and Mauritania as a result of continued breeding. Control operations were in progress against hopper groups and bands along the Red Sea coast in Sudan and Saudi Arabia, and a limited number of swarms were reported in both countries. In northwest Mauritania, control operations increased against locust groups and some infestations appeared in southern Morocco. During the forecast period, locust populations are expected to increase further and move to the spring breeding areas. If current infestations in Sudan and Saudi Arabia are not controlled, new adult groups and small swarms could form on the Red Sea coast and move to the interior of Saudi Arabia. Similarly, adults and small groups in northwest Mauritania and southern Morocco could move to the southern side of the Atlas Mountains in Morocco and Algeria. Breeding would occur in both areas once temperatures increase and spring rains commence. Therefore, all efforts should be made to control current infestations in order to reduce migration to the spring breeding areas.

Western Region. Small-scale breeding continued for a fourth consecutive month in northwest **Mauritania**, causing locusts to increase in number and form small groups. Ground control operations intensified, treating more than 14,000 ha during the first two decades of January. Some of the infestations extended into the southern portion of the Western Sahara in **Morocco** where limited control (55 ha) was

undertaken. Low numbers of adults were present in parts of the Sahara in **Algeria**. During the forecast period, small-scale breeding will continue in northwest Mauritania and is expected to extend to the north as well as to adjacent areas of southern Morocco. There is a moderate risk that some adults will move north to the spring breeding areas along the southern side of the Atlas Mountains in Morocco and Algeria and lay eggs with the onset of the spring rains. In West Africa, dry conditions prevailed in the northern Sahel of **Mali, Niger** and **Chad** where the situation is expected to remain calm.

Central Region. Hatching and band formation occurred in the winter breeding areas along the Red Sea coast in **Sudan** and **Saudi Arabia** during January. Several swarms were also reported in the same area. More than 7,000 ha were treated in Sudan, partially by air, and nearly 2,800 ha in Saudi Arabia. A small swarm and breeding were reported in adjacent areas of southeast Egypt where teams treated nearly 400 ha. In **Yemen**, small-scale breeding occurred on the Red Sea coast but locust numbers remained low and control was not required. During the forecast period, locust numbers will increase in Sudan and Saudi Arabia as hatching continues. Small groups and hopper bands are expected to form during February. This could lead to the formation of small adult groups and swarms in March that, if not controlled, are likely to move into the spring breeding areas in the interior of Saudi Arabia.

Eastern Region. Locust populations continued to decline in the summer breeding areas along both sides of the Indo-Pakistan border during January, and the situation had returned to normal. Very few adults were reported from the spring breeding areas in western **Pakistan**, indicating that control operations were successful in the summer breeding areas. During the forecast period, small-scale breeding is

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expected to occur in parts of Baluchistan, Pakistan and in adjacent areas of southeast Iran once spring rains commence. Locust numbers will increase slightly but remain below threatening levels.



Weather & Ecological Conditions in January 2011

Very little rain fell in the recession area during January. Nevertheless, ecological conditions remained favourable for breeding in northwest Mauritania and along both sides of the Red Sea.

In the **Western Region**, no significant rain fell during January. In Mauritania, ecological conditions remained favourable for locust survival and breeding in central and northern areas, primarily in the wadis in Adrar, Inchiri and Dakhlet Nouadhibou. By the end of the month, vegetation was starting to dry out in some places in Adrar. In Morocco, vegetation was drying out in the Western Sahara except for a few low-lying areas and wadis where ecological conditions remained favourable for breeding. Small areas of green vegetation also persisted south of the Atlas Mountains near the Algerian border in the Draa and Ziz-Ghris valleys. In Algeria, ecological conditions were favourable in the central Sahara near Bechar and on the edge of irrigated areas near Adrar, while vegetation was drying out in the western Sahara near Tindouf, in the south near Tamanrasset and in the east near Illizi. Mainly dry conditions persisted in the northern Sahel except in parts of northern Mali (Adrar des Iforas, Tamesna and Timetrine) and Niger (central Tamesna and southeastern Air Mountains) where vegetation is likely to be green in some wadis and low-lying areas.

In the **Central Region**, light rain fell at times in a few of the winter breeding areas along both sides of the Red Sea. In Saudi Arabia, light to moderate showers fell at times on the coast between Jeddah and Rabigh and near Lith. Heavy rains fell on the 26th in the Jeddah area, causing floods, and in the interior between Buraydah and Jubail. In Yemen, showers were reported on the northern coast near Suq Abs on the 19th. In Sudan, light rain fell on the central coast on the 7th and in the Tokar Delta on the 27th. Although

rainfall was poorer than usual, ecological conditions were favourable for small-scale breeding in the above-mentioned areas. Ecological conditions were also favourable in Wadi Oko/Diib and the coast in northeast Sudan and in adjacent areas of southeastern Egypt from December rains. Elsewhere in the Region, primarily dry conditions prevailed.

In the **Eastern Region**, no significant rain fell during January in the summer or spring breeding areas. Consequently, ecological conditions were not favourable for breeding.



Area Treated

Egypt	382 ha (9-19 January)
Mauritania	4,970 ha (December, revised) 14,045 ha (1-20 January)
Morocco	55 ha (January)
Saudi Arabia	2,795 ha (January)
Sudan	7,058 ha (January)
Yemen	1,450 ha (December, revised)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During January, locusts continued to increase in the northwest between the coast, Chinguetti (2027N/1221W) and the Moroccan border. Most of the infestations consisted of groups of immature and mature solitary and *transiens* adults mixed with hopper concentrations of all instars. Up to 4 hoppers/m² and 11,000 adults/ha were reported, and infested areas ranged from a few hectares up to 400 ha. Laying, hatching and fledging were in progress. Scattered immature and mature solitary adults were seen further north in Tiris-Zemmour between Zouerate (2244N/1221W) and Bir Moghreïn (2510N/1135W). Ground teams treated 14,045 ha on 1-20 January.

• FORECAST

Small-scale breeding will continue in parts of Inchiri, Adrar and Dakhlet Nouadhibou and is expected to be in progress in Tiris-Zemmour, causing locust numbers to increase further. Hoppers and adults are expected to concentrate in areas that remain green and form small groups. As temperatures increase, there is a moderate risk that some adults and small groups could move further north.

Mali

• SITUATION

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

• FORECAST

Low numbers of adults are likely to be present and will persist in parts of Tamesna, the Adrar des Iforas and Timetrine.

Niger

• SITUATION

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

• Forecast

Low numbers of adults are likely to be present in the central Tamesna but will decline as conditions dry out further and they move towards the Air Mountains.

Chad

• SITUATION

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

• FORECAST

No significant developments are likely.

Senegal

• SITUATION

No surveys were carried out and no locusts were reported 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, isolated immature and mature solitary adults increased slightly in the southern Sahara west of Tamanrasset (2250N/0528E), and persisted in the east near Djanet (2434N/0930E) and in the central Sahara near In Salah (2712N/0229E). Isolated mature adults were also seen at one place in the western Sahara east of Tindouf (2741N/0811W).

• FORECAST

Low numbers of locusts are likely to persist in parts of southern, central and eastern Sahara. Small-scale breeding could occur in some areas, causing locust numbers to increase slightly. Adults and small groups may appear in the spring breeding areas along the southern side of the Atlas Mountains in the west and lay eggs with the onset of the spring rains.

Morocco

• SITUATION

During January, a 200 m² group of mature adults at a density of 10 adults/m² was seen copulating on the Mauritanian border southeast of Bir Gandouz (2136N/1628W) on the 13th. Ground teams treated 5 ha on the 17th. Scattered immature solitary adults at densities up to 1,000 adults/ha were maturing near Tichla (2137N/1453W), and ground teams treated 50 ha at Guelbeddine (2155N/1441W) to the northeast of Tichla. On the southern side of the Atlas Mountains, mature solitary adults were present at El Foussi (2920N/0817W) and a few immature adults were seen in the Draa Valley south of Zagora (3019N/0550W) and Erfoud (3128N/0410W) near the Algerian border.

• FORECAST

Small-scale breeding in the southern part of the Western Sahara will cause locust numbers to increase. As vegetation dries out, locusts are likely to concentrate and may form small groups. Low numbers of adults may appear in the Draa Valley and breed on a small scale once temperatures warm up and rains occur. Adults and small groups arriving from Mauritania may augment locust numbers in these areas.

Libyan Arab Jamahiriya

• SITUATION

A late report indicated that no locusts were seen during surveys carried out in December near Nalut (3152N/1058E), Ghadames (3010N/0930E), Mizda (3127N/1259E) and Ghat (2459N/1011E).

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

• FORECAST

A few solitary adults may be present and could persist near Ghat. No significant developments are likely.

Tunisia

• SITUATION

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

• FORECAST

No significant developments are likely.



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CENTRAL REGION

Sudan

• SITUATION

During the first week of January in the northeast, adult groups laid eggs in Wadi Diib. Hatching and band formation continued throughout the month and hopper bands of all instars were present in W. Oko/Diib and on the northern coast near Bir Salalah (2034N/3701E). Immature and mature solitarious adults were also present in W. Oko/Diib as well as on the coast between Fodukwan (2145N/3644E) and the Egyptian border.

On the central coast, there were reports of a mature swarm laying eggs between Suakin (1906N/3719E) and Port Sudan (1938N/3713E) on 1, 16 and 18 January, and on the 7th near Eit (2009N/3706E).

Groups of immature and mature adults at densities up to 2,500 adults/ha were also present and egg laying occurred during the first half of the month. Solitarious hoppers, hopper groups and bands of all instars were also reported.

In the Tokar Delta, groups of late instar hoppers, fledglings and immature and mature solitarious and *transiens* adults were present at densities of up to 1,000 adults/ha. One hopper band was also reported. On the southern coast between Tokar Delta and the Eritrean border, scattered mature solitarious adults were seen at two places near Aiterba (1753N/3819E). Control teams treated 7,058 ha during January, of which 3,420 ha were by air.

• FORECAST

Locust numbers will increase on the central coast as hatching continues during the first week of February, leading to the formation of hopper groups and bands. Adults are expected to form small groups and a few swarms throughout the forecast period, mainly on the central coast and to a lesser extent in W. Oko/Diib and the Tokar Delta. Breeding may also continue in the Tokar Delta.

Eritrea

• SITUATION

A late report indicated that a few solitarious adults were seen near Afabet (1612N/3841E) and west of Tio (1441N/4057E) during surveys carried out on the Red Sea coast between Assab (1301N/4247E) and Nakfa (1640N/3828E).

No reports were received during January.

• FORECAST

Low numbers of adults are likely to be present along parts of the Red Sea coastal plains between Sheib and Karora. Small-scale breeding may occur in areas that receive rainfall or runoff, causing locust numbers to increase slightly but remain below threatening levels.

Ethiopia

• SITUATION

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

• FORECAST

No significant developments are likely.

Djibouti

• SITUATION

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

• FORECAST

No significant developments are likely.

Somalia

• SITUATION

Late reports indicated that surveys were not carried out and no locusts were reported in November and December.

No reports were received during January.

• FORECAST

Low numbers of adults are likely to appear in the northwest on the coast and breed on a small scale in areas that receive rainfall.

Egypt

• SITUATION

During January, isolated and scattered immature and mature solitarious adults were present on the Red Sea coast between Berenice (2359N/3524E) and the Sudanese border. A small swarm was seen copulating on the 11th on the coast between Shalatyn (2308N/3535E) and Abu Ramad (2224N/3624E). During the following week, groups of adults were copulating and laying eggs south of Shalatyn, and a few individual solitarious hoppers were also present. Ground teams treated 382 ha. No locusts were seen in Wadi Allaqi or between Abu Simbel (2219N/3138E) and Tushka (2247N/3126E).

• FORECAST

Hatching will occur during the first half of February on the Red Sea coast between Shalatyn and the Sudanese border, causing locust numbers to increase. Hoppers and adults are likely to concentrate and form small groups and perhaps a few small bands. Fledging is likely to commence by the end of February and a few small adult groups and swarms could form from early March onwards.

Saudi Arabia

• SITUATION

During January, hatching occurred on the central Red Sea coast near Lith (2008N/4016E) in the first week and again, to a lesser extent, in the last week. Hopper groups and bands formed, some at high densities, reaching the fourth instar stage by the end of January. Immature and mature adults, groups and a few swarms were seen in the same area during the second decade, and laying was reported. Further north, immature and mature adults, groups and a few swarms were seen between Thuwal (2215N/3906E) and Yenbo (2405N/3802E) from 15 to 20 January, and some laying was reported as well. Hatching occurred on the 29th near Rabigh (2247N/3901E). Ground teams treated 2,795 ha during January.

• FORECAST

Locust numbers may increase significantly on the Red Sea coast as hatching occurs near Lith and between Jeddah and Yenbo. Small groups and hopper bands will form during February. In March, small groups of adults and swarms will form that, if not controlled, are likely to move into the spring breeding areas of the interior if no further rains fall on the coast.

Yemen

• SITUATION

During January, small-scale breeding occurred on the central Red Sea coast north of Zabid (1410N/4318E) and on the northern coast between Al Zuhrah (1541N/4300E) and Suq Abs (1600N/4312E), giving rise to low numbers of solitary hoppers of all instars. Scattered immature and mature solitary adults were present in both areas as well as between Hodeidah (1450N/4258E) and Bajil (1458N/4314E) and in the north near Midi (1619N/4248E). Egg laying was seen at one place near Suq Abs on the 17th. No locusts were seen during surveys on the Gulf of Aden coast west of Aden (1250N/4503E).

• FORECAST

Small-scale breeding will continue on the Red Sea coast in areas of recent rainfall, causing locust numbers to increase gradually and form small groups.

Oman

• SITUATION

No locusts were seen during surveys carried out in the northern regions of Buraimi and Dakhliya and in the southern region of Dhofar during January.

• FORECAST

Low numbers of adults are likely to appear on the Batinah coast by the end of the forecast period and breed on a small scale if rainfall occurs.

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 southern coast near Bander-e Lengheh (2634N/5452E) and Jask (2540N/5746E) in January.

• FORECAST

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

Pakistan

• SITUATION

During the second half of December, isolated immature solitary adults persisted near Uthal (2548N/6637E).

No reports were received during January.

• Forecast

Low numbers of adults are likely to present in a few coastal and interior areas of Baluchistan where small-scale breeding will occur with the onset of the spring rains.

India

• SITUATION

No locusts were seen during surveys in Rajasthan in January.

• 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/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.

Google site. FAO DLIS has created a Google site (<https://sites.google.com/site/faodlis>) for national locust information officers to share problems, solutions and tips in using new technologies (eLocust2, eLocust2Mapper, RAMSES, remote sensing) and to make available the latest files for downloading. The site replaces the FAODLIS Google group, which will no longer be maintained. Interested users should contact Keith Cressman (keith.cressman@fao.org) for details.

MODIS imagery. Columbia University's International Research Institute for Climate and Society (IRI) provides 16-day 250-metre resolution MODIS imagery as well as daily and decadal rainfall imagery for monitoring breeding conditions in the Desert Locust recession area. These products can be downloaded

in different formats suitable for GIS at: http://iridl.ldeo.columbia.edu/maproom/Food_Security/Locusts/index.html. The site is available in English and French. Address comments and questions to Pietro Ceccato (pceccato@iri.columbia.edu).

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

- **Desert Locust situation updates.** Archives Section – Briefs
- **Desert Locust risk map update.** Archives Section – Risk maps
- **SWAC 27th session final report.** Publications Section – Reports
- **DLCC working papers.** Publications Section – Reports

2011 events. The following activities are scheduled or planned:

- **EMPRES/WR.** Desert Locust Information Officer workshop, Bamako, Mali (8-10 Feb)
- **DLCC.** 40th session, Cairo, Egypt (6-10 Mar)
- **SWAC.** Desert Locust joint survey in the spring breeding areas of Pakistan and Iran (1 Apr - 4 May)
- **CRC/SWAC.** Desert Locust Information Officer workshop, Cairo, Egypt (12-13 April)



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.



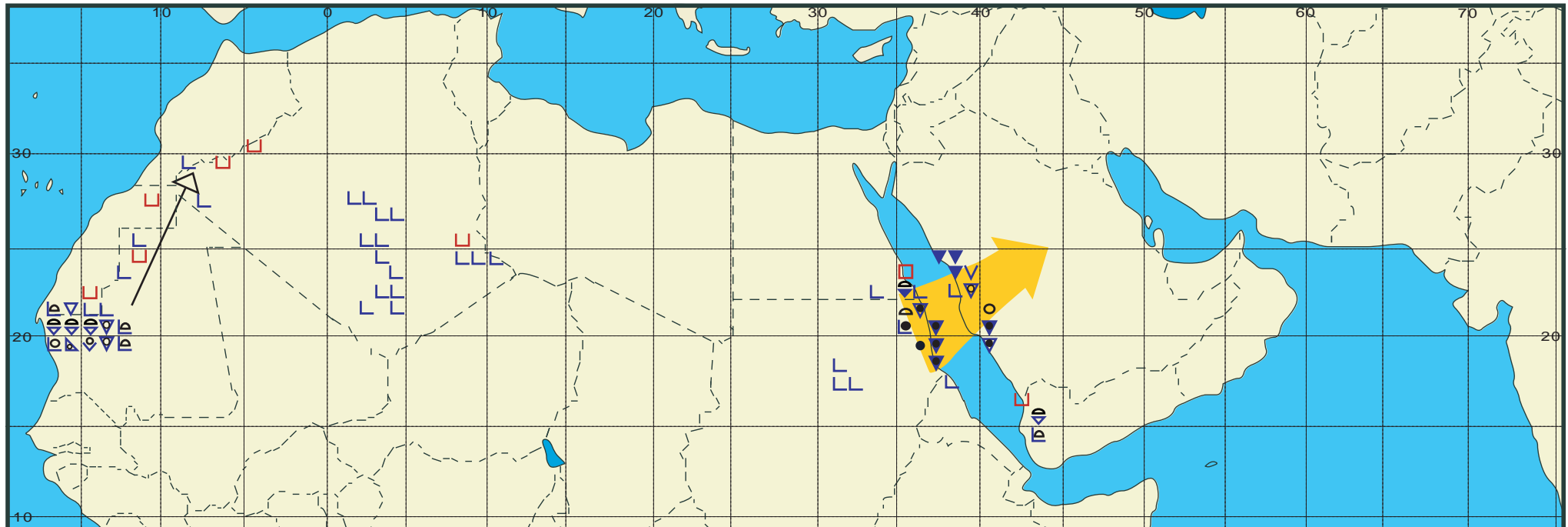
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Desert Locust Summary

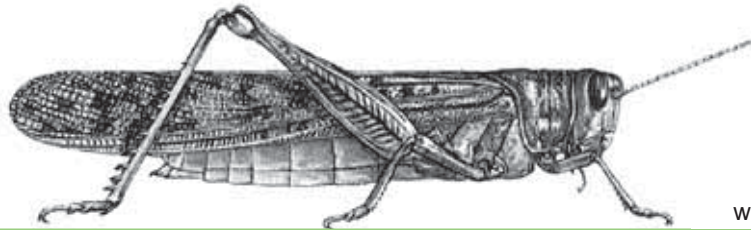
Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU: 15.03.11	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 2011 jan 2011	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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General Situation during February 2011
Forecast until mid-April 2011

(3 Mar 2011)

Desert Locust infestations persisted during February in Sudan, Saudi Arabia and Mauritania as a result of continued breeding. Control operations were carried out against hopper bands and swarms on the Red Sea coast in Sudan and Egypt, against hopper bands on the coast in Saudi Arabia, and against hopper and adult groups in Mauritania. Smaller scale operations were undertaken in southern Morocco and Algeria. If current infestations in Sudan and Saudi Arabia are not controlled, new adult groups and small swarms could form on the Red Sea coast and move to the interior of Saudi Arabia during March and April. Similarly, adults and small groups in northwest Mauritania and southern Morocco could move to the southern side of the Atlas Mountains in Morocco and Algeria. Breeding is expected to occur in both areas once temperatures increase and spring rains commence. Therefore, all efforts should be made to control current infestations in order to reduce migration to the spring breeding areas.

Western Region. Small-scale breeding continued for a fifth consecutive month in northwest Mauritania, causing hoppers and adults to form numerous small groups. Ground teams treated nearly 17,000 ha during February. Infestations and control operations started to decline by the last decade of the month. Small adult groups appeared and laid eggs along the border of the southern portion of the Western Sahara in Morocco, and limited control (43 ha) was undertaken. Low numbers of adults persisted in

parts of the Sahara in Algeria where ground teams treated small groups in one area (45 ha). Small-scale hatching will continue early in the forecast period in northwest Mauritania and adjacent areas of southern Morocco but infestations are expected to decline as vegetation dries out and control operations continue. Nevertheless, there remains a moderate risk that some adults will move north to the spring breeding areas along the southern side of the Atlas Mountains in Morocco and Algeria and lay eggs in March. In West Africa, dry conditions prevailed in the northern Sahel of Mali, Niger and Chad where the situation is expected to remain calm.

Central Region. Control operations continued during February in Sudan and, to a lesser extent, Egypt against groups of hoppers and adults, bands and swarms, which formed on the Red Sea coast and in subcoastal areas. In Saudi Arabia, hatching and hopper band formation continued on the Red Sea coast. Aerial and ground control operations were carried out in Sudan (9,845 ha) and Saudi Arabia (14,196 ha) while only ground control was undertaken in Egypt (265 ha). During the forecast period, adult groups and swarms will form that, if not controlled, are likely to move into the spring breeding areas in the interior of Saudi Arabia. The situation is less clear in Eritrea where locusts are likely to be present and concentrating in the few areas that remain green on the coast. No surveys could be carried out on the Red Sea coast of Yemen where small-scale breeding is almost certainly in progress.

Eastern Region. No locusts were reported in the Region during February. Ecological conditions are expected to improve in the spring breeding areas of southeast Iran and western Pakistan as a result of good rains that fell during the month. Consequently, small-scale breeding is likely to occur during the forecast period but locust numbers will remain low and non-threatening.

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 made available on the Internet.

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Weather & Ecological Conditions in February 2011

Although very little rain fell in the recession area during February, ecological conditions remained favourable for breeding in northwest Mauritania and along both sides of the Red Sea.

In the **Western Region**, no significant rain fell during February. Nevertheless, light rain fell at times in northwest Mauritania, causing ecological conditions to remain favourable for locust survival and breeding in Adrar, Inchiri and Dakhlet Nouadhibou. By the end of the month, vegetation was starting to dry out in some areas. In Morocco, vegetation was green in parts of the Adrar Settouf in the Western Sahara, and in the Draa and Ziz-Ghris valleys south of the Atlas Mountains. In Algeria, vegetation was drying out in nearly all areas of the Sahara except near irrigated crops in Adrar. Mainly dry conditions persisted in the northern Sahel except in parts of northern Mali (Adrar des Iforas, Tamesna and Timetrine) and Niger (central Tamesna and southeastern Air Mountains) where vegetation may be green in a few of the larger wadis and low-lying areas.

In the **Central Region**, no significant rain fell during February in the winter breeding areas. Consequently, vegetation was starting to dry out on the Red Sea coastal plains in Sudan and southeast Egypt but remained green in the Tokar Delta and between Port Sudan and Eit. In Egypt, green vegetation persisted in Wadi Diib and on the coast between Abu Ramad and the Sudanese border. In Saudi Arabia, ecological conditions remained favourable for breeding on the Red Sea coast between Yenbo and Qunf dah. In Yemen, vegetation was expected to be drying out on the Tihama coastal plains. Light to moderate rain fell in parts of the spring breeding areas of the interior of Saudi Arabia but vegetation remained dry west of Buraydah.

In the **Eastern Region**, light to moderate rain fell during the first half of February in parts of the spring breeding areas in western Pakistan near the coast and in the interior of Baluchistan, mainly near Turbat, Panjgur and Nushki. Good rains also fell in

the Jaz Murian Basin in southeast Iran. Consequently, ecological conditions will improve in both areas for small-scale breeding.



Area Treated

Algeria	45 ha (February)
Egypt	580 ha (January, revised) 265 ha (February)
Eritrea	200 ha (January)
Mauritania	19,450 ha (January, revised) 16,893 ha (February)
Morocco	43 ha (February)
Saudi Arabia	14,196 ha (February)
Sudan	9,845 ha (February)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During February, hoppers and adults formed small groups at densities up to 20 hoppers/m² and 10,000 adults/ha in the northwest regions of Inchiri, southwest Adrar and, to a lesser extent, Dakhlet Nouadhibou. Solitarious and *transiens* adults continued to lay eggs and hatchlings formed small patches at densities of up to 45 hoppers/m². Infestations and control operations started to decline by the last decade of the month. Ground teams treated 16,893 ha during February. Further north, scattered immature and mature solitarious adults were present in Tiris-Zemmour near Zouerate (2244N/1221W) and Bir Moghreïn (2510N/1135W). Some adults were seen copulating near Zouerate on the 15th.

• FORECAST

Hatching will continue during the first half of March in parts of Inchiri, Adrar, Dakhlet Nouadhibou and, to a lesser extent, near Zouerate, and hoppers and adults are likely to form small groups. Locust numbers should decline as vegetation dries out and control operations continue.

Mali

• SITUATION

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

• FORECAST

Low numbers of adults may be present and will persist in parts of Tamesna, the Adrar des Iforas and Timetrine.

Niger

• SITUATION

No reports were received during February.

• FORECAST

Low numbers of adults may be present and will persist in parts of the Air Mountains.

Chad

• SITUATION

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

• FORECAST

No significant developments are likely.

Senegal

• SITUATION

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

• FORECAST

No significant developments are likely.

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

• FORECAST

No significant developments are likely.

Algeria

• SITUATION

During February, mature solitary adults concentrated, formed small groups and were copulating near irrigated crops in the Adrar (2753N/0017W) area. Ground teams treated 45 ha. Scattered mature solitary adults were also present between Adrar, In Salah (2712N/0229E) and Tamanrasset (2250N/0528E), and west of Djanet (2434N/0930E). A few adults were seen copulating west of Tamanrasset.

• FORECAST

Small-scale breeding will cause locust numbers to increase slightly near Adrar and Tamanrasset. If spring rains fall, breeding will extend to other areas south of the Atlas Mountains; otherwise, locusts will concentrate in vegetation that remains green and form small groups.

Morocco

• SITUATION

During February, small groups of mature *transiens* adults, at densities up to 3,000 adults/ha, appeared in a few places in the extreme south of the Western Sahara along the Mauritanian border near Afuidich (2119N/1528W). Some adults were laying eggs. Ground teams treated 43 ha. Scattered immature and mature solitary and *transiens* adults were also present between the border, Tichla (2137N/1453W)

and Ma'Tallah (2223N/1502W). Further north, isolated mature solitary adults were present southwest of the Anti-Atlas Mountains near Guelmim (2859N/1003W). In the northeast, isolated mature solitary adults were present in a few places near the Algerian border between Figuig (3207N/0113W) and Erfoud (3128N/0410W). No locusts were seen in the Draa Valley.

• FORECAST

Small-scale breeding in the southern part of the Western Sahara will cause locust numbers to increase. As vegetation dries out, locusts are likely to concentrate and may form small groups. Low numbers of adults may appear in the Draa Valley and breed on a small scale once rains occur. Adults and small groups arriving from Mauritania may augment locust numbers in these areas.

Libyan Arab Jamahiriya

• SITUATION

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

• FORECAST

A few solitary adults may be present and could persist near Ghat. No significant developments are likely.

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, hopper groups and bands of all instars ranging in size from 10 m² to 5 ha were present on the central coast from Port Sudan (1938N/3713E) to south of Suakin (1906N/3719E). Groups of immature and mature adults at densities up to 5,000 adults/ha, some laying eggs, and a laying swarm on 9 February, were also seen in the same area. Immature and mature solitary adults and a few groups persisted in the Tokar Delta. During the second half of the month, six small immature and mature swarms, varying in size from 50 to 400 ha, were reported in Wadi Oko just north of Tomala (2002N/3551E). One



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swarm was seen laying eggs on the 25th. Further north, scattered immature and mature solitary and gregarious adults were present along Wadi Diib to Suf ya (2119N/3613E). No locusts were seen on the northern coast between Eit (2009N/3706E) and the Egyptian border, on the southern plains south of Tokar Delta, and on the western side of the Red Sea Hills between Tomala and Sinkat (1855N/3648E). During February, control teams treated 9,845 ha of which 5,950 ha were by air.

- **FORECAST**

Breeding will continue on the central coast (hatching in early March) and in Wadi Oko (hatching at mid-month). Low numbers of small hopper bands are expected to form in both areas that will f edge by mid-April (central coast) and late April (W. Oko). As vegetation dries out, locusts will concentrate and form groups, hopper bands and a few small swarms. There is a moderate risk that some groups and swarms will appear in Tokar Delta. Further breeding is unlikely to occur unless more rains fall.

Eritrea

- **SITUATION**

A late report indicated that solitary hoppers mixed with immature and mature solitary adults were present during the last week of January on the Red Sea coast near Mersa Gulbub (1633N/3908E). Ground control was undertaken on 200 ha.

Results are awaited from a survey carried out on the Red Sea coast in February.

- **FORECAST**

Small concentrations of hoppers and adults may be present on the central Red Sea coast but numbers will decline as vegetation dries out. No further breeding is expected unless more rain falls.

Ethiopia

- **SITUATION**

No reports were received during February.

- **FORECAST**

No significant developments are likely.

Djibouti

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

Somalia

- **SITUATION**

A late report stated that no surveys were carried out and no locusts were reported during January.

- **FORECAST**

No significant developments are likely.

Egypt

- **SITUATION**

During the last week of January and first three weeks of February, hatching occurred on the Red Sea coast south of Shalatein (2308N/3535E) between W. Ibib and W. Diib. Hoppers formed several dozen very small to medium sized high-density bands. A few very small medium to high density mature swarms were seen laying eggs. Ground teams treated 265 ha. Scattered immature and mature *transiens* adults were present in the El Shazly area in the Red Sea Hills west of Berenice (2359N/3524E). No locusts were seen near Abu Simbel (2219N/3138E).

- **FORECAST**

Hatching will continue during the first week of March on the Red Sea coast between Shalatein and Abu Ramad, causing locust numbers to increase. Hoppers will form small groups and bands. Fledging will continue throughout the forecast period, which could lead to the formation of small adult groups and perhaps a few small swarms.

Saudi Arabia

- **SITUATION**

During February, hatching and hopper band formation continued on the central Red Sea coast between Lith (2008N/4016E) and Qunf dah (1909N/4107E) and on the northern coast between Thuwal (2215N/3906E) and Yenbo (2405N/3802E). Most of the infestations consisted of late instar hopper bands and were confined to the coastal plains although some hoppers and bands were present in the adjacent Asir Mountains between Taif (2115N/4021E) and Al Baha (2001N/4129E), and near Khaybar (2542N/3917E). Scattered immature and mature solitary, *transiens* and gregarious adults were also present on the coast, forming small groups in some places. During the month, 54 survey and control teams and two aircraft treated 14,196 ha.

- **FORECAST**

Small groups of adults and swarms will form in March that, if not controlled, are likely to move into the spring breeding areas of the interior if no further rains fall on the coast.

Yemen

• SITUATION

No surveys were carried out during February.

• FORECAST

Small-scale breeding is almost certainly in progress on the Red Sea coast and is likely to continue if rains fall, causing locust numbers to increase gradually and form small groups.

Oman

• SITUATION

No locusts were seen during surveys carried out in the northern regions of Dhahera and Sharqiya during February. No locusts were reported elsewhere in the country.

• FORECAST

Low numbers of adults are likely to appear on the Batinah coast and perhaps in Sharqiya and Dhahera, and breed on a small scale if rainfall occurs.

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 southeast coast near Jask (2540N/5746E) and Chabahar (2517N/6036E) and in the western Jaz Murian Basin southeast of Kahnuj (2757N/5742E).

• FORECAST

Low numbers of adults are likely to appear in the Jaz Murian Basin and on the southeastern coastal plains. Small-scale breeding is likely to occur in areas of recent rainfall, especially in the Jaz Murian Basin between Kahnuj and Iranshahr.

Pakistan

• SITUATION

A late report indicated that no locusts were present during January.

During February, no surveys were carried out and no locusts were reported in the spring breeding areas in Baluchistan. There were unconfirmed reports of residual populations in previously infested areas in Ghotki district near the Indian border during the first fortnight of the month.

• Forecast

Low numbers of adults are likely to present in a few coastal and interior areas of Baluchistan where small-scale breeding will occur in areas of recent rainfall near Panjgur and Turbat.

India

• SITUATION

No locusts were seen during surveys in Rajasthan in February.

• FORECAST

No significant developments are likely.

Afghanistan

• SITUATION

No reports received.

• FORECAST

No significant developments are likely.



Announcements

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

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

Google site. FAO DLIS has created a Google site (<https://sites.google.com/site/faodlis>) for national locust information officers to share problems, solutions and tips in using new technologies (eLocust2,



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eLocust2Mapper, RAMSES, remote sensing) and to make available the latest files for downloading. The site replaces the FAODLIS Google group, which will no longer be maintained. Interested users should contact Keith Cressman (keith.cressman@fao.org) for details.

MODIS imagery. Columbia University's International Research Institute for Climate and Society (IRI) provides 16-day 250-metre resolution MODIS imagery as well as daily and decadal rainfall imagery for monitoring breeding conditions in the Desert Locust recession area. These products can be downloaded in different formats suitable for GIS at: http://iridl.ldeo.columbia.edu/maproom/Food_Security/Locusts/index.html. The site is available in English and French. Address comments and questions to Pietro Ceccato (pceccato@iri.columbia.edu).

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

- **Desert Locust situation updates.** Archives Section – Briefs
- **Desert Locust risk map update.** Archives Section – Risk maps
- **SWAC 27th session final report.** Publications Section – Reports
- **DLCC working papers.** Publications Section – Reports

2011 events. The following activities are scheduled or planned:

- **DLCC.** 40th session, Cairo, Egypt (postponed)
- **SWAC.** Desert Locust joint survey in the spring breeding areas of Pakistan and Iran (1 Apr - 4 May)
- **CLCPRO/EMPRES.** ULV Spraying and Environmental Monitoring workshop, Agadir, Morocco (4-12 April)
- **CRC/SWAC.** Desert Locust Information Offcer workshop, Cairo, Egypt (12-13 April)



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.



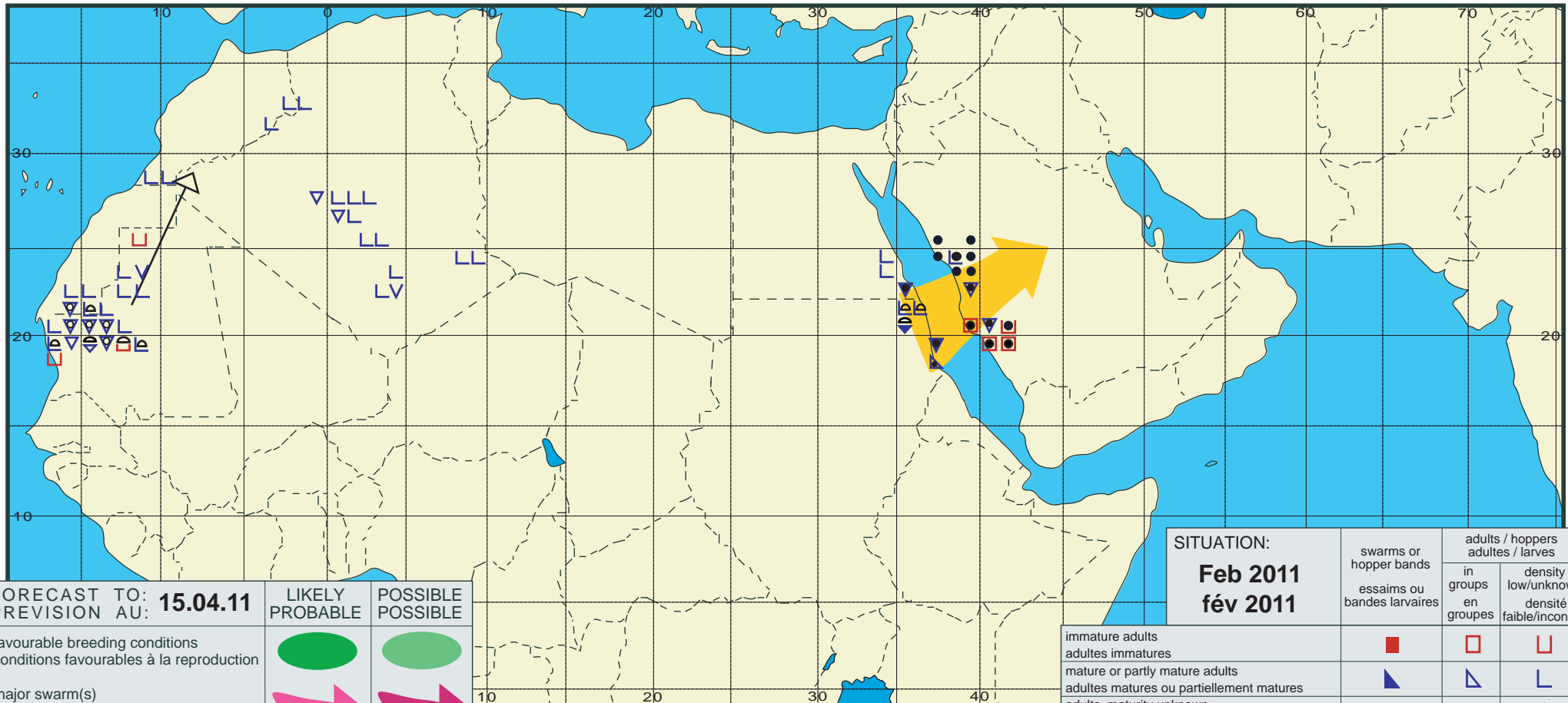
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Desert Locust Summary

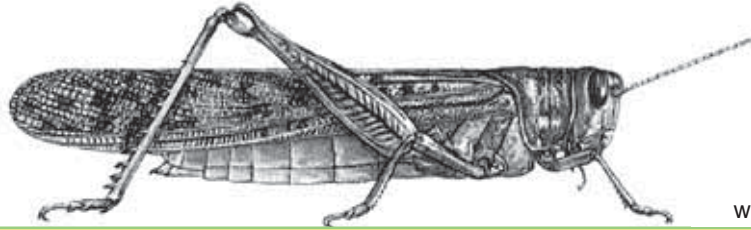
Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU: 15.04.11	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favorables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: Feb 2011 fév 2011	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 March 2011
Forecast until mid-May 2011**

(4 Apr 2011)

Desert Locust infestations persisted during March in Sudan, Saudi Arabia, Egypt and Mauritania as a result of continued breeding. Substantial aerial and ground control operations were undertaken against hopper bands and swarms on the Red Sea coast in Saudi Arabia. Control operations declined in Sudan, and northwest Mauritania, but increased in Egypt. Smaller scale operations took place in southern Morocco and Algeria. If the remaining infestations in Saudi Arabia are not controlled, new adult groups and small swarms could form on the coast and move into the interior during April. From early May onwards, there is an increased risk that locusts could cross the Red Sea to Sudan. In Northwest Africa, adults and small groups in northwest Mauritania and southern Morocco could move to the southern side of the Atlas Mountains in Morocco and Algeria and lay eggs. Therefore, all efforts should be made to control current infestations in order to reduce migration to the spring breeding areas.

Western Region. Locust infestations declined during March in northwest **Mauritania** even though small-scale breeding continued for a sixth consecutive month, and hoppers and adults formed small groups that were treated (4,768 ha). Small adult groups and two small swarms appeared in adjacent areas of southern Western Sahara in **Morocco** and laid eggs. Control teams treated 314 ha. Limited control operations (290 ha) were also carried out in the central Sahara of **Algeria** against adult groups. A

few adults were reported on the Tamesna Plains in northern **Niger**. During the forecast period, locust numbers are expected to continue to decline in Mauritania although limited hatching will occur in the northwest and in adjacent areas of Western Sahara. Locusts are likely to concentrate and form small groups in areas that remain green. There is a moderate risk that adults and small groups could move northwards to the southern side of the Atlas Mountains in Morocco and breed on a small scale.

Central Region. Aerial and ground control operations increased during March in **Saudi Arabia** where more than 30,000 ha of hopper bands and groups of hoppers and adults were treated on the central Red Sea coastal plains. Two small immature swarms formed and were treated in one area. Locust infestations declined on the Red Sea coast in **Sudan** due to on-going control operations (3,740 ha) against hopper bands and adult groups. Hatching continued on the southeast coast in **Egypt** and ground teams treated some 2,200 ha of hopper bands and groups of hoppers and adults. A few adults were seen in northern **Oman** and in crops on the Red Sea coast in **Yemen**. During the forecast period, small groups and swarms could form on the Red Sea coast in Saudi Arabia and move into the spring breeding areas of the interior of the country. There is an increased risk that a few groups or swarmlets could cross the Red Sea to Sudan from early May onwards.

Eastern Region. Low numbers of locusts appeared in the spring breeding areas in western **Pakistan** in early March. During the forecast period, small-scale breeding in areas of recent rainfall will cause locust numbers to increase slightly but remain low and below threatening levels. A similar situation is expected in adjacent areas of southeast **Iran**.

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 made available on the Internet.

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Weather & Ecological Conditions in March 2011

Very little rain fell in the recession area during March for the fifth consecutive month. Consequently, ecological conditions were becoming unfavourable for breeding in most areas.

In the **Western Region**, no significant rain fell during March. Nevertheless, ecological conditions remained favourable for locust breeding and survival in northwest Mauritania (Inchiri, southwest Adrar and Dakhlet Nouadhibou) but annual vegetation started to dry out due to high temperatures. Elsewhere in the northern Sahel, dry conditions persisted although there may be small areas of green vegetation in parts of northern Mali (Adrar des Iforas) and Niger (Tamesna and southeastern Air Mountains). In Morocco, annual vegetation dried out in the southern part of Western Sahara except in a few places near Tichla and the Mauritanian border where it remained green. South of the Atlas Mountains, green vegetation persisted near Guelmim and small areas remained green in the Draa and Ziz-Ghris valleys. In Algeria, ecological conditions were not favourable for breeding in the Sahara except in areas where vegetation remained green near irrigated perimeters in the Adrar region.

In the **Central Region**, good rains fell in mid-March along both sides of the Red Sea from Lith to Rabigh in Saudi Arabia, near Suakin in Sudan and between Mersa Gulbub and Tio in Eritrea. Light showers also fell at times in the spring breeding areas of the interior of Saudi Arabia near Riyadh. Vegetation was drying out on the Red Sea coast in Egypt between Shalatyn and the Sudanese border, although small areas of green vegetation persisted in some places near Halaib. Although light rain fell on the Red Sea coast in Yemen near Hodeidah, vegetation remained mostly dry except on the southern plains where small areas of green vegetation were present. Light rain fell from North Darfur, Sudan to Jebel Uweinat in southwestern Egypt in the third decade of March.

In the **Eastern Region**, light to moderate rains fell in parts of the spring breeding areas in western



Area Treated

Algeria	290 ha (March)
Egypt	2,228 ha (March)
Eritrea	720 ha (February)
Mauritania	4,768 ha (March)
Morocco	314 ha (March)
Saudi Arabia	20,701 ha (February, revised)
	28,960 ha (March)
Sudan	3,740 ha (March)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During March, locust infestations declined in the northwest regions of Inchiri, southwest Adrar and Dakhlet Nouadhibou. Infestations remained in the Taziazet area (ca 2050N/1530W), near Akjoujt (1945N/1421W), and southwest of Oujeff (2003N/1301W). Immature and mature solitarious and *transiens* adults and groups were present at densities up to 4,000 adults/ha. Small-scale breeding continued and solitarious and *transiens* hopper groups of all instars were seen at densities up to 80 hoppers/m². Hopper and adult densities were highest in Taziazet. Limited breeding also occurred near Ouadane (2056N/1137W). Ground teams treated 4,768 ha in March.

• FORECAST

Although limited hatching is likely to occur in early April near Taziazet and southwest of Oujeff, and additional fledging will occur throughout the forecast period, locust numbers are expected to decline further in Inchiri, Adrar and Dakhlet Nouadhibou. Locusts are likely to concentrate in vegetation that remains green and form small groups. Scattered adults may be present in the north near Bir Moghreïn.

Mali

• SITUATION

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

- **FORECAST**

Low numbers of adults may be present and will persist in parts of the Adrar des Iforas.

Niger

- **SITUATION**

A late report indicated that isolated immature solitarious adults were maturing at four places in the southern part of the Air Mountains during February. One hopper was seen east of Agadez (1700N/0756E).

During March, isolated solitarious adults were seen in the Tamesna 15 km west of In Abangharit (1754N/0559E) on the 18th.

- **FORECAST**

Isolated adults will persist in parts of Tamesna and the southeastern Air Mountains.

Chad

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

Senegal

- **SITUATION**

No surveys were carried out and no locusts were reported 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, groups of immature and mature solitarious and *transiens* adults were present in the central Sahara near irrigated crops south of Adrar (2753N/0017W). Copulating was in progress in most places. Ground teams treated 290 ha. No locusts were seen near Tamanrasset (2250N/0528E), Djanet (2434N/0930E), Illizi (2630N/0825E), Beni Abbes (3011N/0214W) and Tindouf (2741N/0811W).

- **FORECAST**

Small-scale breeding will cause locust numbers to increase slightly near Adrar. If spring rains fall, breeding will extend to other areas south of the Atlas Mountains; otherwise, locusts will concentrate in vegetation that remains green and form small groups.

Morocco

- **SITUATION**

During March, isolated immature solitarious adults were seen in the northeast between Erfoud (3128N/0410W) and Figuig (3207N/0113W) and a few mature solitarious adults were present near Guelmim (2859N/1003W). No locusts were seen in the Draa Valley.

In the Western Sahara, three small groups of mature *transiens* adults at densities up to 3 adults/m² appeared on the Mauritanian border and laid eggs during the first decade of March. Third instar hoppers were also present from earlier breeding. Two small mature swarms at densities up to 10 adults/m² were copulating near Tichla (2137N/1453W). During the last decade of the month, mainly late instar *transiens* hoppers at densities up to 4 hoppers/m² were seen at one place and isolated mature solitarious and *transiens* adults were present southwest of Tichla. Control teams treated 314 ha in March.

- **FORECAST**

Limited hatching may occur between Tichla and the Mauritanian border during the first week of April and adults will increase slightly as fledging occurs during the month. As vegetation dries out, locusts are likely to concentrate and may form small groups. Low numbers of adults may appear in the Draa Valley and breed on a small scale if rains occur. Adults and small groups arriving from Mauritania may augment locust numbers in these areas.

Libyan Arab Jamahiriya

- **SITUATION**

No reports were received during March.

- **FORECAST**

A few solitarious adults may be present and could persist near Ghat. No significant developments are likely.

Tunisia

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.



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CENTRAL REGION

Sudan

• SITUATION

During March, locust infestations declined on the Red Sea coast. Scattered immature solitary and gregarious adults at densities up to 350 adults/ha were seen at two places in Wadi Diib near the Egyptian border. Low to medium density hopper bands of all instars and groups of immature solitary and gregarious adults at densities up to 4,000 adults/ha were present on the coastal plains from Port Sudan (1938N/3713E) to south of Suakin (1906N/3719E). During March, control teams treated 3,740 ha of which 2,600 ha were by air. No locusts were seen in the Tokar Delta and on the southern coastal plains. In the River Nile State, scattered immature solitary adults were seen in two cropping areas along the Atbara River near Ed Damer (1734N/3358E) on the 7th.

• FORECAST

Locust numbers will decline on the Red Sea coast and in Wadi Diib due to control operations and drying vegetation. Scattered adults and perhaps a few small groups are likely to appear in a few areas along the Nile and Atbara rivers between Khartoum and Dongola. There is an increasing risk that a few groups or swarmlets could arrive from the eastern side of the Red Sea after early May.

Eritrea

• SITUATION

A late report indicated that first to fourth instar solitary hoppers and immature and mature solitary adults were present on the Red Sea coast near Mersa Gulbub (1633N/3908E) in February. Some of the hoppers formed medium density groups. Ground teams treated 720 ha. No locusts were seen on the northern plains between Mehimet (1723N/3833E) and Karora (1745N/3820E).

On 19-25 March, no locusts were seen during a survey on the Red Sea coast between Sheib (1551N/3903E) and Mersa Gulbub.

• FORECAST

Small concentrations of hoppers and adults may be present on the central Red Sea coast but numbers will decline as vegetation dries out. No significant developments are likely.

Ethiopia

• SITUATION

A late report indicated that no surveys were carried out and no locusts were reported during February. No surveys were carried out and no locusts were reported during March.

• FORECAST

No significant developments are likely.

Djibouti

• SITUATION

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

• FORECAST

No significant developments are likely.

Somalia

• SITUATION

A late report stated that no surveys were carried out and no locusts were reported during February. No locusts were reported in March.

• FORECAST

No significant developments are likely.

Egypt

• SITUATION

During the first week of March, hatching continued on the Red Sea coast between Shalatein (2308N/3535E) and Abu Ramad (2224N/3624E) where hopper groups and bands of all instars were already present and fledging. Immature solitary, *transiens* and gregarious adults and groups were reported in this area during the second half of the month. Ground teams treated 2,228 ha in March. No locusts were seen in the Allaqi area east of Lake Nasser.

• FORECAST

Hoppers and adults will continue to form small groups on the Red Sea coast between Shalatein and Abu Ramad. Fledging is expected to end in late April. Thereafter, locust numbers should decline as a result of control operations and drying conditions.

Saudi Arabia

• SITUATION

During March, aerial and ground control operations increased on the Red Sea coast between Qunfidah (1909N/4107E) and Yenbo (2405N/3802E) against mainly late instar hopper groups and bands, immature and mature solitary, *transiens* and gregarious adults and groups. Throughout the month, adult groups were copulating and laying eggs, and hatching and fledging occurred. On the 17th, a 1.5 km² immature swarm was seen moving from west to east on the coast near Yenbo. Ground and aerial teams treated 28,960 ha in March, mainly in the Lith

(2008N/4016E) area. No locusts were reported in the spring breeding areas of the interior.

• **FORECAST**

Hatching will continue on the Red Sea coast between Qunfidah and Yenbo until about mid-April, and hoppers will form groups and bands. Fledging will continue until early May, causing small groups of adults and swarms to form that, if not controlled, are likely to move into the spring breeding areas of the interior. There is an increased risk that a few groups or swarmlets could cross the Red Sea to northeast Africa from early May onwards.

Yemen

• **SITUATION**

During March, isolated mature solitary adults were present in crops at two places on the central Red Sea coast near Bajil (1458N/4314E). No locusts were seen elsewhere on the Red Sea coast between Bayt Al Faqih (1430N/4317E) and the Saudi Arabian border and on the Gulf of Aden coast west of Aden (1250N/4503E).

• **FORECAST**

Low numbers of adults will persist on the Red Sea coast and breed on a small scale if rainfall occurs during the forecast period.

Oman

• **SITUATION**

During March, scattered immature solitary adults were seen on the Batinah coast near Jamma (2333N/5733E). No locusts were reported elsewhere in the country.

• **FORECAST**

Low numbers of adults will persist on the Batinah coast and perhaps in Sharqiya and Dhahera. Small-scale breeding will occur if rains fall.

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 southeast coast near Jask (2540N/5746E) in March.

• **FORECAST**

Low numbers of adults are likely to appear in the Jaz Murian Basin and on the southeastern coastal plains and breed on a small scale in areas of recent rainfall.

Pakistan

• **SITUATION**

During March, low numbers of immature and mature solitary adults were present in Baluchistan near Panjgur (2658N/6406E) and mature solitary adults were seen on the coast west of Uthal (2548N/6637E).

• **FORECAST**

Small-scale breeding is likely to occur near Panjgur and in other coastal and interior areas where rains may have fallen recently. Consequently, locust numbers will increase slightly but remain below threatening levels.

India

• **SITUATION**

No locusts were seen during surveys in Rajasthan in March.

• **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



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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.

Google site. FAO DLIS has created a Google site (<https://sites.google.com/site/faodlis>) for national locust information officers to share problems, solutions and tips in using new technologies (eLocust2, eLocust2Mapper, RAMSES, remote sensing) and to make available the latest files for downloading. The site replaces the FAODLIS Google group, which will no longer be maintained. Interested users should contact Keith Cressman (keith.cressman@fao.org) for details.

MODIS imagery. Columbia University's International Research Institute for Climate and Society (IRI) provides 16-day 250-metre resolution MODIS imagery as well as daily and decadal rainfall imagery for monitoring breeding conditions in the Desert Locust recession area. These products can be downloaded in different formats suitable for GIS at: http://iridl.ldeo.columbia.edu/maproom/Food_Security/Locusts/index.html. The site is available in English and French. Address comments and questions to Pietro Ceccato (pceccato@iri.columbia.edu).

Greenness map. Geo-referenced dynamic greenness maps that show the evolution of green vegetation in the Desert Locust recession area for three months can be downloaded every ten days from DevCoCast (<http://www.devcoast.eu/user/images/dl/Form.do>). The new product was developed by the Université catholique de Louvain and the Flemish Institute for Technical Research in Belgium and funded by the Belgium Science Policy Office. The maps can be used in a GIS to help guide survey teams and in locust analysis and forecasting.

Twitter. FAO DLIS has started to disseminate updates on the Desert Locust situation via Twitter, a social media service. Twitter can be accessed via the Internet or, in some countries, by mobile phone. Interested users should sign up for a free account at

<http://twitter.com>. Current Twitter users can access locust updates at <http://twitter.com/faolocust>.

eLERT. The Locust Group has created a dynamic and interactive online reference database that can be used to respond to assistance needs in a fast evolving locust emergency. It provides information on pesticides, equipment, suppliers, environmental monitoring, contracts, and contacts. The eLERT should help agencies to act more effectively in coping with locust threats. Visit eLert at <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 Section – Briefs
- **Greenness maps.** Activities Section – DLIS
- **Twitter.** Home page
- **eLERT.** Information Section
- **DLCC working papers.** Publications Section – Reports

2011 events. The following activities are scheduled or planned:

- **DLCC.** 40th session, Cairo, Egypt (postponed)
- **SWAC.** Desert Locust joint survey in the spring breeding areas of Pakistan and Iran (17 Apr - 10 May)
- **CLCPRO/EMPRES.** ULV Spraying and Environmental Monitoring workshop, Agadir, Morocco (4-12 April)
- **CRC/SWAC.** Desert Locust Information Officer workshop, Cairo, Egypt (postponed)



Glossary of terms

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

NON-GREGARIOUS ADULTS AND HOPPERS

ISOLATED (FEW)

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

SCATTERED (SOME, LOW NUMBERS)

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

GROUP

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

ADULT SWARM AND HOPPER BAND SIZES

VERY SMALL

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

SMALL

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

MEDIUM

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

LARGE

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

VERY LARGE

- swarm: 500+ km² • band: 50+ ha

RAINFALL

LIGHT

- 1 - 20 mm of rainfall.

MODERATE

- 21 - 50 mm of rainfall.

HEAVY

- more than 50 mm of rainfall.

OTHER REPORTING TERMS

BREEDING

- the process of reproduction from copulation to fledging.

SUMMER RAINS AND BREEDING

- July - September/October

WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July

DECLINE

- a period characterised by breeding failure and/or successful control leading to the dissociation of swarming populations and the onset of recessions; can be regional or major.

OUTBREAK

- a marked increase in locust numbers due to concentration, multiplication and gregarisation which, unless checked, can lead to the formation of hopper bands and swarms.

UPSURGE

- a period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to- gregarious breeding in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions.

PLAGUE

- a period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously.

RECESSION

- period without widespread and heavy infestations by swarms.

REMISSION

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

WARNING LEVELS

GREEN

- Calm. No threat to crops. Maintain regular surveys and monitoring.

YELLOW

- Caution. Potential threat to crops. Increased vigilance is required; control operations may be needed.

ORANGE

- Threat. Threat to crops. Survey and control operations must be undertaken.

RED

- Danger. Significant threat to crops. Intensive survey and control operations must be undertaken.

REGIONS

WESTERN

- locust-affected countries in West and North-West Africa: Algeria, Chad, Libya, Mali, Mauritania, Morocco, Niger, Senegal, Tunisia; during plagues only: Burkino Faso, Cape Verde, Gambia, Guinea and Guinea-Bissau.

CENTRAL

- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

EASTERN

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



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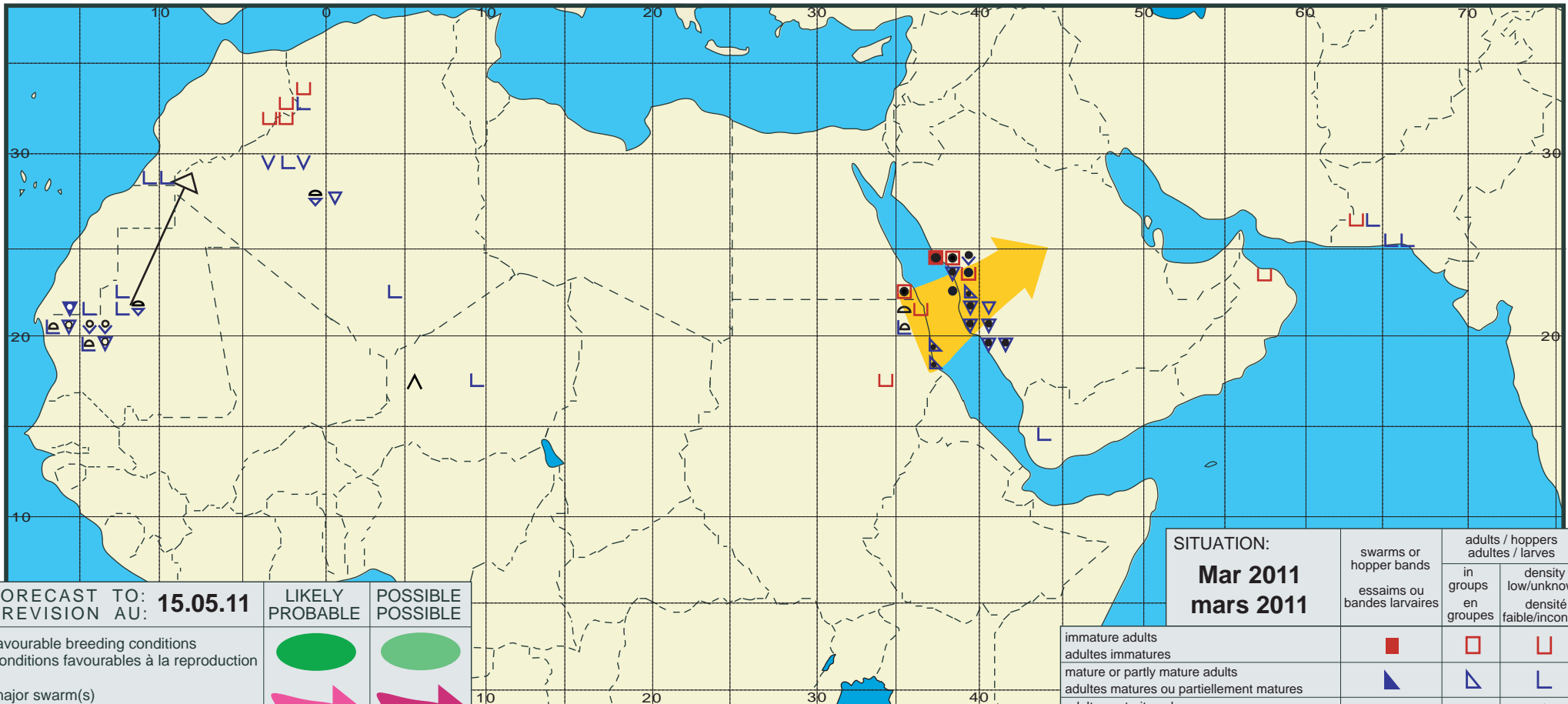
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Desert Locust Summary

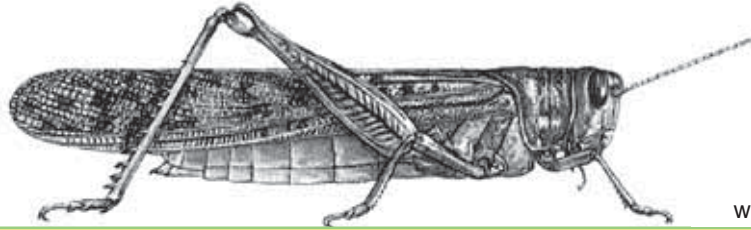
Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU: 15.05.11	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favorables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: Mar 2011 mars 2011	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**

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FAO Emergency Centre for Locust Operations



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**General Situation during April 2011
Forecast until mid-June 2011**

(3 May 2011)

Desert Locust infestations persisted during April in northwest Mauritania and on the Red Sea coast in Saudi Arabia but declined in Egypt and Sudan. Ground and aerial control operations were undertaken in Saudi Arabia against another generation of breeding while smaller ground operations were conducted in Mauritania, Egypt, southern Morocco and Algeria. Small-scale breeding occurred in western Pakistan and southeast Iran. During the forecast period, if the remaining infestations in Saudi Arabia are not controlled, new adult groups and small swarms could form on the coast and move into the interior during May and perhaps across the Red Sea to Sudan in June. Any adults remaining in northwest Mauritania will move to the summer breeding areas in the south of the country in June. Therefore, all efforts should be made to control current infestations in order to reduce migration to the spring and summer breeding areas.

Western Region. Groups of hoppers and adults formed in northwest **Mauritania** and adjacent areas of southern Western Sahara in **Morocco** during April. Ground teams treated more than 8,000 ha in Mauritania and 300 ha in Morocco. Low numbers of adults persisted along the southern side of the Atlas Mountains in Morocco. In **Algeria**, hatching near irrigated crops in the central Sahara caused locusts to increase and form small groups of hoppers and adults that were treated (440 ha). No locusts were reported in the northern Sahel of West Africa where dry conditions prevailed. During the forecast period, adult

numbers will increase in northwest Mauritania in May but decline during June as adults move towards the summer breeding areas in the south of the country. This year, somewhat higher than normal numbers are expected to appear prior to the onset of the summer rains.

Central Region. Another generation of hatching occurred on the central Red Sea coastal plains in **Saudi Arabia**, causing locust numbers to increase during April. Aerial and ground control operations treated more than 13,000 ha of hopper bands and groups of hoppers and adults. Locust infestations continued to decline on the Red Sea coast in **Sudan** and **Egypt**. Ground teams treated 2,150 ha in Egypt. No locusts were reported elsewhere in the Region. During the forecast period, more hopper bands and adult groups will form on the Red Sea coast in Saudi Arabia. As vegetation dries out, adult groups and perhaps a few small swarms are likely to move into the spring breeding areas of the central interior in May while in June they are more likely to cross the Red Sea to northeast Africa. If adults arrive in the interior of Saudi Arabia, small-scale breeding will occur in areas of recent rainfall.

Eastern Region. Small-scale breeding occurred in the spring breeding areas of Baluchistan in **Pakistan** and, to a lesser extent, in **Iran** during April. Locust numbers will increase slightly in May but then decline during June as low numbers of adults move towards the summer breeding areas along the Indo-Pakistan border.

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 made available on the Internet.

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DLIS: www.fao.org/ag/locusts



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Weather & Ecological Conditions in April 2011

Vegetation continued to dry out in the winter breeding areas along both sides of the Red Sea and in northwest Africa due to poor rains during April. Ecological conditions improved in the spring breeding areas in western Pakistan and southeast Iran.

In the **Western Region**, no significant rain fell during April. Vegetation remained green in parts of northwest Mauritania and in adjacent southern areas of Western Sahara from rains that occurred six months ago. Elsewhere in northwest and northern Mauritania, vegetation was drying out or already dry. In the spring breeding areas of Northwest Africa, vegetation was drying out along the southern side of the Atlas Mountains in Morocco, except near Guelmim, in parts of the Draa Valley and in the northeast near Figuig. In Algeria, dry conditions prevailed except in irrigated areas near Bechar and Adrar. In the northern Sahel, mainly dry conditions persisted, except in parts of the Adrar des Iforas in northern Mali and the Air Mountains in northern Niger where small areas of green vegetation may be present in some of the larger wadis. Light rains may have fallen in parts of the Timetrine in northern Mali and the Tenere Desert in northeast Niger.

In the **Central Region**, very little rain fell during April in the winter breeding areas along both sides of the Red Sea. Light to moderate rains may have fallen during the second decade on the Red Sea coastal plains near the Sudanese/Eritrean between Mehimet, Eritrea and Aiterba, Sudan. Light rain may have also fallen at times on the central Red Sea coast in Eritrea. In the spring breeding areas, light to moderate rains fell in the interior of Saudi Arabia, and light rains fell on the northern coast of Oman between Sohar and the Musandam Peninsula, in the northern interior of Oman between Ibri and Sharqiya, and on the escarpment in northern Somalia between Hargeisa and Berbera. During the last decade, light rains may have fallen in the summer breeding areas of the interior of Yemen between Marib and Thamud. Vegetation was drying out on the Red Sea coastal plains in Yemen and from Egypt to Eritrea except for the Tokar Delta in Sudan.

Vegetation remained green along parts of the coast in Saudi Arabia.

In the **Eastern Region**, light to moderate rainfall occurred at times during April in parts of the spring breeding areas in western Pakistan and southeast Iran. Most of the rain fell in Iran on the southeastern coastal plains and in the Jaz Murian Basin. In Pakistan, good rains fell at the end of the month in central (Shooli Valley to Panjgur) and northern (Kharan Valley and Nushki) Baluchistan. Consequently, ecological conditions were favourable for breeding in these areas.



Area Treated

Algeria	440 ha (April)
Egypt	2,150 ha (1-27 April)
Mauritania	8,053 ha (1-20 April)
Morocco	329 ha (April)
Saudi Arabia	13,124 ha (April)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During April, groups of late instar solitary and *transiens* hoppers and immature and mature adults persisted in the northwest region of Inchiri, mainly near Tasiast (2034N/1531W), and to a lesser extent in southwest Adrar between Akjoujt (1945N/1421W) and Atar (2032N/1308W). As vegetation dried out in the Tasiast area, locust densities increased to 60 hoppers/m² and 13,000 adults/ha while lower densities (25 hoppers/m² and 1,800 adults/ha) were present in other areas. A few adults were seen copulating and laying eggs in both areas during April. Ground teams treated 8,053 ha on 1-20 April. In the north, scattered mature solitary adults were present between Zouerate (2244N/1221W) and Bir Moghreïn (2510N/1135W). No locusts were seen in northeastern Tiris Zemmour.

• FORECAST

Adult numbers will increase in Inchiri as fledging occurs during May. Although limited hatching is likely to take place in some areas, breeding will come to an end. As vegetation continues to dry out, locusts will concentrate and form small groups. Locust numbers in the northwest will decline during June as adults move towards the summer breeding areas in the south

where somewhat higher than normal numbers are expected to appear at the end of the forecast period.

Mali

• SITUATION

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

• FORECAST

Low numbers of adults may 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 April.

• Forecast

Isolated adults may be present and will persist in parts of 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 surveys were carried out and no locusts were reported during April.

• FORECAST

No significant developments are likely.

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

• FORECAST

No significant developments are likely.

Algeria

• SITUATION

During April, locust numbers increased slightly in the central Sahara near irrigated crops in the Adrar (2753N/0017W) area. Hatching started during the first week, giving rise to groups of solitary hoppers at densities up to 40 hoppers/m². A few groups of immature and mature solitary and *transiens* adults were present at densities up to 1,100 adults/ha. Limited breeding also occurred west of Tamanrasset (2250N/0528E) where mature solitary adults were present. Scattered mature adults were present near Tindouf (2741N/0811W) and Beni Abbes (3011N/0214W). Ground teams treated 440 ha mainly near Adrar.

• FORECAST

Small-scale breeding will continue near Adrar where

hatching is likely to take place during the first half of May and fledging will occur from mid-May to mid-June. Locusts are expected to concentrate and form small groups. Limited breeding may occur in areas of recent rainfall near Tindouf.

Morocco

• SITUATION

During April, isolated mature solitary adults persisted near Guelmim (2859N/1003W) and in the northeast between Erfoud (3128N/0410W) and Figuig (3207N/0113W). No locusts were seen in the Draa Valley.

In the Western Sahara, mainly late instar groups of *transiens* hoppers at densities up to 25 hoppers/m² were present on the Mauritanian border near Ikniouen (2120N/1523W). Immature and mature solitary adults densities increased during the month to 6,000 adults/ha. Ground teams treated 329 ha in April. A few mature adults were present northwest of Aousserd (2233N/1419W).

• FORECAST

As vegetation dries out in the Western Sahara, locusts are likely to concentrate and form small groups near the Mauritanian border. Locust numbers will decline during June as any remaining adults move towards the summer breeding areas in southern Mauritania.

Libyan Arab Jamahiriya

• SITUATION

No reports were received during April.

• FORECAST

A few solitary adults may be present and could persist near Ghat. 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 April, locust infestations continued to decline on the Red Sea coast. During the first



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decade, small hopper bands of all instars were seen in Wadi Oko north of Tomala (2002N/3551E), and residual populations of scattered solitary hoppers and mature adults were present on the coast from Port Sudan (1938N/3713E) to south of Suakin (1906N/3719E). During the second decade, surveys were undertaken in Tokar Delta and on the southern coastal plains but no locusts were seen.

• FORECAST

Locust numbers will decline on the Red Sea coast and no significant developments are expected. Scattered adults and perhaps a few small groups are likely to appear in a few areas along the Nile and Atbara rivers between Khartoum and Dongola. This could be supplemented by a few groups or swarmlets from the eastern side of the Red Sea in June.

Eritrea

• SITUATION

No locusts were seen during a survey on the central Red Sea coast between Massawa (1537N/3928E) and Tio (1441N/4057E) on 16-20 April.

• FORECAST

Isolated adults may be present in a few places along the Red Sea coastal plains between Massawa and Karora but numbers will decline as vegetation dries out. No significant developments are likely.

Ethiopia

• SITUATION

No locusts were seen during a survey carried out near Dire Dawa (0935N/4150E) on 27-28 April.

• FORECAST

No significant developments are likely.

Djibouti

• SITUATION

No reports were received during April.

• FORECAST

No significant developments are likely.

Somalia

• SITUATION

No reports were received during April.

• FORECAST

Isolated adults may appear in areas of recent rainfall on the escarpment between Hargeisa and Berbera. No significant developments are likely.

Egypt

• SITUATION

During the first half of April, late instar *transiens* and gregarious hopper groups and bands mixed with groups of *transiens* and gregarious fledglings and immature adults persisted on the Red Sea coast between Shalatein (2308N/3535E) and Abu Ramad (2224N/3624E). During the second half of the month, locust numbers declined and only scattered solitary and *transiens* hoppers were present with a few small groups of immature adults. Isolated mature solitary adults were seen in the Allaqi area east of Lake Nasser suggesting that adults were starting to leave the coastal plains. Ground teams treated 2,150 ha in April.

• FORECAST

Locust numbers will decline on the Red Sea coast as scattered adults move towards the Western Desert where they are likely to appear near Lake Nasser, Sh. Oweinat and perhaps Jebel Uweinat. This could be supplemented by a few groups or swarmlets from the eastern side of the Red Sea in June.

Saudi Arabia

• SITUATION

During April, aerial and ground control operations declined on the Red Sea coast between Lith (2008N/4016E) and Umm Lajj (2501N/3716E) against mainly early instar hopper groups and bands, and groups of mature solitary, *transiens* and gregarious adults. The hopper bands and groups were mostly medium density and less than one hectare in size. Adults were seen copulating and laying eggs during the first two decades of the month, and another generation of hatching occurred during the second half of April. Ground and aerial teams treated 13,124 ha in April, mainly in the Lith area. No locusts were reported in the spring breeding areas of the interior.

• FORECAST

Hatching will continue on the Red Sea coast between Qunfidah and Yenbo in early May, and hoppers will form groups and bands. Fledging will continue throughout the forecast period, causing small groups of adults and swarms to form. As vegetation dries out, adults are likely to move into the spring breeding areas of the central interior in May while in June they are more likely to cross the Red Sea to northeast Africa. If adults arrive in the interior, small-scale breeding will occur in areas of recent rainfall.

Yemen

• SITUATION

No locusts were seen during surveys carried out on the Red Sea coast from south of Hodeidah (1450N/4258E) to Suq Abs (1600N/4312E) and on the

Gulf of Aden coast west of Aden (1250N/4503E) on 25-27 April.

- **FORECAST**

Scattered adults may appear in the interior between Marib and Thamud at the end of the forecast period. No significant developments are likely on the Red Sea and Gulf of Aden coasts.

Oman

- **SITUATION**

During April, no locusts were seen at one location in the Musandam Peninsula, and no locusts were reported elsewhere in the country.

- **FORECAST**

Low numbers of adults may be present in areas of recent rainfall on the northern Batinah coast between Sohar and the Musandam Peninsula and in the interior between Ibri and Sharqiya. Small-scale breeding could occur in some of these areas during May.

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 April, solitary adults were copulating at three places in the Jaz Murian Basin in the southeastern interior southeast of Kahnuj (2757N/5742E), and isolated solitary hoppers and adults were seen between Dalgan (2728N/5926E) and Bampur (2711N/6028E). Isolated solitary adults were seen on the southeastern coastal plains west of Jask (2540N/5746E) and east of Chabahar (2517N/6036E).

- **FORECAST**

Small-scale breeding is likely to occur along parts of the southeastern coast and in the Jaz Murian Basin, causing locust numbers to increase slightly but remain below threatening levels. Limited fledgling will occur in late May in the Jaz Murian Basin. Locust numbers will start to decline at the end of the forecast period as vegetation dries out.

Pakistan

- **SITUATION**

During April, locust numbers increased in northern Baluchistan where scattered mature solitary adults were present and laying eggs in the Kharan Valley (2832N/6526E). Hatching started during the first week, giving rise to low numbers of solitary hoppers. Limited breeding occurred near Nushki (2933N/6601E) and mature adults were also

present near Dalbandin (2856N/6430E) and Panjgur (2658N/6406E). No locusts were seen on the coast.

- **Forecast**

Locust numbers will increase slightly as hatching continues in the Kharan Valley during the first half of May. Fledging is expected to commence in mid-May. Small-scale breeding is likely to extend to other coastal and interior areas of Baluchistan during May. Locust numbers will start to decline at the end of the forecast period as vegetation dries out.

India

- **SITUATION**

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

- **FORECAST**

Scattered adults may start to appear in parts of Rajasthan and Gujarat at the end of the forecast period.

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



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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.

Google site. FAO DLIS has created a Google site (<https://sites.google.com/site/faodlis>) for national locust information officers to share problems, solutions and tips in using new technologies (eLocust2, eLocust2Mapper, RAMSES, remote sensing) and to make available the latest files for downloading. The site replaces the FAODLIS Google group, which will no longer be maintained. Interested users should contact Keith Cressman (keith.cressman@fao.org) for details.

MODIS imagery. Columbia University's International Research Institute for Climate and Society (IRI) provides 16-day 250-metre resolution MODIS imagery as well as daily and decadal rainfall imagery for monitoring breeding conditions in the Desert Locust recession area. These products can be downloaded in different formats suitable for GIS at: http://iridl.ldeo.columbia.edu/maproom/Food_Security/Locusts/index.html. The site is available in English and French. Address comments and questions to Pietro Ceccato (pceccato@iri.columbia.edu).

Greenness map. Geo-referenced dynamic greenness maps that show the evolution of green vegetation in the Desert Locust recession area for three months can be downloaded every ten days from DevCoCast (<http://www.devcoast.eu/user/images/dl/Form.do>). The new product was developed by the Université catholique de Louvain and the Flemish Institute for Technical Research in Belgium and funded by the Belgium Science Policy Office. The maps can be used in a GIS to help guide survey teams and in locust analysis and forecasting.

Twitter. FAO DLIS has started to disseminate updates on the Desert Locust situation via Twitter, a social media service. Twitter can be accessed via the Internet or, in some countries, by mobile phone. Interested users should sign up for a free account at

<http://twitter.com>. Current Twitter users can access locust updates at <http://twitter.com/faolocust>.

eLERT. The Locust Group has created a dynamic and interactive online reference database that can be used to respond to assistance needs in a fast evolving locust emergency. It provides information on pesticides, equipment, suppliers, environmental monitoring, contracts, and contacts. The eLERT should help agencies to act more effectively in coping with locust threats. Visit eLert at <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 Section – Briefs
- **Greenness maps.** Activities Section – DLIS
- **Twitter.** Home page
- **eLERT.** Information Section
- **DLCC working papers.** Publications Section – Reports

2011 events. The following activities are scheduled or planned:

- **SWAC.** Desert Locust joint survey in the spring breeding areas of Pakistan and Iran (17 Apr - 10 May)
- **CRC/SWAC.** Desert Locust Information Officer workshop, Cairo, Egypt (17-19 May)
- **DLCC.** 40th session, Cairo, Egypt (September, to be confirmed)



Glossary of terms

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

NON-GREGARIOUS ADULTS AND HOPPERS

ISOLATED (FEW)

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

SCATTERED (SOME, LOW NUMBERS)

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

GROUP

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

ADULT SWARM AND HOPPER BAND SIZES

VERY SMALL

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

SMALL

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

MEDIUM

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

LARGE

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

VERY LARGE

- swarm: 500+ km² • band: 50+ ha

RAINFALL

LIGHT

- 1 - 20 mm of rainfall.

MODERATE

- 21 - 50 mm of rainfall.

HEAVY

- more than 50 mm of rainfall.

OTHER REPORTING TERMS

BREEDING

- the process of reproduction from copulation to fledging.

SUMMER RAINS AND BREEDING

- 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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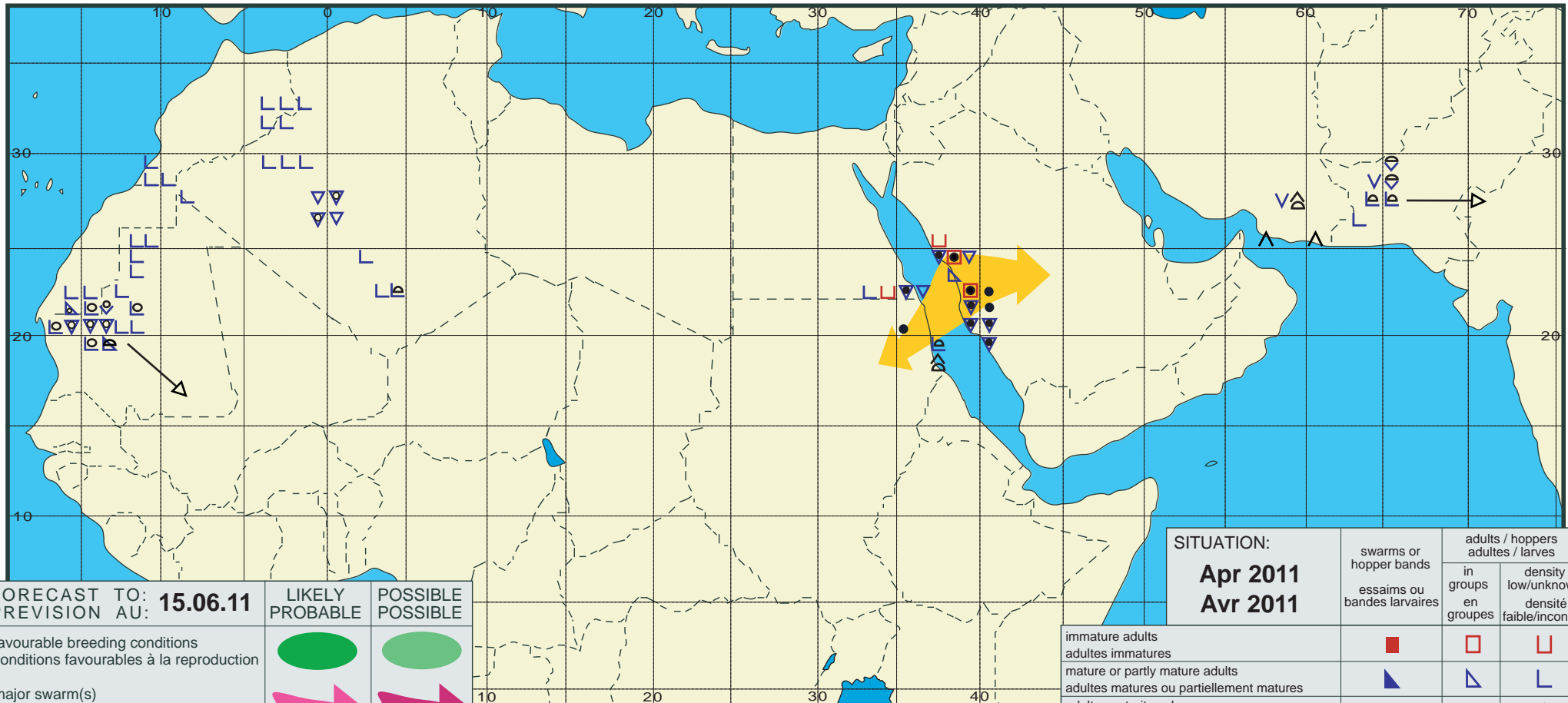
DESERT LOCUST BULLETIN



Desert Locust Summary

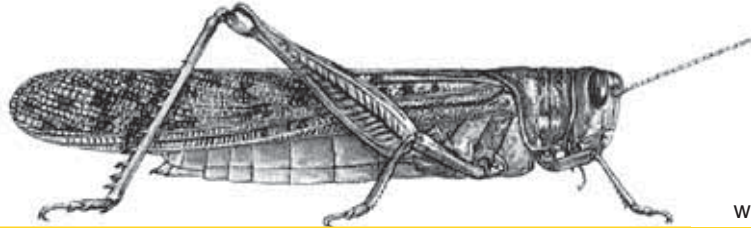
Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU: 15.06.11	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 2011 Avr 2011	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**

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FAO Emergency Centre for Locust Operations



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**General Situation during May 2011
Forecast until mid-July 2011**

(3 June 2011)

Significant Desert Locust infestations continued to be present in May on the Red Sea coast in Saudi Arabia where substantial ground and aerial control operations were conducted. Control operations declined in Mauritania and Egypt but were undertaken in the spring breeding areas in Iran and Pakistan. Smaller operations were carried out in Western Sahara and Algeria. During the forecast period, adults that are not controlled in Saudi Arabia are likely to form small groups or swarms that could move to the summer breeding areas in the interior of Sudan and Yemen and lay eggs. This poses a very significant threat to Yemen where survey and control operations are not currently possible. Therefore all efforts are required to contain the current infestations along the Red Sea coast. Higher than normal numbers of locusts will move from the spring breeding areas in northwest Africa to the northern Sahel in West Africa, and from southeast Iran and western Pakistan to the Indo-Pakistan border. Small-scale breeding will commence in these areas with the onset of the summer rains.

Western Region. Ground control operations declined in northwest **Mauritania** (4,600 ha) during May where small groups of hoppers and adults persisted in three areas. The situation remained calm in adjacent areas of the southern part of Western Sahara but adult groups appeared further north and laid eggs. Ground teams treated some 500 ha. Scattered adults persisted in some places along the southern side of the Atlas Mountains in **Morocco**.

Small hopper bands and groups of hoppers and adults formed near irrigated areas in the central Sahara of **Algeria** where ground teams treated nearly 300 ha. During the forecast period, an increasing number of adults will appear in the summer breeding areas in the northern Sahel, primarily in Mauritania and, to a lesser extent, in northern **Mali** and **Niger**. Initial adult numbers will be slightly higher than normal this year due to extended breeding in northwest Mauritania. Small-scale breeding will occur with the onset of the seasonal rains.

Central Region. Ground and aerial control operations increased during May along the Red Sea coast in **Saudi Arabia**, treating nearly 25,000 ha of hopper bands and hopper and adult groups that formed from recent breeding. Adults that are not controlled are likely to form small groups or swarms that could move to the summer breeding areas in the interior of **Sudan** and **Yemen** and lay eggs. Consequently, locust numbers are expected to increase in both countries during the forecast period. As it is not possible to carry out survey and control operations at present in Yemen, the current situation poses a significant threat if rains fall in the summer breeding areas of the interior. Therefore, all efforts are required to contain the current infestations in Saudi Arabia. The locust situation improved along the Red Sea coast in **Egypt** due to drying vegetation and control operations (65 ha).

Eastern Region. Breeding occurred during May in southeast **Iran** and western **Pakistan**, causing locusts to increase and form small groups in both countries. Ground teams treated 6,700 ha in Iran and nearly 6,000 ha in Pakistan. Any adults that are not detected or controlled could form small groups that will move to the summer breeding areas along the Indo-Pakistan border in June and lay eggs on a small scale once the monsoon rains commence.

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 made available on the Internet.

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DLIS: www.fao.org/ag/locusts



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Weather & Ecological Conditions in May 2011

Vegetation continued to dry out in the winter breeding areas along both sides of the Red Sea and in northwest Africa due to poor rains during May. Ecological conditions remained favourable in parts of the spring breeding areas in western Pakistan and southeast Iran. Generally dry conditions prevailed in the summer breeding areas in the northern Sahel from Mauritania to Sudan.

In the **Western Region**, light rain fell in parts of the spring breeding areas in northwest Africa during May, primarily in central and western Algeria near Adrar, Tindouf and Bechar. Ecological conditions continued to dry out in northwest Mauritania and Western Sahara. Light to moderate rain fell in parts of northern and central Mauritania during the first and second decades of the month respectively. This is not likely to have much effect on current infestations in the northwest of the country. During the third decade, light rain fell in parts of the Tamesna and Air Mountains in Niger and in southern Algeria. Conditions remained dry elsewhere in the summer breeding areas of the northern Sahel in West Africa from Mauritania to Chad where seasonal rains are not expected to commence until June or July.

In the **Central Region**, good rains fell at times during May on the Red Sea coast in Yemen and in parts of the spring breeding areas in the interior of Saudi Arabia and Yemen. Ecological conditions are already favourable in these areas for locust survival and breeding. Light to moderate rains fell over the plateau in northern Somalia, extending to eastern Ethiopia but vegetation remained dry. By the end of the month, a few light showers fell in the summer breeding areas of the interior of Sudan in parts of North Kordofan, Khartoum, White Nile, River Nile, Northern and Kassala States but ecological conditions remained generally dry in most areas. Vegetation continued to dry out along both sides of the Red Sea on the coast of Egypt, Sudan and Saudi Arabia as well as in northern Oman.

In the **Eastern Region**, light rain fell in parts of the spring breeding areas in western Pakistan between Panjgur and Las Bela, and at the end of May in the western part of the Jaz Murian Basin in Iran. Ecological conditions remained favourable for breeding in the Kharan Valley. In the summer breeding areas, light to moderate pre-monsoon showers fell in Rajasthan between Jaisalmer, Barmer, Jodhpur and Bikaner during the second half of May.



Area Treated

Algeria	274 ha (May)
Egypt	65 ha (May)
Iran	6,700 ha (May)
Mauritania	12,405 ha (April, updated) 5,544 ha (May)
Morocco	542 ha (May)
Pakistan	5,665 ha (14-27 May)
Saudi Arabia	24,896 ha (May)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During May, late instar solitary and *transiens* hoppers, immature and mature adults persisted in Inchiri near Tasiast (2034N/1531W) and in southwest Adrar near Tmeimichat (2119N/1420W) and Atar (2032N/1308W). Hoppers and adults continued to form small groups as vegetation dried out. Limited egg laying occurred near Tasiast and Atar. Adult densities were higher near Tasiast, reaching 16,000 adults/ha, than in Adrar (6,000 adults/ha) but declined by the end of the month. Compared to April, control operations declined and ground teams treated 5,544 ha on 1-25 May.

• FORECAST

Although limited hatching may occur in early June and hoppers and adults will continue to concentrate and form a few small groups in the northwest, locust numbers will decline further as adults move towards the summer breeding areas in the south. Adults will appear in the south in slightly higher than normal numbers and lay eggs with the onset of the seasonal rains.

Mali

• SITUATION

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

• FORECAST

Low numbers of adults may be present in parts of the Adrar des Iforas and Tamesna where small-scale breeding is expected to commence with the onset of the seasonal rains.

Niger

• SITUATION

On 14 May, an isolated immature solitary adult was seen in the southern Air Mountains between Agadez (1700N/0756E) and Timia (1809N/0846E) near Aoudares (1738N/0824E).

• Forecast

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

Chad

• SITUATION

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

• FORECAST

Isolated adults are likely to appear in the northern Sahel and breed on a small scale once the seasonal rains commence.

Senegal

• SITUATION

No surveys were carried out and no locusts were reported 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, solitary and *transiens* hoppers of all instars concentrated in vegetation that remained green in the central Sahara and formed small groups and a hopper band on the edge of Sabkhet El Maleh (2905N/0106W) between Beni Abbes (3011N/0214W) and Adrar (2753N/0017W). A few mature solitary adults were also present. In the Adrar area, hoppers of all instars mixed with immature and mature adults persisted near irrigated crops, and formed small groups and hopper bands. Some adults were laying eggs. Control teams treated 274 ha in May. A few

isolated mature solitary adults were present about 200 km west of Beni Abbes. No locusts were seen west of Tamanrasset (2250N/0528E).

• FORECAST

Breeding will end in the central Sahara. Current hopper infestations will continue to fledge until about mid-June, and small adult groups are likely to continue to form. As vegetation dries out, adults and perhaps a few small groups will move towards the southern Sahara.

Morocco

• SITUATION

During May, isolated mature solitary adults persisted near Guelmim (2859N/1003W) and in the northeast between Erfoud (3128N/0410W) and Figuig (3207N/0113W).

In the Western Sahara, isolated immature and mature adults persisted in the south between Tichla (2137N/1453W) and the Mauritanian border near Iknouen (2120N/1523W) in early May. During the last decade, groups of immature and mature *transiens* adults, at densities up to 600 adults/ha and locally 2 adults/m², appeared in the northeast where they were laying eggs southwest of Al Mahbes (2724N/0904W). Ground teams treated 542 ha. No locusts were reported in the eastern portion of Western Sahara.

• FORECAST

Although limited hatching may occur near Mahbes in June, locust numbers will decline in all areas as remaining adults move towards the summer breeding areas in southern Mauritania.

Libyan Arab Jamahiriya

• SITUATION

Locust surveys could not be carried out during May and no locusts were reported.

• FORECAST

A few solitary adults may be present and could persist near Ghat. 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.



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CENTRAL REGION

Sudan

• **SITUATION**

No reports were received during May.

• **FORECAST**

Scattered adults, perhaps supplemented by a few small groups or swarmlets from the Red Sea coast of Saudi Arabia, are likely to appear along the Nile and Atbara rivers between Khartoum and Dongola as well as in White Nile, North Kordofan and North Darfur. Small-scale breeding will commence with the onset of the seasonal rains, causing locust numbers to increase slightly. All efforts are required to initiate and maintain regular surveys in all summer breeding areas.

Eritrea

• **SITUATION**

No reports were received during May.

• **FORECAST**

Scattered adults are likely to appear in the western lowlands where small-scale breeding will commence with the onset of the summer rains. Regular surveys should be carried out during the summer.

Ethiopia

• **SITUATION**

No reports were received during May.

• **FORECAST**

No significant developments are likely.

Djibouti

• **SITUATION**

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

• **FORECAST**

No significant developments are likely.

Somalia

• **SITUATION**

No reports were received during May.

• **FORECAST**

Isolated adults may appear in areas of recent rainfall on the escarpment between Hargeisa and Berbera. No significant developments are likely.

Egypt

• **SITUATION**

During May, locust infestations continued to decline along the Red Sea coastal plains between Shalatein (2308N/3535E) and Abu Ramad (2224N/3624E). Scattered *transiens* hoppers and scattered immature and mature solitary, *transiens* and gregarious adults and groups persisted in a few places. Ground teams treated 65 ha. Elsewhere, isolated mature solitary and *transiens* adults were seen near Marsa Alam (2504N/3454E) and Garf Husein (2317N/3252E).

• **FORECAST**

Locust numbers will decline on the Red Sea coast as scattered adults move towards the Western Desert where they are likely to appear near Lake Nasser, Sh. Oweinat and perhaps Jebel Uweinat. This could be supplemented by a few groups or swarmlets from the eastern side of the Red Sea in June.

Saudi Arabia

• **SITUATION**

During May, aerial and ground control operations increased against hopper bands and groups of hoppers, immature and mature adults on the Red Sea coast near Lith (2008N/4016E) and, to a lesser extent, just north of Jeddah (2130N/3910E). Hopper groups and bands were also treated near Umm Lajj (2501N/3716E) and at a few places in the Asir Mountains south of Medinah (2430N/3935E). Most of the hoppers were third to fifth instar. A total of 24,896 ha were treated of which 9,700 ha were by air. No locusts were seen in the interior or in the southern Asir Mountains near Khamis Mushait (1819N/4245E).

• **FORECAST**

Although fledging will continue early in the forecast period, locust numbers will decline on the Red Sea coast due to control operations and drying vegetation. Any residual adults that are not detected or controlled on the coast are likely to form small groups and perhaps a few small swarms that could move to the summer breeding areas in the interior of Sudan and Yemen. There is a lower risk of movement towards the northeast to areas of recent rainfall in the interior.

Yemen

• **SITUATION**

Locust surveys could not be carried out during May and no locusts were reported.

• **FORECAST**

Scattered adults, perhaps supplemented by a few small groups or swarmlets, may appear in the interior between Marib and Thamud. Scattered adults may be present in areas of recent rainfall on the Red Sea coast.

Oman

• SITUATION

During May, no locusts were seen during surveys carried out in the north (Buraimi and Dakhliya regions) and the southern region of Dhofar.

• 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

During May, ground teams treated 6,700 ha of solitarious hoppers and immature and mature adults in the Jaz Murian Basin southeast of Kahnuj (2757N/5742E).

• FORECAST

Locust numbers will decline in the Jaz Murian Basin and no significant developments are likely.

Pakistan

• SITUATION

During May, locust numbers continued to increase in the Kharan Valley (2832N/6526E) in northern Baluchistan where groups of solitarious and *transiens* hoppers and immature adults formed along a 150 km stretch of the valley from previous breeding. By mid-month, most of the infestations were fourth and fifth instar hoppers and fledglings with densities up to 10 hoppers/m² and 900 adults/ha. A few hopper bands were also reported. Ground teams treated 5,665 ha on 14-27 May. No locusts were seen elsewhere in the spring breeding areas.

• Forecast

Locust numbers will decline in the Kharan Valley due to control operations and drying vegetation. Nevertheless, any residual adults that are not detected or controlled could form small groups that will move to the summer breeding areas along the Indo-Pakistan border.

India

• SITUATION

During May, an isolated mature adult was seen on the 30th near Nagaur (2711N/7344E). No locusts were seen elsewhere during surveys in Rajasthan and Gujarat.

• FORECAST

Scattered adults, perhaps supplemented by a few small groups coming from the spring breeding areas in western Pakistan, are likely to appear in parts of

Rajasthan and Gujarat, and breed on a small scale with the onset of the monsoon rains.

Afghanistan

• SITUATION

No reports received.

• FORECAST

No significant developments are likely.



Announcements

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- very few present and no mutual reaction occurring;
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- enough present for mutual reaction to be possible but no ground or basking groups seen;
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- 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.

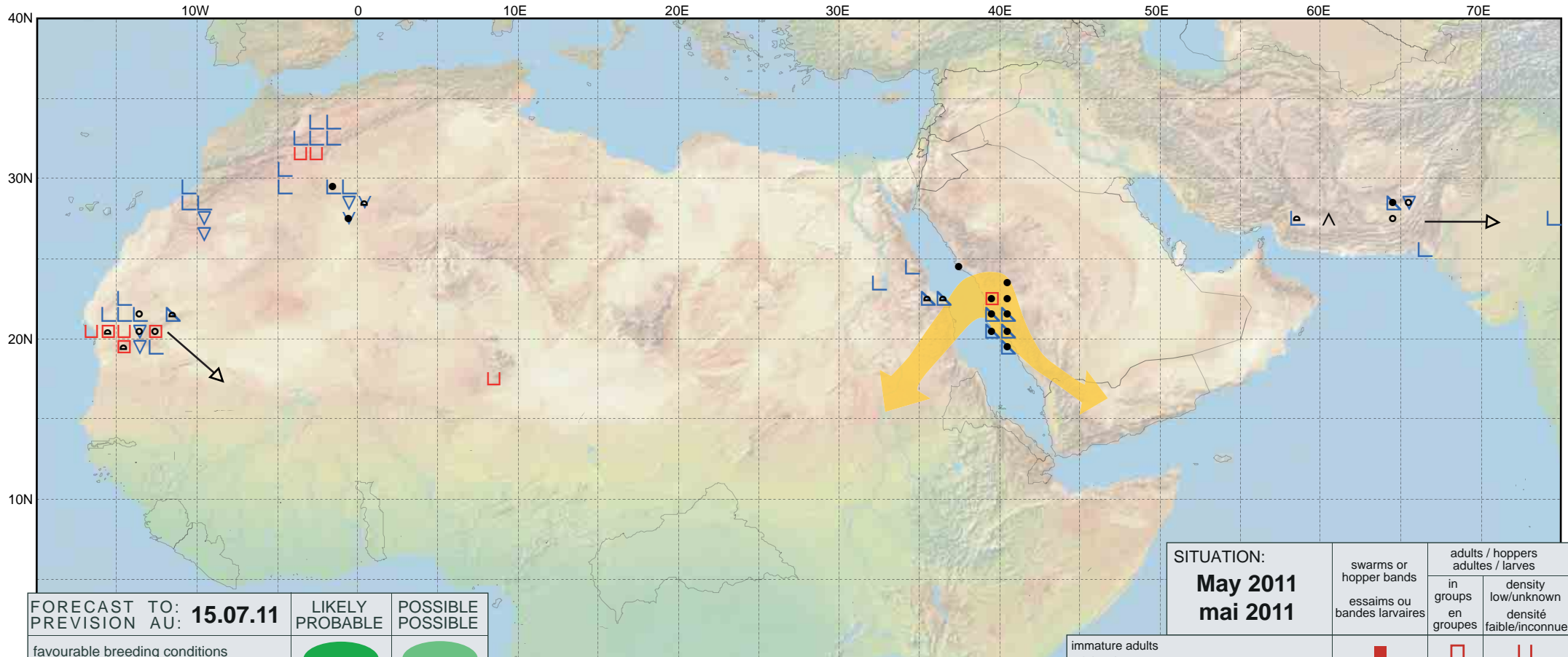


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Desert Locust Summary

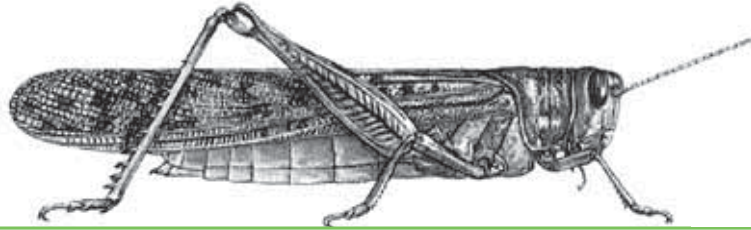
Criquet pèlerin - Situation résumée



FORECAST TO: PREVISION AU: 15.07.11	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 2011 mai 2011	swarms or hopper bands	adults / hoppers adultes / larves	
	essaims ou bandes larvaires	in groups en groupes	density low/unknown densité faible/inconnue

immature adults adultes immatures			
mature or partly mature adults adultes matures ou partiellement matures			
adults, maturity unknown adultes, maturité inconnue			
egg laying or eggs pontes ou œufs			
hoppers larves			
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)			



warning level: **CALM**

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FAO Emergency Centre for Locust Operations



No. 393



**General Situation during June 2011
Forecast until mid-August 2011**

(4 July 2011)

Desert Locust infestations declined during June in all areas due to ongoing control operations and drying vegetation. In the Central Region, ground teams treated residual infestations on the Red Sea coast in Saudi Arabia. There were no reports of locusts moving into the interior of the country or into Yemen. In the Eastern Region, a small swarm was treated in Iran and ground teams treated local infestations in western Pakistan. In the Western Region, local infestations were treated in Algeria and the Western Sahara. Seasonal rains commenced in some of the summer breeding areas of the northern Sahel from Mauritania to Eritrea as well as along parts of the Indo-Pakistan border. Small-scale breeding will cause locust numbers to increase in these areas during the forecast period.

Western Region. Limited ground control operations were carried out against locally bred infestations in the central Sahara of **Algeria** (65 ha) and in the **Western Sahara** (153 ha). Previous infestations in northwest **Mauritania** declined due to drying vegetation. Although no locusts were reported elsewhere in the Region, good rains started to fall in the summer breeding areas in southern and central Mauritania, northern **Mali** and **Niger**, and in parts of western **Chad**. Annual vegetation was already starting to become green in some places. Scattered adults will appear in these areas in July. Small-scale breeding will occur, causing locust numbers to increase, especially in the Tamesna of Niger where the heaviest rains have been received so far.

Central Region. Ground control operations concluded on the Red Sea coast in **Saudi Arabia** (900 ha) in early June and locust infestations declined on the Red Sea coast in **Egypt**. No locusts were reported in the interior of the Arabian Peninsula. Consequently, the threat of locust movement to the interior of **Yemen** is now reduced but there remains a low risk of small populations moving into the summer breeding areas of the interior of **Sudan**. Scattered adults were reported in parts of northern Sudan from mid-month onwards. Small-scale breeding will cause locust numbers to increase in Sudan and western **Eritrea** where seasonal rains have already commenced. In the Horn of Africa, drought conditions prevailed in **Djibouti**, **Somalia** and southern and eastern **Ethiopia**.

Eastern Region. Ground teams continued to treat adult groups and scattered hoppers in the northern part of Baluchistan in western **Pakistan** (2,905 ha). A small swarm (3 ha) was also treated in southeast **Iran**. Scattered adults appeared in the summer breeding areas on the Indo-Pakistan border in Cholistan, Pakistan and Rajasthan, **India** as well as small groups of hoppers in Rajasthan. During the forecast period, more adults and perhaps a few small groups will appear along both sides of the Indo-Pakistan border and breed on a small scale, causing locust numbers to increase.

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

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DLIS: www.fao.org/ag/locusts



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Weather & Ecological Conditions in June 2011

Seasonal rains commenced in the summer breeding areas of the northern Sahel between Mauritania and Eritrea as well as along parts of the Indo-Pakistan border. Ecological conditions will improve to allow small-scale breeding during the forecast period.

In the **Western Region**, seasonal rains commenced in parts of the summer breeding areas in the northern Sahel of West Africa during June, which will allow ecological conditions to improve for small-scale breeding. The Inter-Tropical Convergence Zone (ITCZ) moved progressively northwards over West Africa during the month. By the end of June, it had reached the Malian border in Mauritania, the central Adrar des Iforas in Mali, central Tamesna in Niger and central Chad. Its position was slightly further north than normal over Mali and Niger while slightly further south than normal over Mauritania. As a result, light rains fell in parts of the summer breeding areas in Mauritania from mid-month onwards in southwest Adrar (Atar to Chinguetti), in Hodh El Gharbi (Tamchekket to Aioun) and in southern Hodh Ech Chargui (Timbedra to Nema). In Mali, good rains fell in the southern Adrar des Iforas from Gao to Kidal and Tin Essako. At mid-month, light rain fell in southern Tamesna and in the northern Adrar des Iforas from Tessalit to the Algerian border. During the last decade, light rains fell in Timetrine between Araouane and Tadhak. In Niger, light to moderate rains fell in Tamesna, Air Mountains and the northern Sahel, causing floods in some wadis. Annual vegetation was already becoming green in some places. Mainly dry conditions persisted in Chad except in parts of Kanem where light rains fell. In Northwest Africa, green vegetation persisted in northeast Morocco near Bouarfa. Vegetation was becoming green from recent rains in the northeastern part of Western Sahara near Al Mahbes. In Algeria, dry conditions prevailed in the central Sahara. Good rains fell in the extreme south along the Niger and Mali borders where ecological conditions are expected to improve.

In the **Central Region**, seasonal rains commenced in parts of the summer breeding area in the interior

of Sudan from mid-June onwards. Light rain fell between Kassala and the eastern portion of the Baiyuda Desert, and on the western side of the Red Sea Hills near Derudeb. By the end of the month, the northern movement of the summer rains associated with the ITCZ position had reached El Obeid, En Nahud and El Fasher. This was slightly further south than in normal years. In Eritrea, light rains fell in the southern and central portions of the western lowlands. Consequently, ecological conditions will improve for breeding in all of these areas. In Yemen, light to moderate rain fell at times on the Red Sea coast but the interior remained dry. Dry conditions also prevailed in the Horn of Africa where drought conditions were affecting Djibouti, Somalia, and southern and eastern Ethiopia.

In the **Eastern Region**, vegetation continued to dry out in the spring breeding areas of Baluchistan in western Pakistan and southeast Iran during June. Light to moderate rains associated with the summer monsoon reached Gujarat and eastern Rajasthan during the third decade of the month. Some rains extended to the Indo-Pakistan border area between the Rajasthan Canal and Rahimyar Khan, Pakistan.



Area Treated

Algeria	65 ha (June)
Iran	3 ha (June)
Morocco	153 ha (June)
Pakistan	2,905 ha (June)
Saudi Arabia	900 ha (June)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

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

• FORECAST

Scattered adults are likely to appear in areas of recent rainfall in southwest Adrar between Atar and Chinguetti and in Hodh Ech Chargui and Hodh El Gharbi. Small-scale breeding will cause locust numbers to increase during the forecast period.

Mali

• SITUATION

On 20 June, nomads reported seeing scattered solitary adults at a few places in the western Adrar des Iforas near Aguelhoc (1927N/0052E).

• FORECAST

Small-scale breeding will cause locust numbers to increase in the Tilemsi Valley, Adrar des Iforas, Tamesna and Timetrine.

Niger

• SITUATION

During June, scattered immature and mature solitary adults were seen at a half dozen places in eastern Tamesna between Agadez (1700N/0756E) and Arlit (1843N/0721E). Copulating was reported at one location on the 9th.

• FORECAST

Small-scale breeding will cause locust numbers to increase in Tamesna and the northern Sahel.

Chad

• SITUATION

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

• FORECAST

Isolated adults are likely to appear in the northern parts of Kanem, Batha and Biltine as well as in parts of BET. Small-scale breeding will cause locust numbers to increase in these areas once the seasonal rains commence.

Senegal

• SITUATION

No reports were received during June.

• FORECAST

No significant developments are likely.

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

• FORECAST

No significant developments are likely.

Algeria

• SITUATION

During June, locust numbers declined in the central Sahara. Immature solitary adults were present in Wadi Saoura near Beni Abbes (3011N/0214W) and mature adults were seen to the west near Tabelbala (3003N/0201W). In the Adrar area (2753N/0017W), small hopper concentrations persisted near irrigated crops. Control teams treated 65 ha in June. No locusts were seen west of Tamanrasset (2250N/0528E).

• FORECAST

Low numbers of adults are likely to appear in the

southern Sahara and breed on a small scale in areas of recent rainfall.

Morocco

• SITUATION

During June, locust infestations declined in the northeast early in the month and only isolated mature solitary adults were seen in a few places north of Bouarfa (3232N/0159W) near Naama (3318N/0200W).

In the Western Sahara, second to fifth instar *transiens* hoppers from May breeding formed groups, at densities up to 31 hoppers/m², in several places southwest of Al Mahbes (2724N/0904W) during the second half of June. Ground teams treated 153 ha.

• FORECAST

Locust numbers will decline in the Western Sahara. No significant developments are likely.

Libyan Arab Jamahiriya

• SITUATION

No reports were received during June.

• FORECAST

A few solitary adults may be present and could persist near Ghat. 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, surveys commenced in some of the summer breeding areas of the interior. Scattered immature and mature solitary adults were seen at densities up to 100 adults/ha from mid-month onwards at two places in the Baiyuda Desert between Khartoum (1533N/3235E) and Merowe (1830N/3149E), on the western side of the Red Sea Hills near Derudeb (1731N/3607E), in North Kordofan near Umm Saiyala (1426N/3112E), and along the Nile River between Shendi (1641N/3322E) and Atbara (1742N/3400E) and near Abu Hamed (1932N/3320E).



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• FORECAST

Scattered adults will appear throughout the summer breeding areas in the interior, perhaps supplemented by small populations from Saudi Arabia early in the forecast period. Small-scale breeding will cause locust numbers to increase in North Darfur, North Kordofan, White Nile, River Nile, Northern, Kassala and Red Sea states.

Eritrea

• SITUATION

No locusts were seen on the central Red Sea coast between Sheib (1551N/3903E) and Mersa Gulbub (1633N/3908E) on 3-6 June.

• FORECAST

Scattered adults are likely to appear in the western lowlands and breed on a small-scale in areas of recent rainfall along Khor Baraka. Regular surveys should be carried out during the summer.

Ethiopia

• SITUATION

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

• FORECAST

No significant developments are likely.

Djibouti

• SITUATION

No reports were received during June.

• FORECAST

No significant developments are likely.

Somalia

• SITUATION

No reports were received during June.

• FORECAST

No significant developments are likely.

Egypt

• SITUATION

During June, locust numbers declined on the Red Sea coast where isolated mature *transiens* adults were seen at only one location between Shalatyn (2308N/3535E) and Abu Ramad (2224N/3624E). No locusts were seen on the eastern side of Lake Nasser near Garf Husein (2317N/3252E).

• FORECAST

No significant developments are likely.

Saudi Arabia

• SITUATION

Ground control operations ended on the Red Sea coast after the first week of June, having treated 900 ha of medium density infestations of scattered immature solitarious adults near Lith (2008N/4016E) and Umm Lajj (2501N/3716E). No locusts were seen in the spring breeding areas of the interior. No surveys were conducted after mid-month.

• FORECAST

Locust numbers will decline on the Red Sea coast. No significant developments are likely.

Yemen

• SITUATION

Locust surveys could not be carried out during June and no locusts were reported.

• FORECAST

Scattered adults and perhaps a few small groups may appear early in the forecast period in the interior between Marib and Thamud. Scattered adults may be present in areas of recent rainfall on the Red Sea coast.

Oman

• SITUATION

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

• 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

During June, a very small mature swarm appeared on the 7th from the east in Zaboli (2707N/6140E) and was copulating. Ground teams treated 3 ha. No locusts were seen in the interior near Iranshahr (2712N/6042E) and on the southeast coast near Jask (2540N/5746E) and Chabahar (2517N/6036E).

• FORECAST

Locust numbers will decline in the spring breeding areas in the southeast. No significant developments are likely.

Pakistan

• SITUATION

During the first fortnight of June, groups of second to fourth instar solitary hoppers were found southwest of Nushki (2933N/6601E) and groups of mainly immature solitary and *transiens* adults persisted at about a dozen places in the Kharan Valley (2832N/6526E) in northern Baluchistan. By mid-month, adults were becoming mature and densities reached 800 adults/ha. Copulating was reported at one location. Control teams treated 2,720 ha during the period.

During the second half of June, scattered fourth and fifth instar hoppers were present near Nushki and scattered mature solitary and *transiens* adults persisted in the Kharan Valley. Control teams treated 185 ha. During the last week of June, mature solitary adults appeared in the summer breeding areas along the Indian border south of Rahimyar Khan (2822N/7020E) and southeast of Bahawalpur (2924N/7147E).

• Forecast

Locust numbers will decline in northern Baluchistan due to control operations and drying vegetation. More adults and perhaps a few small groups will appear in the summer breeding areas of Cholistan and Tharparkar. Small-scale breeding will cause locust numbers to increase along the Indian border.

India

• SITUATION

On 6 June, small groups of solitary hoppers were present at three near the Pakistani border north and northwest of Jaisalmer (2652N/7055E). Solitary adults were also seen laying eggs. No locusts were reported during the remainder of the month.

• FORECAST

More adults and perhaps a few small groups will appear in the summer breeding areas of Rajasthan and Gujarat. Small-scale breeding will cause locust numbers to increase throughout the forecast period.

Afghanistan

• SITUATION

No reports received.

• FORECAST

No significant developments are likely.

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- **Desert Locust risk map.** Archives Section – Risk maps
- **Summer 2011 forecast.** Home page
- **CRC/SWAC locust information officer workshop.** Activities Section – Workshop/Inter-regional
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- **EMPRES/WR.** 10th Liaison Officer meeting, N'Djamena, Chad (December)



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GROUP

- forming ground or basking groups;
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VERY LARGE

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- 1 - 20 mm of rainfall.

MODERATE

- 21 - 50 mm of rainfall.

HEAVY

- more than 50 mm of rainfall.

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- 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.

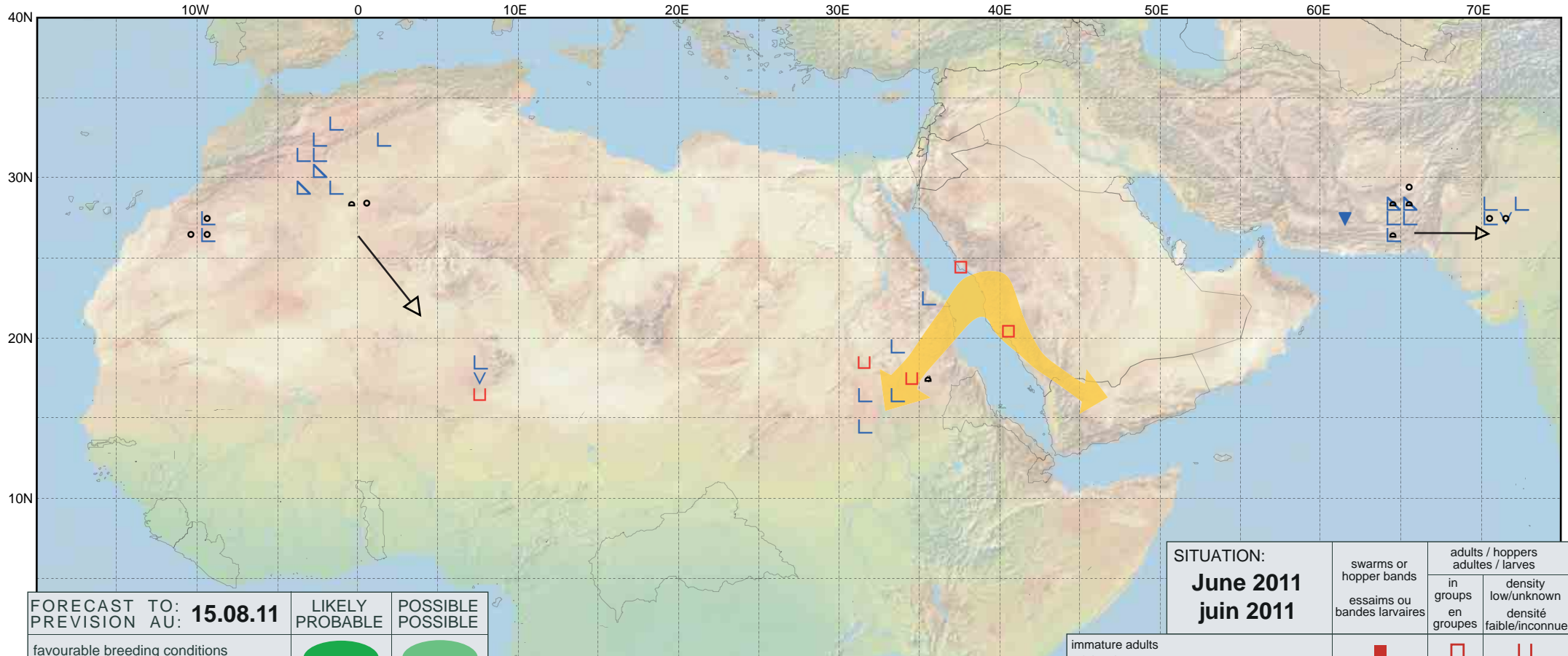


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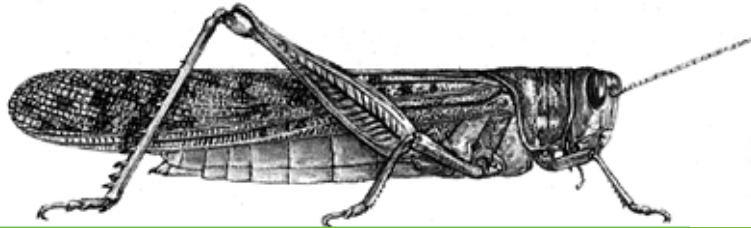
Desert Locust Summary

Criquet pèlerin - Situation résumée



FORECAST TO: PREVISION AU: 15.08.11	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favorables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: June 2011 juin 2011	swarms or hopper bands	adults / hoppers adultes / larves	
	essaims ou bandes larvaires	in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures			
mature or partly mature adults adultes matures ou partiellement matures			
adults, maturity unknown adultes, maturité inconnue			
egg laying or eggs pontes ou œufs			
hoppers larves			
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)			



warning level: **CALM**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 394



**General Situation during July 2011
Forecast until mid-September 2011**

(3 August 2011)

Low numbers of solitary Desert Locust adults appeared in the summer breeding areas of the northern Sahel in Mauritania, Niger and Sudan during July. Similar numbers are likely to be present in northern Mali. Unfortunately, surveys cannot be carried out in many parts of the Sahel due to persistent insecurity. In Northwest Africa, *transiens* hopper and adult infestations were treated in Western Sahara, Morocco and Algeria. In Southwest Asia, locust infestations declined in the spring breeding areas in western Pakistan but increased along both sides of the Indo-Pakistan border as solitary adults appeared mainly in Cholistan, Pakistan. Ecological conditions improved in much of the summer breeding areas in the Sahel and along the Indo-Pakistan border. Consequently, small-scale breeding will occur during the forecast period and cause locust numbers to increase in all areas.

Western Region. Ground control operations were carried out against locally bred hopper and adult groups that persisted during July in the central Sahara of **Algeria** (70 ha), northeastern **Morocco** (672 ha), and in the **Western Sahara** (3,756 ha). Low numbers of mature solitary adults began to appear in the summer breeding areas in the Sahel in West Africa. Isolated adults were seen in parts of central and southern **Mauritania** and in western and northern **Niger**. Ground surveys remain problematic in many areas due to insecurity. During the forecast period, small-scale breeding will occur in the northern Sahel

between Mauritania and Chad, and cause locust numbers to increase.

Central Region. Slightly lower than normal rains fell in the summer breeding areas in northern **Sudan** during July. Consequently, only low numbers of solitary adults were seen in some areas. Although surveys were not conducted in **Eritrea**, scattered adults are likely to be present in the Western Lowlands. Surveys could not be undertaken in the summer breeding areas in the interior of **Yemen** where good rains fell in July. Scattered adults are likely to be present north of Wadi Hadhramaut. No locusts were seen in the spring breeding areas in the interior of **Saudi Arabia**. In the Horn of Africa, drought conditions prevailed in **Djibouti**, **Somalia** and southern and eastern **Ethiopia**. During the forecast period, small-scale breeding will cause locust numbers to increase in the interior of Sudan, western Eritrea and probably in the interior of Yemen.

Eastern Region. Ground teams treated 210 ha of hopper and adult groups in northern Baluchistan, **Pakistan** in early July but it was uncertain if these infestations were Desert Locust. Locust numbers declined elsewhere in Baluchistan while they increased in the summer breeding areas along the Indo-Pakistan border, primarily in Cholistan, Pakistan and to a lesser extent in Rajasthan, **India**. Small-scale breeding will cause locust numbers to increase further along both sides of the Indo-Pakistan border during the forecast period

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

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DESERT LOCUST BULLETIN



Weather & Ecological Conditions in July 2011

Seasonal rains continued in the summer breeding areas between Mauritania and Eritrea, reaching the northern Sahel, as well as along parts of the Indo-Pakistan border. As a result, ecological conditions improved sufficiently to allow small-scale breeding.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) moved progressively northwards over West Africa during July. Its position remained further south than normal during the first decade, mainly over Mauritania. Nevertheless, good rains fell in southern Mauritania (south of Aleg – Kiffa – Aioun – Nema), northern Mali (south of Araouane and Tin Essako), in northern Niger (Tamesna) and Chad (south of Mao – Haraz-Djombo – Abeche). During the second decade, the ITCZ moved further north in all areas, especially in Niger and Chad, and was close to its average position except in Chad where it was further north than normal. Good rains fell further north in the Sahel: in central and northwest Mauritania (Tidjikja – Aguilal Faye – Tmeimichat), northern Mali (Araouane – Timetrine – Tilemsi Valley – Adrar des Iforas – Tamesna), northern Niger (Tamesna, Air Mountains) and Chad (south of Faya to south of Fada). Good rains also fell in southern Algeria near Tamanrasset. Consequently, vegetation was becoming green in southeast and central Mauritania, in southern Tamesna of Mali, in most of the runoff areas in Tamesna and the western Air Mountains in Niger, and in eastern Chad between Arada and Iriba. In Northwest Africa, vegetation remained green in the northeastern part of Western Sahara while vegetation was drying out along the southern side of the Atlas Mountains in Morocco.

In the **Central Region**, the ITCZ remained further south than normal over Sudan during the first two decades of July. Consequently, good rains fell south of El Fasher, El Obeid and Kassala. During the second decade, good rains fell slightly further north of these locations. Moderate to heavy rains fell locally in parts of Darfur. Consequently, vegetation was becoming green in many areas. In Yemen, good rains fell in the summer breeding areas of the interior between

Shabwah and Thamud, including the plateau north of Wadi Hadhramaut and the southern coast near Mukalla during the first decade. Light rains fell at times along parts of the Red Sea coast. Vegetation was becoming green along the central Red Sea coast and in parts of the plateau north of Wadi Hadhramaut. Light rains also fell near Dire Dawa and the railway area in eastern Ethiopia.

In the **Eastern Region**, good rains associated with the monsoon fell along both sides of the Indo-Pakistan border during July. Rainfall was heaviest during the first decade. As a result, ecological conditions improved sufficiently for small-scale breeding to occur primarily north of Jaisalmer and west of the Rajasthan Canal in India and in adjacent areas in Cholistan, Pakistan.



Area Treated

Algeria	70 ha (July)
Morocco	4,428 ha (July)
Pakistan	201 ha (1-15 July)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During July, isolated mature solitary adults were present at nearly a dozen places in Trarza and Tagant between Aguilal Faye (1827N/1444W) and Tidjikja (1833N/1126W), and Hodh El Gharbi near Aioun El Atrous (1639N/0936W).

• FORECAST

Small-scale breeding will cause locust numbers to increase in Trarza and Tagant between Aguilal Faye and Tidjikja, and, if more rain falls, in Brakna, Assaba and the two Hohds.

Mali

• SITUATION

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

• FORECAST

Low numbers of adults are almost certainly present in parts of the north. Small-scale breeding will cause locust numbers to increase in the Tilemsi Valley, Adrar des Iforas, Tamesna and Timetrine.

Niger

• SITUATION

During July, two immature solitary adults were seen in Agadez (1700N/0756E). At mid-month, scattered adults were seen copulating at two places about 250 km north of Niamey.

• FORECAST

Small-scale breeding will cause locust numbers to increase in Tamesna, the western Air Mountains and the northern Sahel.

Chad

• SITUATION

No reports were received during July.

• FORECAST

Small-scale breeding will cause locust numbers to increase in the northern parts of Kanem, Batha and Biltine as well as in parts of BET in areas of recent rainfall.

Senegal

• SITUATION

No surveys were carried out and no locusts were reported 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

During July, locust numbers continued to decline in the central Sahara. Scattered mature solitary adults were present between Beni Abbes (3011N/0214W) and Ain Sefra (3245N/0035W). In the Adrar area (2753N/0017W), a few solitary hoppers and groups of immature adults persisted near irrigated crops. Control teams treated 70 ha.

• FORECAST

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

Morocco

• SITUATION

During July, locust infestations declined further in the northeast and 672 ha of immature *transiens* adult groups were treated between Bouarfa (3232N/0159W) and Figuig (3207N/0113W).

In the Western Sahara, late instar *transiens* hoppers and immature *transiens* adults that arose from May breeding continued to develop in July and formed

groups at densities up to 30 hoppers/m² and 6,000 adults/ha in several places in Wadi Saguia Al Hamra northeast of Smara (2644N/1140W). Ground teams treated 3,756 ha.

• FORECAST

Locust numbers will decline in the Western Sahara. No significant developments are likely.

Libyan Arab Jamahiriya

• SITUATION

No reports were received during July.

• FORECAST

A few solitary adults may be present and could persist near Ghat. 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

Scattered mature solitary adults were seen during surveys carried out in the last week of July between Umm Saiyala (1426N/3112E) and Ed Dueim (1400N/3220E), near Khartoum (1533N/3235E) and Merowe (1830N/3149E), and on the western side of the Red Sea Hills between Haiya (1820N/3621E) and Kassala (1527N/3623E).

• FORECAST

Small-scale breeding will occur and low numbers of hoppers will present in parts of North Darfur, North Kordofan, White Nile, River Nile, Northern, Kassala and Red Sea states. Consequently, locust numbers will increase in these areas.

Eritrea

• SITUATION

No locusts were seen during a survey on 29-30 June in the southern part of the western lowlands. No reports were received during July.

• FORECAST

Small-scale breeding is expected to occur in areas of recent rainfall in the western lowlands, causing



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locust numbers to increase along Khor Baraka. Regular surveys should be carried out until the autumn.

Ethiopia

• SITUATION

No locusts were seen during surveys carried out in Amhara and Tigray regions.

• FORECAST

No significant developments are likely.

Djibouti

• SITUATION

No reports were received during July.

• FORECAST

No significant developments are likely.

Somalia

• SITUATION

No locusts were seen during a survey on 6-11 July on the plateau between Hargeisa (0931N/4402E), Burao (0931N/4533E) and the Ethiopian border.

• FORECAST

No significant developments are likely.

Egypt

• SITUATION

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

• FORECAST

No significant developments are likely.

Saudi Arabia

• SITUATION

No locusts were seen during surveys carried out in the spring breeding areas of the interior in July.

• FORECAST

No significant developments are likely.

Yemen

• SITUATION

Locust surveys could not be carried out during July and no locusts were reported.

• FORECAST

Low numbers of locusts may present in the interior between Marib and Thamud where small-scale breeding is likely to occur in areas of recent rainfall in the plateau north of Wadi Hadhramaut between

Minwakh and Thamud. Scattered adults may be present in areas of recent rainfall on the Red Sea coast.

Oman

• SITUATION

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

• 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 in July during surveys carried out on the southeastern coast near Jask (2540N/5746E) and from Chabahar (2517N/6036E) to the Pakistani border.

• FORECAST

No significant developments are likely.

Pakistan

• SITUATION

In the spring breeding areas, a few immature adults persisted in northern Baluchistan near Nushki (2933N/6601E) during the first half of July. On 1-4 July, ground teams treated 210 ha of fifth instar gregarious hoppers, fledglings and groups of immature adults at a half dozen places in Qila Saifullah and Pishin districts northeast of Quetta (3015N/6700E). It could not be confirmed if these infestations were Desert Locust.

In the summer breeding areas, mature solitary adults continued to be present along the Indian border south of Rahimyar Khan (2822N/7020E) and southeast of Bahawalpur (2924N/7147E).

• Forecast

Small-scale breeding will cause locust numbers to increase along the Indian border in Cholistan, Khaipur and Tharparkar deserts.

India

• SITUATION

The hopper groups reported in Bulletin 394 (June) near Jaisalmer were apparently not Desert Locust.

During July, isolated immature and mature solitary adults were present in Rajasthan southwest of Sam (2649N/7030E) and northeast of Jodhpur (2618N/7308E).

- **FORECAST**

More adults and perhaps a few small groups will appear in the summer breeding areas of Rajasthan and Gujarat. Small-scale breeding will cause locust numbers to increase throughout the forecast period.

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.

Google site. FAO DLIS has created a Google site (<https://sites.google.com/site/faodlis>) for national locust information officers to share problems, solutions and tips in using new technologies (eLocust2, eLocust2Mapper, RAMSES, remote sensing) and to make available the latest files for downloading. The site replaces the FAODLIS Google group, which will no longer be maintained. Interested users should contact Keith Cressman (keith.cressman@fao.org) for details.

MODIS imagery. Columbia University's International Research Institute for Climate and

Society (IRI) provides 16-day 250-metre resolution MODIS imagery as well as daily and decadal rainfall imagery for monitoring breeding conditions in the Desert Locust recession area. These products can be downloaded in different formats suitable for GIS at: http://iridl.ldeo.columbia.edu/maproom/.Food_Security/.Locusts/index.html. The site is available in English and French. Address comments and questions to Pietro Ceccato (pceccato@iri.columbia.edu).

Greenness maps. Geo-referenced dynamic greenness maps that show the evolution of green vegetation in the Desert Locust recession area for three months can be downloaded every ten days from DevCoCast (<http://www.devcoCast.eu/user/images/dl/Form.do>). The new product was developed by the Université catholique de Louvain and the Flemish Institute for Technical Research in Belgium and funded by the Belgium Science Policy Office. The maps can be used in a GIS to help guide survey teams and in locust analysis and forecasting.

Twitter. FAO DLIS disseminates updates on the Desert Locust situation via Twitter, a social media service. The updates can be followed on some mobile phones in some countries (send an SMS to 40404: 'Follow faolocust' (no quotes) and through the Internet (<http://twitter.com/faolocust>) by searching on 'DesertLocust'.

eLERT. The Locust Group has created a dynamic and interactive online reference database that can be used to respond to assistance needs in a fast evolving locust emergency. It provides information on pesticides, equipment, suppliers, environmental monitoring, contracts, and contacts. The eLERT should help agencies to act more effectively in coping with locust threats. Visit eLert at <http://sites.google.com/site/elertsite>.

EMPRES/CRC web site. The EMPRES / Central Region Commission (CRC) web site can be found at <http://crc-empres.org>. Please note that the address in Bulletin No. 392 was incorrect.

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

- **Desert Locust situation updates.** Archives Section – Briefs



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- **Desert Locust risk map.** Archives Section – Risk maps
- **Summer 2011 forecast.** Home page
- **CRC/SWAC locust information officer workshop.** Activities Section – Workshop/Inter-regional
- **Iran/Pakistan 2011 Joint survey results.** Publications Section – Reports
- **Greenness maps.** Activities Section – DLIS
- **Twitter.** Home page link
- **eLERT.** Information Section

2011 events. The following activities are scheduled or planned:

- **EMPRES/WR.** 10th Liaison Officer meeting, N'Djamena, Chad (December)
- **DLCC.** 40th session, Cairo, Egypt (to be confirmed)



Glossary of terms

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

NON-GREGARIOUS ADULTS AND HOPPERS

ISOLATED (FEW)

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

SCATTERED (SOME, LOW NUMBERS)

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

GROUP

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

ADULT SWARM AND HOPPER BAND SIZES

VERY SMALL

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

SMALL

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

MEDIUM

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

LARGE

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

VERY LARGE

- swarm: 500+ km² • band: 50+ ha

RAINFALL

LIGHT

- 1 - 20 mm of rainfall.

MODERATE

- 21 - 50 mm of rainfall.

HEAVY

- more than 50 mm of rainfall.

OTHER REPORTING TERMS

BREEDING

- the process of reproduction from copulation to fledging.

SUMMER RAINS AND BREEDING

- 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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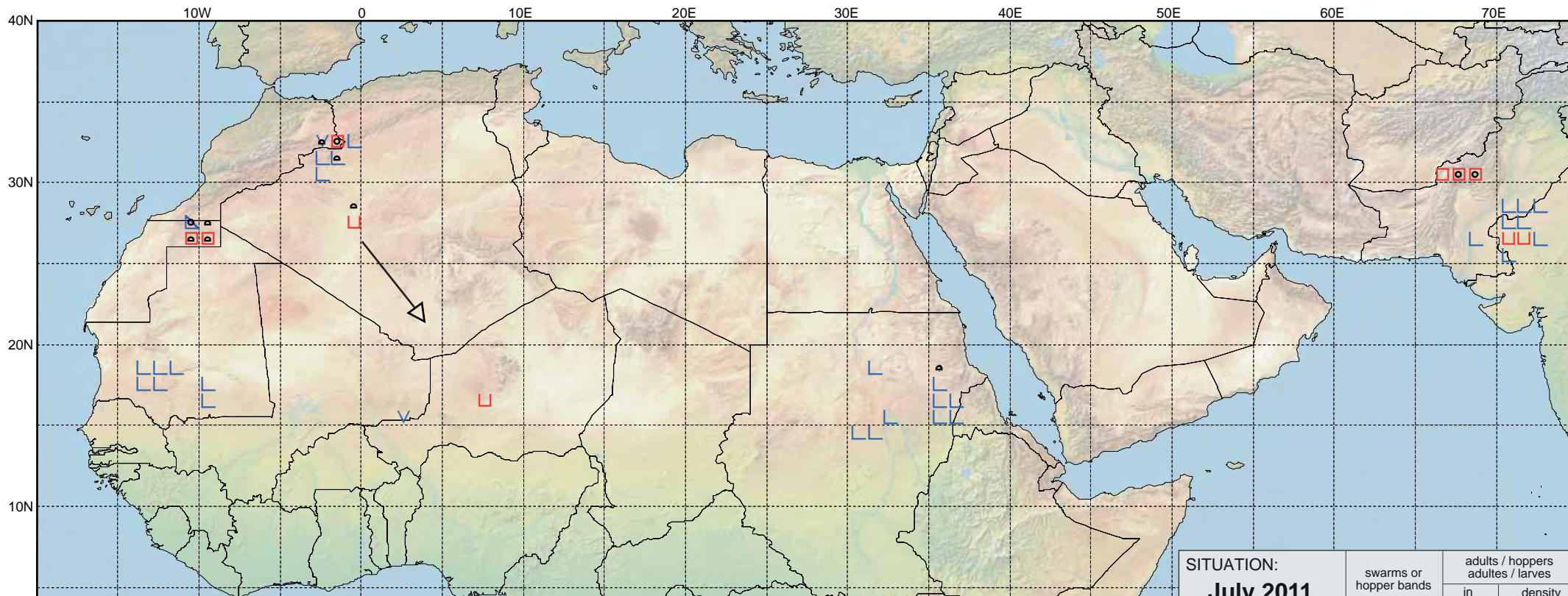
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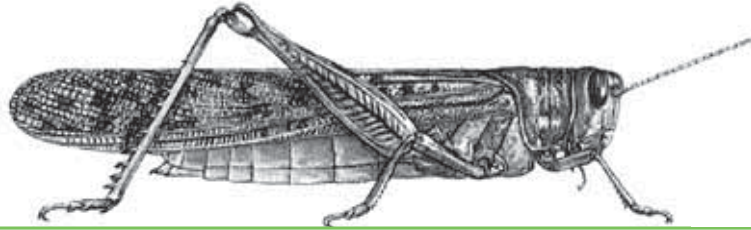
Desert Locust Summary

Criquet pèlerin - Situation résumée



FORECAST TO: PREVISION AU: 15.09.11	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 2011 juillet 2011	swarms or hopper bands	adults / hoppers adultes / larves	
	essaims ou bandes larvaires	in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures			
mature or partly mature adults adultes matures ou partiellement matures			
adults, maturity unknown adultes, maturité inconnue			
egg laying or eggs pontes ou œufs			
hoppers larves			
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)			



warning level: **CALM**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 395



**General Situation during August 2011
Forecast until mid-October 2011**

(2 Sept 2011)

Low numbers of solitary Desert Locust adults persisted in some of the summer breeding areas in the northern Sahel of Mauritania, Mali, Niger and Sudan during August. Similar numbers are likely to be present in eastern Chad and western Eritrea. Small-scale breeding was reported in Mauritania and Niger. In Northwest Africa, ground teams in Morocco and Algeria treated residual populations of *transiens* hopper and adult groups from spring breeding. In Southwest Asia, low numbers of solitary adults were present along both sides of the Indo-Pakistan border. During the forecast period, small-scale breeding will occur in areas of recent rainfall in the northern Sahel between Mauritania and western Eritrea, along both sides of the Indo-Pakistan border, and perhaps in the interior of Yemen, causing locust numbers to increase.

Western Region. Low numbers of solitary adults were present in parts of the summer breeding areas in the northern Sahel of **Mauritania**, northern **Mali**, and western and northern **Niger** during August. Good rains fell in most of these areas, causing ecological conditions to remain favourable for breeding. Low numbers of locusts are also likely to be present in eastern **Chad**. Although small-scale breeding was only detected in southwest Mauritania and western Niger, it is almost certainly in progress in the other frontline countries and will continue during the forecast period, causing locust numbers to increase further. In Northwest Africa, ground teams treated residual

infestations of hopper and adult groups south of the Atlas Mountains in **Morocco** (1,175 ha) and **Algeria** (40 ha). During the forecast period, low numbers of locusts are expected to appear in southern Algeria and in areas of recent heavy rainfall in the southeastern part of **Western Sahara**. Limited breeding could occur in both places.

Central Region. Average rains fell during August in the summer breeding areas in northern **Sudan** and low numbers of solitary adults were present in North Kordofan, Khartoum and River Nile States. Small-scale breeding will cause locust numbers to increase during the forecast period. Although reports were not received from **Eritrea**, a similar situation and forecast are expected. Low numbers of locusts are likely to be present and breeding on a small scale in the interior of **Yemen** where good rains fell during August. Unfortunately, surveys could not be carried out to confirm this. During the forecast period, locust numbers are expected to increase in areas of recent rainfall in Yemen. No locusts were reported elsewhere in the Region.

Eastern Region. Low numbers of solitary adults were present along both sides of the Indo-Pakistan border in Cholistan, **Pakistan** and Rajasthan, **India**. As ecological conditions remain favourable for breeding due to the seasonal monsoon rains, small-scale breeding will cause locust numbers to increase during the forecast period.

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DESERT LOCUST BULLETIN



Weather & Ecological Conditions in August 2011

Seasonal rains continued during August in the northern Sahel between Mauritania and Eritrea as well as along parts of the Indo-Pakistan border, causing vegetation to become green. As a result, ecological conditions were favourable for small-scale breeding.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) continued its northward movement over the northern Sahel in West Africa during August, reaching 21N over Mali. Its position during the second decade was further north than normal between Mali and Chad while it was normal over Mauritania. In Mauritania, good rains fell in southern and central areas, causing vegetation to become green west of Rkiz, near Boutilimit and south of 1720N from Aleg to Nema. Some rains also fell in the northwest and north (Inchiri, Adrar and Tiris Zemmour) while heavier rains fell in adjacent areas of southeast Western Sahara near Agwanit but vegetation remained dry. In southeast Mauritania, heavy rains fell northeast of Oualata on the Malian border. In Mali, light to moderate rains fell in the Adrar des Iforas and heavier rains fell between Araouane and Timetrine and in southern Tamesna. Vegetation was becoming green near Gao and Menaka, and in the main wadis of the Adrar des Iforas. In Niger, good rains fell in Tamesna and the Air Mountains, and vegetation was becoming green in the southern portions of both areas. In Chad, good rains fell at times over the northern Sahel, reaching Beurkia and Fada, and annual vegetation became green in the east as far north as Kalait. In Northwest Africa, light rain associated with the ITCZ fell in southern Algeria. In Morocco, vegetation had dried out along the southern side of the Atlas Mountains in the absence of rainfall.

In the **Central Region**, the ITCZ position over Sudan was about normal for August, causing good rains to fall at times in the summer breeding areas of the interior of Sudan south of 17N and in adjacent areas of western Eritrea. In Sudan, vegetation was slow in becoming green except in West Darfur, parts of West Kordofan, a few areas of North Kordofan

between Sodiri and Umm Saiyala, and along the Nile River in White Nile, Khartoum, River Nile and Northern States. Vegetation was also becoming green east of Shendi and north of Kassala. In Eritrea, vegetation was becoming green in the southern part of the western lowlands just north of Teseney. In Saudi Arabia, ecological conditions were favourable for breeding on the southern Red Sea coastal plains near Jizan as a result of good rains during August. In Yemen, good rains fell at the end of the month in the interior, especially near the Omani border, and along parts of the Red Sea and Gulf of Aden coasts.

In the **Eastern Region**, rainfall associated with the monsoon along both sides of the Indo-Pakistan border was about normal for August. In Pakistan, very heavy rains fell during the first fortnight of the month in parts of the Tharparkar Desert (Mithi 245 mm, Mirpurkhas 245 mm, Chore 162 mm) while only light showers occurred in Cholistan. Annual vegetation was becoming green in Rajasthan, India between Barmer and the Rajasthan Canal as well as west of Sam, and from the canal to adjacent areas in Cholistan, Pakistan.



Area Treated

Algeria	40 ha (August)
Morocco	1,175 ha (August)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During August, isolated solitary adults were maturing at a few places in the south between Tamchekket (1714N/1040W) and Timbedra (1614N/0809W), in the centre northwest of Moudjeria (1752N/1219W), and in the southwest near Rkiz (1658N/1514W). Copulating adults at densities up to 300 adults/ha were seen near Rkiz.

• FORECAST

Small-scale breeding will cause locust numbers to increase in the southwest, in Trarza and Tagant between Aguilal Faye and Tidjikja, and in parts of Brakna, Assaba and the two Hohds.

Mali

• SITUATION

During August, isolated immature and mature solitary adults were seen during ground surveys at a few places in the Adrar des Iforas near Aguelhoc (1927N/0052E) and in central Tamesna south of Tin Essako (1826N/0229E).

• FORECAST

Small-scale breeding will cause locust numbers to increase in the Tilemsi Valley, Adrar des Iforas, Tamesna and Timetrine.

Niger

• SITUATION

During August, isolated third to fifth instar solitary hoppers from egg laying in late July and mature solitary adults were present in the west between Filingué (1421N/0319E) and the Malian border. Scattered immature and mature solitary adults were seen in a few places between Agadez (1700N/0756E) and Arlit (1843N/0721E).

• FORECAST

Small-scale breeding will cause locust numbers to increase in the Tillabéri area, Tamesna, the western Air Mountains and the northern Sahel.

Chad

• SITUATION

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

• FORECAST

Small-scale breeding will cause locust numbers to increase in the northern parts of Kanem, Batha and Biltine as well as in parts of BET in areas of recent rainfall and green vegetation.

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

During August, mature solitary adults and first instar hoppers were present in one cropping area near Beni Abbes (3011N/0214W). Ground teams treated 40 ha. No locusts were seen elsewhere.

• FORECAST

Low numbers of adults are likely to appear in the

southern Sahara and breed on a small scale in areas of recent rainfall.

Morocco

• SITUATION

During August, residual locust infestations declined further in the northeast. Ground teams treated 1,175 ha of late instar hoppers and immature *transiens* adult groups, at densities up to 3 locusts/m², between Bouarfa (3232N/0159W) and the Algerian border. By the last decade of the month, no locusts were reported in the area.

• FORECAST

Low numbers of locusts may appear in areas of recent heavy rains in the southeast part of Western Sahara, and perhaps breed on a small scale.

Libyan Arab Jamahiriya

• SITUATION

No reports were received during August.

• FORECAST

A few solitary adults may be present and could persist near Ghat. No significant developments are likely.

Tunisia

• SITUATION

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

• FORECAST

No significant developments are likely.

CENTRAL REGION

Sudan

• SITUATION

During August, scattered immature and mature solitary adults at densities up to 150 adults/ha were present in a few places south of Sodiri (1423N/2906E) in North Kordofan, and along the Atbara River southeast of Atbara (1742N/3400E). Egg laying was reported east of Khartoum (1533N/3235E) on the 16th. No locusts were seen along the Nile between Khartoum and Abu Hamed (1932N/3320E).

• FORECAST

Small-scale breeding will occur and low numbers of hoppers and fledglings will be present in parts of North Darfur, North Kordofan, White Nile, River Nile, Northern, Kassala and Red Sea states. Consequently, locust numbers will increase in these areas.



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Eritrea

- SITUATION

No reports were received during August.

- FORECAST

Small-scale breeding is almost certainly in progress in areas of recent rainfall in the southern part of the western lowlands. This will cause locust numbers to increase along Khor Baraka. Regular surveys should be carried out during the next few months.

Ethiopia

- SITUATION

No locusts were seen during surveys carried out in the northern regions of Amhara and Tigray in August.

- FORECAST

No significant developments are likely.

Djibouti

- SITUATION

No reports were received during August.

- FORECAST

No significant developments are likely.

Somalia

- SITUATION

No reports were received during August.

- FORECAST

No significant developments are likely.

Egypt

- SITUATION

No reports were received during August.

- FORECAST

No significant developments are likely.

Saudi Arabia

- SITUATION

No locusts were seen during surveys carried out near Mecca (2125N/3949E) and in the central and northern interior in August.

- FORECAST

Low numbers of adults may appear in areas of recent rainfall on the southern Red Sea coastal plains near Jizan.

Yemen

- SITUATION

Locust surveys could not be carried out during August and no locusts were reported.

- FORECAST

Low numbers of locusts may present in the interior between Marib and Thamud where small-scale breeding is likely to occur in areas of recent rainfall in the plateau north of Wadi Hadhramaut between Minwakh, Thamud and the Omani border. Scattered adults may be present in areas of recent rainfall on the Red Sea coast.

Oman

- SITUATION

No locusts were seen during surveys carried out in Musandam and Buraimi regions in July and August. No locusts were reported elsewhere during August.

- 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 coast near Jask (2540N/5746E) in August.

- FORECAST

No significant developments are likely.

Pakistan

- SITUATION

During the first fortnight of August, isolated mature solitary adults persisted at ten places in Cholistan along the Indian border south of Bahawalpur (2924N/7147E) and at one location in Sukkur on the border east of Rohri (2739N/6857E).

- Forecast

Small-scale breeding will cause locust numbers to increase along the Indian border in Cholistan, Khaipur and Tharparkar deserts.

India

- SITUATION

During August, isolated solitary immature and mature adults were seen at two places north of Phalodi (2706N/7222E) and at one location on the Pakistani border southwest of Barmer (2543N/7125E). No locusts were seen elsewhere during surveys undertaken in Rajasthan and Gujarat.

- **FORECAST**

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

Afghanistan

- **SITUATION**

No reports received.

- **FORECAST**

No significant developments are likely.



Announcements

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

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

Google site. FAO DLIS has created a Google site (<https://sites.google.com/site/faodlis>) for national locust information officers to share problems, solutions and tips in using new technologies (eLocust2, eLocust2Mapper, RAMSES, remote sensing) and to make available the latest files for downloading. The site replaces the FAODLIS Google group, which will no longer be maintained. Interested users should contact Keith Cressman (keith.cressman@fao.org) for details.

MODIS imagery. Columbia University's International Research Institute for Climate and Society (IRI) provides 16-day 250-metre resolution

MODIS imagery as well as daily and decadal rainfall imagery for monitoring breeding conditions in the Desert Locust recession area. These products can be downloaded in different formats suitable for GIS at: http://iridl.ldeo.columbia.edu/maproom/.Food_Security/.Locusts/index.html. The site is available in English and French. Address comments and questions to Pietro Ceccato (pceccato@iri.columbia.edu).

Greenness maps. Geo-referenced dynamic greenness maps that show the evolution of green vegetation in the Desert Locust recession area for three months can be downloaded every ten days from DevCoCast (<http://www.devcoCast.eu/user/images/dl/Form.do>). The new product was developed by the Université catholique de Louvain and the Flemish Institute for Technical Research in Belgium and funded by the Belgium Science Policy Office. The maps can be used in a GIS to help guide survey teams and in locust analysis and forecasting.

Twitter. FAO DLIS disseminates updates on the Desert Locust situation via Twitter, a social media service. The updates can be followed on some mobile phones in some countries (send an SMS to 40404: 'Follow faolocust' (no quotes) and through the Internet (<http://twitter.com/faolocust>) by searching on 'DesertLocust'.

eLERT. The Locust Group has created a dynamic and interactive online reference database that can be used to respond to assistance needs in a fast evolving locust emergency. It provides information on pesticides, equipment, suppliers, environmental monitoring, contracts, and contacts. The eLERT should help agencies to act more effectively in coping with locust threats. Visit eLert at <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 Section – Briefs
- **Desert Locust risk map.** Archives Section – Risk maps
- **Summer 2011 forecast.** Home page



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2011 events. The following activities are scheduled or planned:

- **EMPRES/WR.** 10th Liaison Officer meeting, N'Djamena, Chad (12-16 December)
- **EMPRES/WR.** 7th Consultative Committee meeting, N'Djamena, Chad (19-20 December)
- **DLCC.** 40th session, Cairo, Egypt (to be confirmed)



Glossary of terms

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

NON-GREGARIOUS ADULTS AND HOPPERS

ISOLATED (FEW)

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

SCATTERED (SOME, LOW NUMBERS)

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

GROUP

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

ADULT SWARM AND HOPPER BAND SIZES

VERY SMALL

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

SMALL

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

MEDIUM

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

LARGE

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

VERY LARGE

- swarm: 500+ km² • band: 50+ ha

RAINFALL

LIGHT

- 1 - 20 mm of rainfall.

MODERATE

- 21 - 50 mm of rainfall.

HEAVY

- more than 50 mm of rainfall.

OTHER REPORTING TERMS

BREEDING

- the process of reproduction from copulation to fledging.

SUMMER RAINS AND BREEDING

- 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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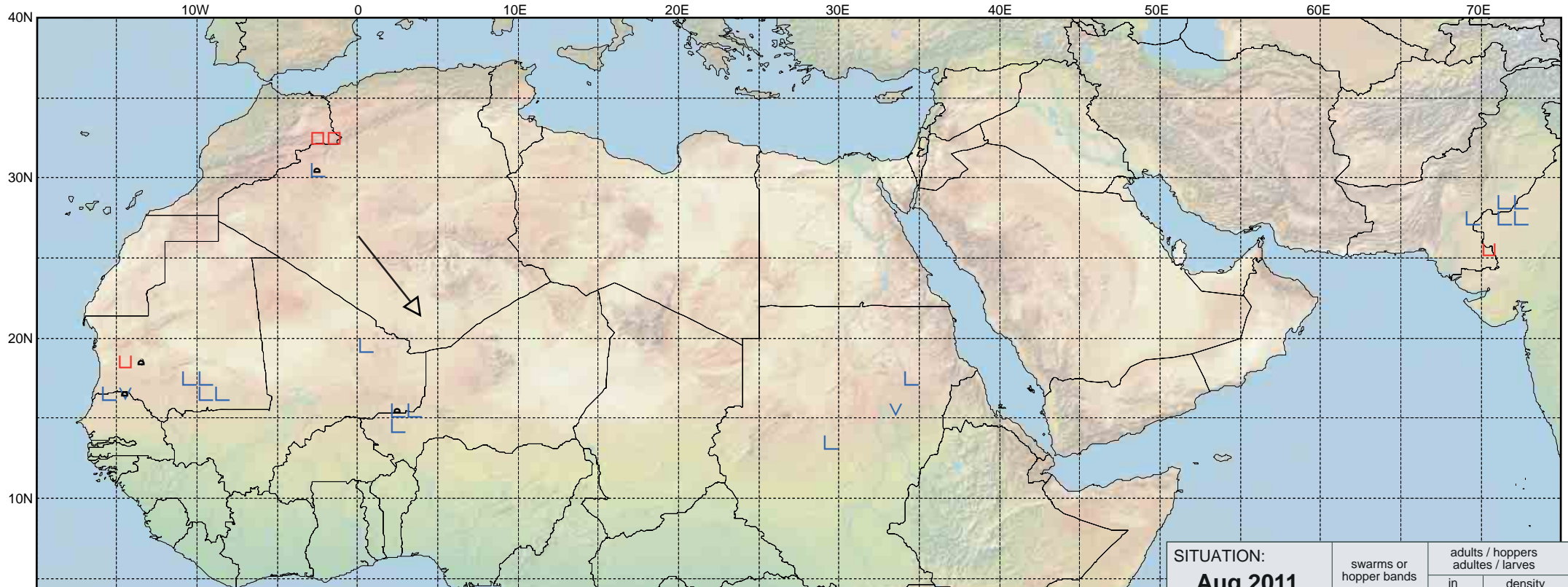
DESERT LOCUST BULLETIN








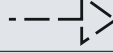
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






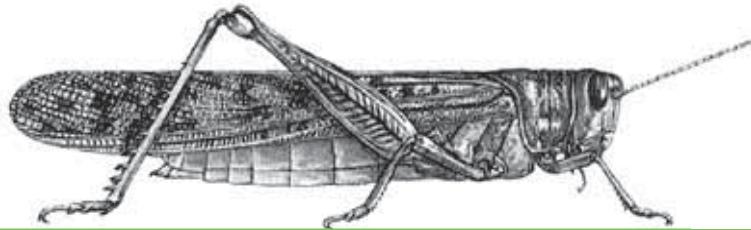
Desert Locust Summary

Criquet pèlerin - Situation résumée



FORECAST TO: PREVISION AU: 15.10.11	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favorables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: Aug 2011 août 2011	swarms or hopper bands	adults / hoppers adultes / larves	
	essaims ou bandes larvaires	in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures			
mature or partly mature adults adultes matures ou partiellement matures			
adults, maturity unknown adultes, maturité inconnue			
egg laying or eggs pontes ou œufs			
hoppers larves			
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)			



warning level: **CALM**

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FAO Emergency Centre for Locust Operations



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**General Situation during September 2011
Forecast until mid-November 2011**

(3 Oct 2011)

The Desert Locust situation remained calm during September. Despite poor rains in most of the summer breeding areas in the northern Sahel of West Africa and Sudan, small-scale breeding occurred in a few places but locust numbers remained low. During the forecast period, small-scale breeding will occur in northern Chad where good rains fell in September. Breeding will decline in Mauritania, Mali and Niger, and adults are likely to concentrate in those few areas that remain green. Good rains fell on the Red Sea coast of Yemen where scattered adults are probably present and may breed during the next few months. In southeast Pakistan, very heavy rains and floods occurred for the second consecutive month. Only low numbers of adults were present along both sides of the Indo-Pakistan border where limited breeding took place. Breeding will end in India but may occur and continue for several months once floodwaters recede in Pakistan.

Western Region. Seasonal rains were poor and lower than normal in the summer breeding areas of the northern Sahel in **Mauritania, Mali** and **Niger** during September. Consequently, only low numbers of solitary adults were present in parts of southern, central and western Mauritania. Breeding occurred in a few places but on a much smaller scale than in most years at this time. A similar situation was present in northern Mali and Niger although regular surveys were limited by persistent insecurity. On the

other hand, good rains fell in the summer breeding areas in northern **Chad** where small-scale breeding was probably underway but surveys were not carried out to confirm this. During the forecast period, small-scale breeding will occur mainly in Chad and, to a lesser extent, in the other countries. As vegetation dries out, adults are likely to concentrate in western Mauritania, in northern Mali (Adrar des Iforas) and in Niger (Tamesna and western Air Mountains). In Northwest Africa, isolated adults were present in northeast **Morocco** in early September. No locusts were reported elsewhere in the Region.

Central Region. Desert Locust numbers remained low in the summer breeding areas of **Sudan** due to poor rainfall in September. Only scattered solitary adults were seen in a few places. No locusts were seen in the western lowlands of **Eritrea**. Nevertheless, small-scale breeding will continue during the forecast period, causing locust numbers to increase slightly in both countries. By mid-November, breeding is likely to come to an end and low numbers of adults will start to move towards the Red Sea coastal plains. Good rains fell on the Red Sea coast in **Yemen** where scattered adults are probably present, but surveys could not be carried out to confirm this. During the forecast period, small-scale breeding is expected to occur on the coast, causing locust numbers to increase slightly. Locusts may appear and also breed in adjacent southern coastal areas in **Saudi Arabia**. No locusts were reported elsewhere in the Region.

Eastern Region. Low numbers of solitary adults persisted along both sides of the Indo-Pakistan border in Cholistan, **Pakistan** and Rajasthan, **India**, as breeding conditions remained favourable from the monsoon rains. Small-scale breeding was detected in Cholistan. Very heavy rains and floods occurred for the second consecutive month in Tharparkar Desert, Pakistan. Once the floodwaters recede, breeding conditions are expected to remain favourable for a

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 made available on the Internet.

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DLIS: www.fao.org/ag/locusts



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number of months and much longer than in most years. No locusts were reported in Iran.



Weather & Ecological Conditions in September 2011

Good rains fell in the summer breeding areas in Chad and Eritrea but were poor in Mauritania, Mali, Niger and Sudan. Very heavy rains and flooding occurred in Tharparkar Desert, Pakistan.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) remained stationary during September over the northern Sahel in West Africa, oscillating around 18N over Mauritania and 16-17N over Mali, Niger and Chad. In Mauritania, light rains fell in parts of the summer breeding areas in the south, mainly during the second decade in Trarza and Brakna, but the distribution and quantity of rain during September were much poorer than in most years. In Mali, very little rain fell in the northeast (Timetrine, Tilemsi Valley, Adrar des Iforas, northern Tamesna) except for light showers south of Kidal and in a few places between Aguelhoc and the Algerian border between Timeiaouine and Bir Bou Mokhtar. Similarly, very little rain occurred in the summer breeding areas of the Tamesna in northern Niger. Most of the rain fell south of Tassara and Agadez, and in parts of the Air Mountains between Arlit and Iferouane. As a result of the poor rainfall, ecological conditions were less favourable than normal in the summer breeding areas in Mauritania, Mali and Niger. In Chad, moderate showers fell during the second decade in Kanem, Batha and in the northeast as far north as Kalait. Ecological conditions were favourable for breeding in most areas. In Northwest Africa, dry conditions persisted in Morocco except in a few places near Bouarfa where small patches of green vegetation were present. In Algeria, annual vegetation was becoming green in some places along the Malian border from recent rains.

In the **Central Region**, the ITCZ position over Sudan during September was further south than normal, causing lower than average rainfall in the summer breeding areas. Nevertheless, light rains did fall in parts of North Darfur, North Kordofan (south

of Abu Uruq), White Nile, Khartoum and Kassala States. Rainfall declined during the last decade in Darfur and Kordofan. In Eritrea, good rains fell in the western lowlands. Consequently, ecological conditions were favourable for breeding in both countries. In the Horn of Africa, light to moderate showers fell at times in eastern Ethiopia (Dire Dawa and Jijiga) and on the plateau in northwest Somalia. Good rains fell throughout the month on the Red Sea coast in Yemen, and at times on the coast of Saudi Arabia near Qunfidah and Jizan. As a result, ecological conditions were probably favourable for breeding in Yemen. Dry conditions prevailed in Oman.

In the **Eastern Region**, unusually heavy rains and flooding occurred in early September in the Tharparkar Desert of Pakistan where very heavy rains had fallen in August. Good rains associated with the monsoon continued to fall along both sides of the Indo-Pakistan border until the third decade of the month. Once the floodwaters recede in Tharparkar, breeding conditions are expected to remain favourable for a number of months and much longer than in most years.



Area Treated

No control operations were reported during September.



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During September, isolated mature solitary adults were present in the south between Tamchekket (1714N/1040W) and Nema (1636N/0715W), in the centre between Tidjikja (1833N/1126W) and Nouakchott (1809N/1558W), in the southwest near Rkiz (1658N/1514W), and in the northwest near Akjoujt (1945N/1421W). Small-scale breeding occurred near Nema and in Trarza but locust numbers remained low.

• FORECAST

Small-scale breeding will continue in areas of recent rainfall in the south, centre, southwest and northwest, causing locust numbers to increase slightly but remain below threatening levels. As vegetation dries out, locusts will concentrate in areas that remain green. A gradual shift of populations from the southeast to the northwest is expected to occur.

Mali

• SITUATION

During the first half of September, scattered immature and mature solitary adults were seen during ground surveys in Timetrine west of Aguelhoc (1927N/0052E) and in the Adrar des Iforas from Kidal (1827N/0125E) to the Algerian border. Copulating adults, at densities up to 700 adults/ha, were seen at one place in Timetrine on the 12th.

• FORECAST

Small-scale breeding will cause locust numbers to increase in the Tilemsi Valley, Adrar des Iforas, Tamesna and Timetrine. As vegetation dries out, adults are likely to concentrate and may form a few small groups.

Niger

• SITUATION

During September, small-scale breeding occurred on the central Tamesna Plains from In Abangharit (1754N/0559E) to the western side of the Air Mountains where isolated immature and mature solitary adults were present mixed with isolated hoppers. In the southeast, a similar situation was also reported northeast of Diffa (1318N/1236E) in the Lake Chad basin. No locusts were seen in the southern Air Mountains south of Timia (1809N/0846E).

• FORECAST

Small-scale breeding will continue in Tamesna, causing locust numbers to increase slightly.

Chad

• SITUATION

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

• FORECAST

Small-scale breeding will cause locust numbers to increase in the northern parts of Kanem, Batha and Biltine as well as in parts of BET in areas of recent rainfall and green vegetation.

Senegal

• SITUATION

No surveys were carried out and no locusts were reported in 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

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

• FORECAST

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

Morocco

• SITUATION

During the first decade of September, isolated immature solitary adults were present at four places in the northeast between Bouarfah (3232N/0159W) and Figuig (3207N/0113W).

• FORECAST

No significant developments are likely.

Libyan Arab Jamahiriya

• SITUATION

No reports were received during September.

• FORECAST

A few solitary adults may be present and could persist near Ghat. 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 solitary adults at densities up to 200 adults/ha were present in North Kordofan between Sodiri (1423N/2906E) and Umm Saiyala (1426N/3112E), in River Nile State near Ed Damer (1734N/3358E), and in Kassala State northwest of Kassala (1527N/3623E) and near Derudeb (1731N/3607E). No locusts were seen in the Baiyuda Desert.

• FORECAST

Small-scale breeding will continue in parts of North Darfur, North Kordofan, White Nile, River Nile, Northern, Kassala and Red Sea states but will be



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difficult to detect due to low numbers of locusts. By the end of the forecast period, breeding is likely to come to an end and low numbers of adults will start to move towards the Red Sea coastal plains.

Eritrea

• SITUATION

No locusts were seen during a survey in the western lowlands on 16-20 September.

• FORECAST

As small-scale breeding is almost certainly in progress in areas of recent rainfall in parts of the western lowlands, locust numbers will increase slightly along Khor Baraka. By the end of the forecast period, breeding is likely to come to an end and low numbers of adults will start to move towards the Red Sea coastal plains.

Ethiopia

• SITUATION

No locusts were seen during surveys in the northern regions of Amhara and Tigray during September.

• FORECAST

No significant developments are likely.

Djibouti

• SITUATION

No reports were received during September.

• FORECAST

No significant developments are likely.

Somalia

• SITUATION

No locusts were seen during surveys carried out on 5-10 September along the plateau, escarpment and coastal plains in the northwest.

• FORECAST

No significant developments are likely.

Egypt

• SITUATION

No locusts were seen during surveys carried out in September on the Red Sea coast between Shalatyn (2308N/3535E) and the Sudanese border and on the western side of Lake Nasser between Abu Simbel (2219N/3138E) and Tushka (2247N/3126E).

• FORECAST

No significant developments are likely.

Saudi Arabia

• SITUATION

During September, no locusts were seen during surveys carried out near Mecca (2125N/3949E) and in the interior north of Riyadh (2439N/4646E).

• FORECAST

No significant developments are likely.

Yemen

• SITUATION

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

• FORECAST

Scattered adults may be present and breeding on small scale in areas of recent rainfall on the Red Sea coast. This is likely to continue during the forecast period.

Oman

• SITUATION

No locusts were seen during surveys carried out in Dhofar, Dakhliya and Batinah regions in September. No locusts were reported elsewhere.

• 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 a survey on the southeastern coast near Jask (2540N/5746E) and Chabahar (2517N/6036E) in September.

• FORECAST

No significant developments are likely.

Pakistan

• SITUATION

During the second fortnight of August, isolated mature solitary adults persisted in Cholistan and Tharparkar deserts.

During the first fortnight of September, isolated mature solitary adults were present on the coast west of Karachi near Uthal (2548N/6637E), and persisted at a few places along the Indian border in Cholistan. The situation remained the same during the second fortnight, except that isolated third instar solitary hoppers were seen at one place in Cholistan near the Indian border.

- Forecast

Small-scale breeding will continue along the Indian border in Cholistan, Khaipur and Tharparkar deserts, causing locust numbers to increase slightly. There is a risk of prolonged breeding in Tharparkar as floodwaters recede.

India

- SITUATION

During September, isolated immature and mature solitary adults were present in Rajasthan between Phalodi (2706N/7222E), Bikaner (2801N/7322E) and the Pakistani border. No locusts were seen elsewhere during surveys undertaken in Rajasthan and Gujarat.

- FORECAST

Small-scale breeding will cause locust numbers to increase slightly in Rajasthan but is expected to finish by the end of the forecast period.

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.

Google site. FAO DLIS has created a Google site (<https://sites.google.com/site/faodlis>) for national locust information officers to share problems, solutions and tips in using new technologies (eLocust2, eLocust2Mapper, RAMSES, remote sensing) and to make available the latest files for downloading. The site replaces the FAODLIS Google group, which will no longer be maintained. Interested users should contact Keith Cressman (keith.cressman@fao.org) for details.

MODIS imagery. Columbia University's International Research Institute for Climate and Society (IRI) provides 16-day 250-metre resolution MODIS imagery as well as daily and decadal rainfall imagery for monitoring breeding conditions in the Desert Locust recession area. These products can be downloaded in different formats suitable for GIS at: http://iridl.ideo.columbia.edu/maproom/.Food_Security/.Locusts/index.html. The site is available in English and French. Address comments and questions to Pietro Ceccato (pceccato@iri.columbia.edu).

Greenness maps. Geo-referenced dynamic greenness maps that show the evolution of green vegetation in the Desert Locust recession area for three months can be downloaded every ten days from DevCoCast (<http://www.devcoast.eu/user/images/dl/Form.do>). The new product was developed by the Université catholique de Louvain and the Flemish Institute for Technical Research (VITO) in Belgium and funded by the Belgium Science Policy Office. The maps can be used in a GIS to help guide survey teams and in locust analysis and forecasting.

Twitter. FAO DLIS disseminates updates on the Desert Locust situation via Twitter, a social media service. The updates can be followed on some mobile phones in some countries (send an SMS to 40404: 'Follow faolocust' (no quotes) and through the Internet (<http://twitter.com/faolocust>) by searching on 'DesertLocust'.

eLERT. The Locust Group has created a dynamic and interactive online reference database that can be used to respond to assistance needs in a fast evolving locust emergency. It provides information on pesticides, equipment, suppliers, environmental



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monitoring, contracts, and contacts. The eLERT should help agencies to act more effectively in coping with locust threats. Visit eLERT at <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 Section – Briefs
- **Desert Locust risk map.** Archives Section – Risk maps
- **Summer 2011 forecast.** Home page

2011 events. The following activities are scheduled or planned:

- **EMPRES/WR** Contingency Planning Simulation Exercise, Bamako, Mali (17-21 October)
- **EMPRES/WR.** 10th Liaison Officer meeting, N'Djamena, Chad (12-16 December)
- **EMPRES/WR.** 7th Consultative Committee meeting, N'Djamena, Chad (19-20 December)
- **DLCC.** 40th session, Cairo, Egypt (to be confirmed)



Glossary of terms

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

NON-GREGARIOUS ADULTS AND HOPPERS

ISOLATED (FEW)

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

SCATTERED (SOME, LOW NUMBERS)

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

GROUP

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

ADULT SWARM AND HOPPER BAND SIZES

VERY SMALL

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

SMALL

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

MEDIUM

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

LARGE

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

VERY LARGE

- swarm: 500+ km² • band: 50+ ha

RAINFALL

LIGHT

- 1 - 20 mm of rainfall.

MODERATE

- 21 - 50 mm of rainfall.

HEAVY

- more than 50 mm of rainfall.

OTHER REPORTING TERMS

BREEDING

- the process of reproduction from copulation to fledging.

SUMMER RAINS AND BREEDING

- 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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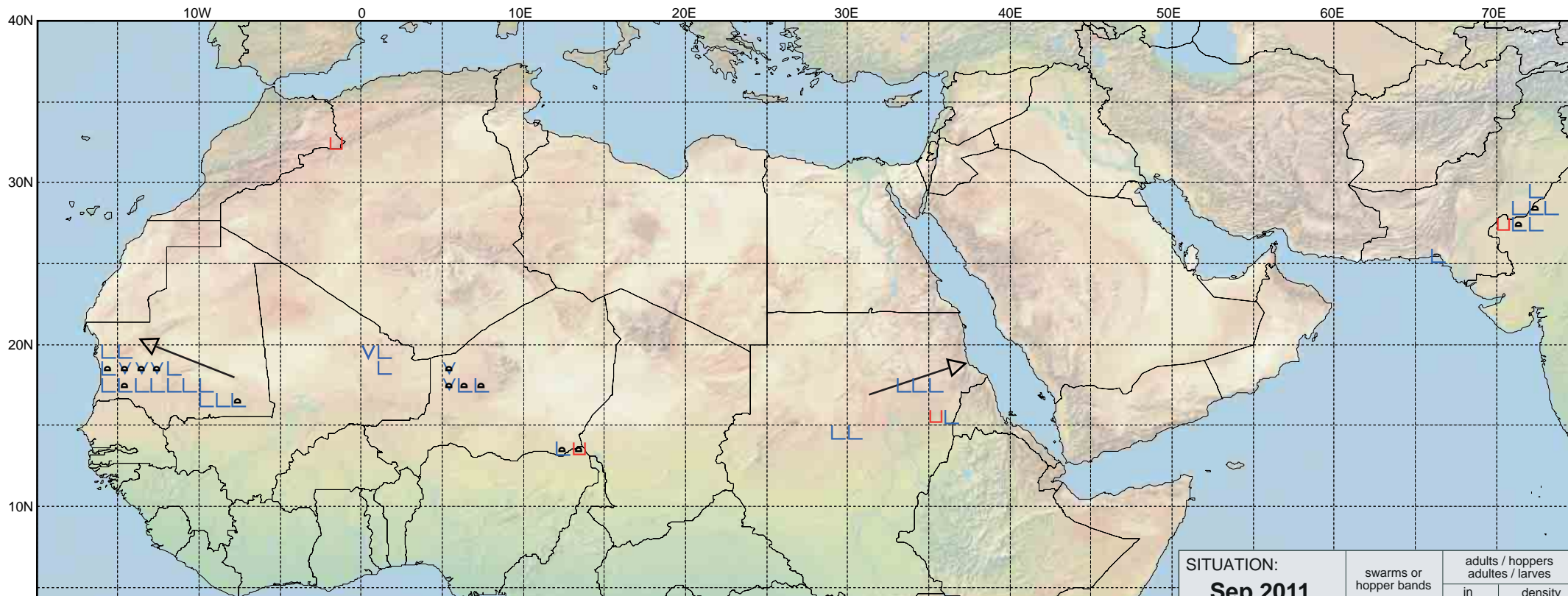
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














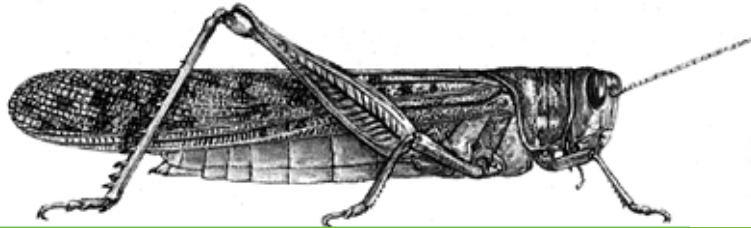
Desert Locust Summary

Criquet pèlerin - Situation résumée



FORECAST TO: PREVISION AU: 15.11.11	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 2011 sep 2011	swarms or hopper bands	adults / hoppers adultes / larves	
	essaims ou bandes larvaires	in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures			
mature or partly mature adults adultes matures ou partiellement matures			
adults, maturity unknown adultes, maturité inconnue			
egg laying or eggs pontes ou œufs			
hoppers larves			
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)			



warning level: **CALM**

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FAO Emergency Centre for Locust Operations



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**General Situation during October 2011
Forecast until mid-December 2011**

(3 Nov 2011)

The Desert Locust situation remained calm during October due to unusually poor rainfall in the summer breeding areas of the northern Sahel in West Africa and Sudan, and an early end to monsoon rains along the Indo-Pakistan border. Nevertheless, small-scale breeding occurred in western Mauritania and on the coast in Pakistan, and scattered adults were present in Mauritania, Mali, Niger, Chad, Sudan and Pakistan. Limited ground control operations were carried out in southeastern Mauritania and northern Mali. In general, locust numbers were much lower this year at the end of the summer breeding period than in previous years. During the forecast period, low numbers of adults will shift from the summer breeding areas to northwest Mauritania and to the winter breeding areas along both sides of the Red Sea. Small-scale breeding will occur in these areas once the winter rains fall.

Western Region. No significant rain fell during October in the summer breeding areas of the northern Sahel. Consequently, only low numbers of solitary adults were present in parts of Mauritania, northern Mali, Niger and Chad. Small-scale breeding occurred in western Mauritania. Ground teams treated 1,200 ha of adult groups in northern Mali and 60 ha of solitary adults in southeast Mauritania. During the forecast period, low numbers of adults will move from southern Mauritania to the northwest of the country where there is a risk that higher than normal rain may fall during November. If this occurs, small-scale

breeding will take place, causing locust numbers to increase. Elsewhere, scattered adults may persist in parts of northern Mali, Niger and Chad. In Northwest Africa, no locusts were reported in October. During the forecast period, scattered adults may appear in the **Western Sahara** and breed if rainfall occurs. Small-scale breeding could also take place in areas of recent rainfall in the central Sahara of eastern **Algeria** and southwestern **Libya**.

Central Region. Locust numbers continued to remain low in the summer breeding areas of **Sudan** due to poor rainfall for a second consecutive month. Only scattered solitary adults were seen in a few places. Although locusts have not been seen so far in the winter breeding areas along the Red Sea coastal plains in Sudan and **Eritrea**, scattered adults are expected to appear and breed on a small scale with the onset of the winter rains. Small-scale breeding is also likely during the forecast period on the Red Sea coast in **Yemen** and **Saudi Arabia**. No locusts were reported elsewhere in the region.

Eastern Region. Locust numbers declined in the summer breeding areas along both sides of the Indo-Pakistan border in Cholistan, **Pakistan** and Rajasthan, **India** as no further monsoon rains fell and vegetation was drying out in October. Small-scale breeding occurred on the coast west of Karachi but locust numbers remained low. There remains a low risk of potential breeding in Tharparkar Desert of southeast Pakistan where heavy rains and floods occurred in August and September. No locusts were reported in **Iran**. No significant developments are expected during the forecast period.

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

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DLIS: www.fao.org/ag/locusts



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Weather & Ecological Conditions in October 2011

As a result of poor rainfall, unusually dry conditions prevailed in the summer breeding areas in the northern Sahel of West Africa and Sudan as well as along both sides of the Indo-Pakistan border. Consequently, vegetation was drying out in all areas.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) shifted southwards beyond the summer breeding areas during October. Its mean position remained south of 14N, which is nearly 250 km further south than normal for this time of year. As a result, very little rain fell in the summer breeding areas during October. In Mauritania, light rain fell in Trarza and between Akjoujt and Zouerate on 1-2 October. Light rainfall may also have occurred in parts of Inchiri, Dakhlet Nouadhibou and southern Tiris-Zemmour at times during the second half of the month. In Mali, light rain may have fallen in the northwest near Taoudenni during the first half of October. No rain was reported in the Adrar des Iforas where only about half of the amount of rain has fallen this summer compared to last year. In Niger, light rain fell in eastern Tamesna and in the Air Mountains in early October. In eastern Chad, rains remained south of Abeche. Consequently, annual vegetation was drying out in all of the summer breeding areas of the northern Sahel from Mauritania to Chad, and ecological conditions were less favourable than normal. In Northwest Africa, light rains may have fallen at times over parts of the central Sahara between In Salah, Algeria and Wadden, Libya.

In the **Central Region**, the ITCZ position over Sudan and Eritrea shifted southwards outside of the summer breeding areas during October. Similar to the Western Region, its mean position was further south than in most years. Consequently, no significant rain fell in the summer breeding areas of both countries and annual vegetation was drying out. In the winter breeding areas along both sides of the Red Sea, light rain fell at times on the Tihama coast of Yemen and along parts of the coast in Saudi Arabia near Qunfidah and Jizan. Ecological conditions were favourable for

breeding in Yemen and were expected to be improving in Saudi Arabia. No significant rain fell in northern Somalia or eastern Ethiopia where drought conditions prevailed. In northern Oman, light rain fell in some places of the interior between Ibra and Buraimi during the second week of October but breeding conditions remained unfavourable.

In the **Eastern Region**, no significant rain fell during October. In the summer breeding areas, vegetation was drying out along both sides of the Indo-Pakistan border except in the Tharparkar Desert of Pakistan where heavy rains and flooding occurred in August and September. In the spring breeding areas of southeastern Iran, light rains fell in the Jaz Murian Basin on 11 October but vegetation remained dry.



Area Treated

Mali	1,200 ha (8-12 October)
Mauritania	60 ha (October)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During October, immature and mature solitary adults persisted in the south between Tamchekket (1714N/1040W) and Nema (1636N/0715W), in the centre between Tidjikja (1833N/1126W) and Nouakchott (1809N/1558W), and in the southwest near Rkiz (1658N/1514W). Locust densities were less than 700 adults/ha. Small-scale breeding occurred in eastern Trarza, northern Brakna and western Tagant where isolated solitary hoppers of all instars were present between Aguilal Faye (1827N/1444W) and Tidjikja. Locust numbers increased slightly in the northwest (Inchiri and southwest Adrar) where scattered immature and mature solitary adults were present between Bennichab (1932N/1512W) and Oujefft (2003N/1301W). Limited breeding occurred southwest of Oujefft.

• FORECAST

Locust numbers will decline in the southwest and centre as adults move towards the northwest. There is a risk that higher than normal rains may fall during November in northern Trarza, Inchiri and southwest Adrar. If this occurs, small scale breeding will take place, causing locust numbers to increase.

Mali

• SITUATION

During October, immature solitary and *transiens* adults were forming small groups at two locations in Timetrine east of Ti-n-kar (1926N/0022W) where breeding was reported in September. Ground teams treated 1,200 ha on 8-12 October.

• FORECAST

Unless further rains fall, locust numbers will decline as vegetation dries in the Tilemsi Valley, Adrar des Iforas, Tamesna and Timetrine. Adults are expected to concentrate in any vegetation that remains green.

Niger

• SITUATION

During October, scattered immature solitary adults were present at a few places in the Tadres area southeast of In Gall (1651N/0701E).

• FORECAST

Locust numbers will decline in Tamesna and Tadres as vegetation continues to dry out. No significant developments are likely.

Chad

• SITUATION

During October, isolated immature and mature solitary adults were scattered in parts of Kanem between Mao (1406N/1511E) and Salal (1448N/1712E), in Batha between Haraz-Djombo (1357N/1926E) and Beurkia (1523N/1800E), and in the east from Abeche (1349N/2049E) to Fada (1714N/2132E). Small-scale breeding may have occurred in a few of these places.

• FORECAST

Locust numbers will decline in Kanem, Batha and the east as vegetation continues to dry out. No significant developments are likely.

Senegal

• SITUATION

No surveys were carried out and no locusts were reported in 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, no locusts were seen in the central Sahara near Adrar (2753N/0017W) and in the south near Tamanrasset (2250N/0528E).

• FORECAST

Low numbers of adults are likely to be present in the southern and eastern Sahara and breeding on a small scale in areas of recent rainfall.

Morocco

• SITUATION

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

• FORECAST

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

Libyan Arab Jamahiriya

• SITUATION

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

• FORECAST

A few solitary adults may be present and breeding in areas of recent rainfall in the southwest near Ghat. 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 mature solitary adults at densities up to 150 adults/ha were seen in a few places in River Nile State near Abu Hamed (1932N/3320E) and Atbara (1742N/3400E), and in Kassala State between Kassala (1527N/3623E) and Derudeb (1731N/3607E). No locusts were seen during surveys in North Kordofan and in the winter breeding areas along the southern Red Sea coastal plains between Suakin (1906N/3719E) and the Eritrean border, and in the Red Sea Hills near Tomala (2002N/3551E).

• FORECAST

Locust numbers will decline in the summer breeding area as adults move towards the winter breeding areas along the Red Sea coast. This movement will



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be limited and consist of scattered solitary adults. Small-scale breeding will occur on the Red Sea coastal plains once seasonal rains commence.

Eritrea

• SITUATION

During October, no locusts were seen during a survey along the central Red Sea coastal plains from south of Massawa (1537N/3928E) to Embere (1628N/3856E).

• FORECAST

Locust numbers will decline in the summer breeding area as adults move towards the winter breeding areas along the Red Sea coast. This movement will be limited and consist of scattered solitary adults. Small-scale breeding will occur on the Red Sea coastal plains once seasonal rains commence.

Ethiopia

• SITUATION

No locusts were seen during surveys in the northern regions of Amhara and Tigray and in the eastern region of Somali during October.

• FORECAST

No significant developments are likely.

Djibouti

• SITUATION

No reports were received during October.

• FORECAST

No significant developments are likely.

Somalia

• SITUATION

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

• FORECAST

No significant developments are likely.

Egypt

• SITUATION

During October, no locusts were seen during surveys carried out on the Red Sea coast near Shalatyn (2308N/3535E) and Abu Ramad (2224N/3624E), on the western shore of Lake Nasser between Abu Simbel (2219N/3138E) and Tushka (2247N/3126E), and on the eastern side of the lake.

• FORECAST

No significant developments are likely.

Saudi Arabia

• SITUATION

During October, no locusts were seen during surveys carried out in the interior between Riyadh (2439N/4646E) and the Iraqi border, and in the Asir Mountains near Khamis Mushait (1819N/4245E).

• FORECAST

Low numbers of adults may appear on the central and southern Red Sea coastal plains. Small-scale breeding is likely to take place in areas of recent rainfall near Qunfidah and Jizan, and elsewhere if rains fall during the forecast period.

Yemen

• SITUATION

No reports were received during October.

• FORECAST

Scattered adults may be present and breeding on small scale in areas of recent rainfall on the Red Sea coast. This is likely to continue during the forecast period.

Oman

• SITUATION

No locusts were seen during surveys carried out in the Buraimi region in October. No locusts were reported elsewhere.

• 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

During October, no locusts were seen during surveys on the southeastern coast near Jask (2540N/5746E) and Chabahar (2517N/6036E).

• FORECAST

No significant developments are likely.

Pakistan

• SITUATION

During the first fortnight of October, isolated mature solitary adults persisted at a few places along the Indian border in Cholistan, in Ghotki District east of Rohri (2739N/6857E), and on the coast west of Karachi near Uthal (2548N/6637E). Undetected small-scale laying occurred in the Uthal area where isolated

first to fourth instar solitarious hoppers were present. Isolated mature solitarious adults persisted in these areas during the remainder of the month.

- **Forecast**

Although locust numbers will decline in the summer breeding areas of Cholistan and Khairpur deserts, there remains a low risk of prolonged breeding in Tharparkar where heavy rains and floods occurred in August and September. Low numbers of adults may persist near Uthal.

India

- **SITUATION**

During the first fortnight of October, no locusts were seen during surveys carried out in Rajasthan and Gujarat. During the second fortnight, isolated mature solitarious adults were present at one place southwest of Bikaner (2801N/7322E).

- **FORECAST**

No significant developments are likely.

Afghanistan

- **SITUATION**

No reports received.

- **FORECAST**

No significant developments are likely.



Announcements

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Reports should be sent even if no locusts were found or if no surveys were conducted.

Google site. FAO DLIS has created a Google site (<https://sites.google.com/site/faodlis>) for national locust information officers to share problems, solutions and tips in using new technologies (eLocust2, eLocust2Mapper, RAMSES, remote sensing) and to make available the latest files for downloading. The site replaces the FAODLIS Google group, which will no longer be maintained. Interested users should contact Keith Cressman (keith.cressman@fao.org) for details.

MODIS imagery. Columbia University's International Research Institute for Climate and Society (IRI) provides 16-day 250-metre resolution MODIS imagery as well as daily and decadal rainfall imagery for monitoring breeding conditions in the Desert Locust recession area. These products can be downloaded in different formats suitable for GIS at: http://iridl.ldeo.columbia.edu/maproom/.Food_Security/.Locusts/index.html. The site is available in English and French. Address comments and questions to Pietro Ceccato (pceccato@iri.columbia.edu).

Greenness maps. Geo-referenced dynamic greenness maps that show the evolution of green vegetation in the Desert Locust recession area for three months can be downloaded every ten days from DevCoCast (<http://www.devcoast.eu/user/images/dl/Form.do>). The new product was developed by the Université catholique de Louvain and the Flemish Institute for Technical Research (VITO) in Belgium and funded by the Belgium Science Policy Office. The maps can be used in a GIS to help guide survey teams and in locust analysis and forecasting.

Twitter. FAO DLIS disseminates updates on the Desert Locust situation via Twitter, a social media service. The updates can be followed on some mobile phones in some countries (send an SMS to 40404: 'Follow faolocust' (no quotes) and through the Internet (<http://twitter.com/faolocust>) by searching on 'DesertLocust'.

eLERT. The Locust Group has created a dynamic and interactive online reference database that can



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Glossary of terms

DESERT LOCUST BULLETIN

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

be used to respond to assistance needs in a fast evolving locust emergency. It provides information on pesticides, equipment, suppliers, environmental monitoring, contracts, and contacts. The eLERT should help agencies to act more effectively in coping with locust threats. Visit eLERT at <http://sites.google.com/site/elertsite>.

EMPRES – Plant Pests group. Effective 1 October, Dr. Annie Monard has been appointed Senior Officer (Transboundary Plant Pests) and Team Leader of the Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases (EMPRES) group, AGPMM. She replaces Christian Pantenius who retired in August 2011.

CRC Secretary. Effective 1 November, Mr. Mamoon Al-Alawi replaced Dr. Munir Butrous (who retired in April 2011) as the CRC secretary. His office is at the FAO Near East Regional Office in Cairo, and he can be contacted by email (Mamoon.AIAlawi@fao.org) and telephone (+20 2 33316018).

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

- **Desert Locust situation updates.** Archives Section – Briefs
- **Desert Locust risk map.** Archives Section – Risk maps

2011-12 events. The following activities are scheduled or planned:

- **FAO Council.** 143rd session, Rome (28 November – 2 December)
- **EMPRES/WR.** 10th Liaison Officer meeting, N'Djamena, Chad (12-16 December)
- **EMPRES/WR.** 7th Consultative Committee meeting, N'Djamena, Chad (19-20 December)
- **CLCPRO.** 6th session, Tunis, Tunisia (26-31 March)
- **DLCC.** 40th session, Cairo, Egypt (to be confirmed)

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.



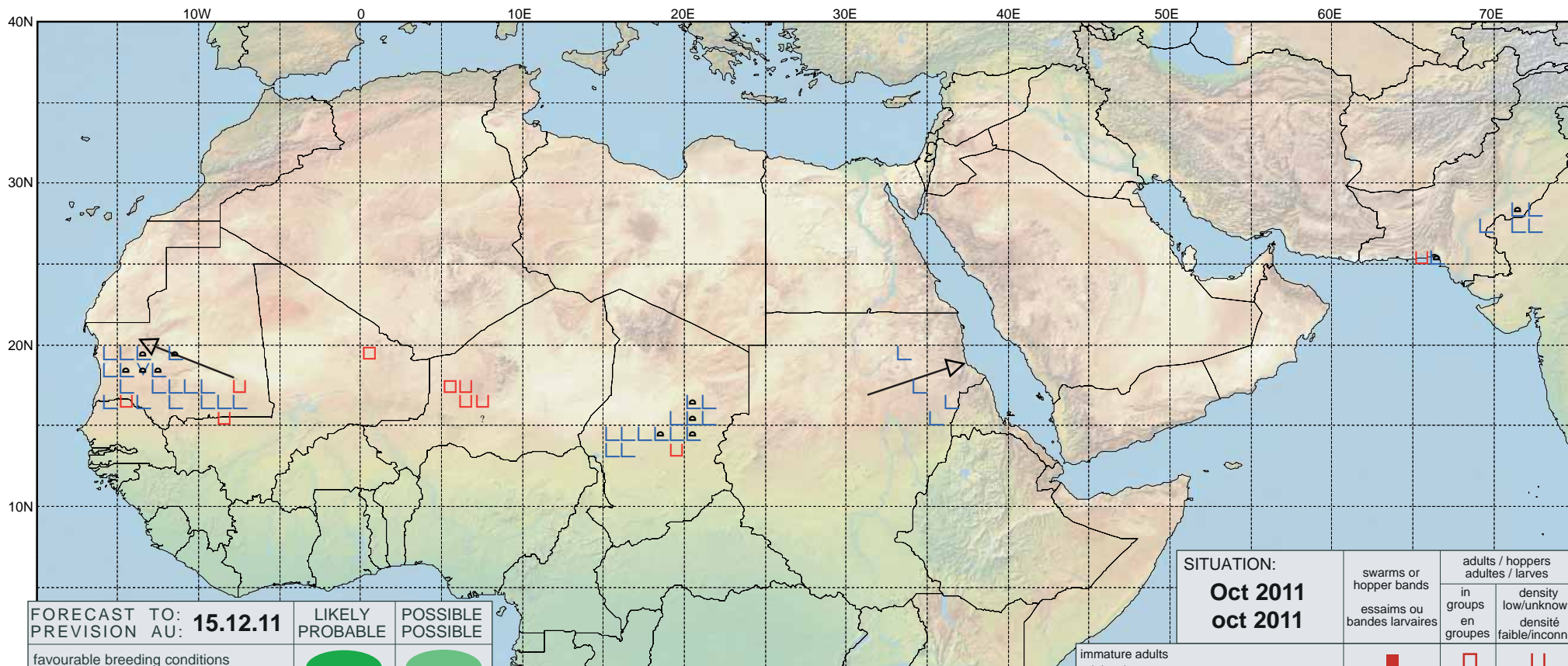
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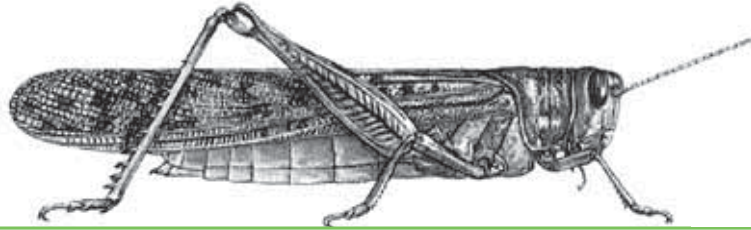
Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU: 15.12.11	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 2011 oct 2011	swarms or hopper bands essaims ou bandes larvaires	adults / hoppers adultes / larves	
		in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures			
mature or partly mature adults adultes matures ou partiellement matures			
adults, maturity unknown adultes, maturité inconnue			
egg laying or eggs pontes ou œufs			
hoppers larves			
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)			



warning level: **CALM**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



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**General Situation during November 2011
Forecast until mid-January 2012**

(1 Dec 2011)

The Desert Locust situation remained calm during November as vegetation dried out in the summer breeding areas of the northern Sahel in West Africa and Sudan, and along the Indo-Pakistan border. Consequently, low numbers of adults moved to the winter breeding areas in northwest Mauritania and along both sides of the Red Sea. If rain falls during the forecast period, small-scale breeding will occur in these areas, causing locust numbers to increase slightly but remain below threatening levels. Small-scale breeding may also occur along the southeastern coast of Oman where unusually good rains fell.

Western Region. In the absence of significant rain, vegetation continued to dry out and locust numbers declined in the summer breeding areas of the northern Sahel during November. In **Mauritania**, low number of solitary adults moved from the summer breeding areas in the southeast, south and centre of the country to the northwest. In **Niger**, small-scale breeding occurred on the Tamesna Plains where scattered solitary adults were present and control teams treated 95 ha. In **Chad**, low numbers of solitary adults matured and persisted mainly in the east. In **Algeria**, isolated adults were present in parts of the Sahara. No locusts were reported elsewhere in the region. If more rain falls in northwest Mauritania, small-scale breeding may occur during the forecast period, causing locust numbers to increase slightly. Scattered adults may appear in adjacent areas of **Western Sahara** in southern Morocco.

Central Region. Low numbers of solitary adults moved from the summer breeding areas in the interior of **Sudan** to the winter breeding areas on the Red Sea coast during November. So far, only a few adults have been seen in the Tokar Delta. In **Saudi Arabia**, small-scale breeding occurred on the Red Sea coast near Qunfidah where low numbers of solitary hoppers and adults were present. During the forecast period, small-scale breeding will take place in coastal areas along both sides of the Red Sea in **Sudan**, **Eritrea**, **Saudi Arabia** and **Yemen** that receive rainfall, causing locust numbers to increase slightly but remain below threatening levels. Small-scale breeding may also occur along parts of a 1,000 km stretch of coastline in southeast **Oman** where good rains fell.

Eastern Region. No locusts were reported in the region during November. Good rains fell on the Baluchistan coast in western **Pakistan**. Consequently, ecological conditions are expected to improve and small-scale breeding may occur, especially if temperatures remain warm, causing locust numbers to increase but remain below threatening levels. Regular surveys are recommended to monitor the situation. No significant developments are expected during the forecast period.

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

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Internet: www.fao.org/ag/locusts

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



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DESERT LOCUST BULLETIN



Weather & Ecological Conditions in November 2011

No significant rain fell and vegetation continued to dry out in the summer breeding areas of West and Northeast Africa as well as on both sides of the Indo-Pakistan border. Localized showers fell in parts of the winter breeding areas on both sides of the Red Sea. Unusually good rains fell along the entire southeastern coast of Oman.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) remained somewhat further south of the summer breeding areas than normal during November. Despite seasonal predictions of higher than normal rainfall, no significant rain fell during the month and annual vegetation dried out in most places. Ecological conditions remained favourable for locust survival and limited breeding in a few localized areas of central and northwest Mauritania, near Aousserd in southern Western Sahara, in parts of northern Mali, Niger, and eastern Chad, in the Ziz-Ghris and Draa valleys on the southern side of the Atlas Mountains in Morocco, and southwest of the Hoggar Mountains in southern Algeria.

In the **Central Region**, the ITCZ remained south of 11N during November. Consequently no significant rain fell in the summer breeding areas of Sudan and Eritrea where vegetation continued to dry out. In the winter breeding areas along both sides of the Red Sea, light rain fell in a few places on the coast of Sudan between Tokar Delta and Karora, on the southern coast of Eritrea between Tio and Idd, on the coast near Qunfidah, Saudi Arabia and on the coast of Yemen between Zabid and Am Rija. Nevertheless, more rain is needed before ecological conditions become favourable for breeding. Good rains fell on the southern coast of Yemen near Mukalla while heavier showers fell during the first decade of November along a 1,000 km stretch of coast from Al Ghaydah, Yemen to Sur, Oman. Some of the rains reached the interior of central and southern Oman. As the same coastal areas of Oman received good rains during the last decade of October, annual vegetation became green by late November along most of the coast and

in the interior of Sharqiya near Wadi Batha. In the Horn of Africa, light showers fell in a few places on the escarpment in northern Somalia between Hargeisa and Berbera, and in eastern Ethiopia near Dire Dawa and Jijiga.

In the **Eastern Region**, light rains fell during the first decade of November along the Baluchistan coast from Chabahar in southeast Iran to Ormara in western Pakistan. More rain is probably required before ecological conditions become favourable for breeding. Dry conditions prevailed along both sides of the Indo-Pakistan border where vegetation continued to dry out.



Area Treated

Niger 95 ha (November)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During November, scattered immature and mature solitary adults completed their movement from the southeast (two Hodhs), south (Assaba, Brakna) and centre (Tagant) to the west (Trarza) and northwest (Inchiri, southwest Adrar). Most of the adults arrived in eastern Trarza between Aguilal Faye (1827N/1444W) and Moudjeria (1752N/1219W) and, to a lesser extent in Inchiri between Akjoujt (1945N/1421W) and Bennichab (1932N/1512W), and in southwest Adrar near Oujeft (2003N/1301W). Locust numbers remained low. A few late instar hoppers were seen south of Akjoujt and east of Aguilal Faye.

• FORECAST

If rainfall occurs, small-scale breeding will cause locust numbers to increase slightly in northern Trarza, Inchiri and southwest Adrar but remain below threatening levels.

Mali

• SITUATION

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

• FORECAST

Locust numbers will continue to decline as vegetation dries out in the Tilemsi Valley, Adrar des

Iforas, Tamesna and Timetrine. Adults are expected to concentrate in any vegetation that remains green.

Niger

• SITUATION

During November, scattered immature solitary adults persisted in parts of central Tamesna at densities of up to 625 adults/ha. Small-scale breeding occurred at a few places and isolated late instar solitary hoppers were reported. Ground teams treated 95 ha.

• FORECAST

Locust numbers will decline in Tamesna and Tadres as vegetation continues to dry out.

Chad

• SITUATION

During November, isolated solitary adults matured and persisted in the east between Arada (1501N/2040E) and Fada (1714N/2132E) and, to a lesser extent, in Kanem near Salal (1448N/1712E).

• FORECAST

Locust numbers will decline as vegetation continues to dry out. No significant developments are likely.

Senegal

• SITUATION

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

• FORECAST

No significant developments are likely.

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

• FORECAST

No significant developments are likely.

Algeria

• SITUATION

During November, isolated mature solitary adults were seen in the southern Sahara west of Tamanrasset (2250N/0528E) in W. Amded. Isolated immature solitary adults were present in the west near Tindouf (2741N/0811W) and in the central Sahara south of Adrar (2753N/0017W).

• FORECAST

If temperatures stay warm, local breeding may occur near Adrar and Tamanrasset causing locust numbers to increase slightly but remain below threatening levels.

Morocco

• SITUATION

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

• FORECAST

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

Libyan Arab Jamahiriya

• SITUATION

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

• FORECAST

A few solitary adults may be present and breeding in areas of recent rainfall in the southwest along the Algerian border between Ghat and Ghadames. No significant developments are likely.

Tunisia

• SITUATION

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

• FORECAST

No significant developments are likely.

CENTRAL REGION

Sudan

• SITUATION

During November, low numbers of adults moved from the summer breeding areas in the interior to the winter breeding areas along the Red Sea coast. Isolated mature solitary adults were seen at one place in the Tokar Delta. No locusts were reported between Tokar (1827N/3741E) and Suakin (1906N/3719E).

• FORECAST

Small-scale breeding will occur in the Tokar Delta and, if additional rains fall, in adjacent parts of the Red Sea coastal plains between Suakin and the Eritrean border. Consequently, locust numbers will increase slightly but remain below threatening levels.

Eritrea

• SITUATION

No reports were received during November.

• FORECAST

Small-scale breeding will occur on the Red Sea coastal plains in areas that receive rainfall, and cause locust numbers to increase slightly but remain below threatening levels.



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Ethiopia

- SITUATION

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

- FORECAST

No significant developments are likely.

Djibouti

- SITUATION

No reports were received during November.

- FORECAST

No significant developments are likely.

Somalia

- SITUATION

No reports were received during November.

- FORECAST

No significant developments are likely.

Egypt

- SITUATION

No reports were received during November.

- FORECAST

No significant developments are likely.

Saudi Arabia

- SITUATION

During November, small-scale breeding occurred on the Red Sea coast near Qunfidah (1909N/4107E) where hatching occurred after mid-month and low numbers of second instar solitarious hoppers were seen at one place. Scattered immature solitarious adults were present at five places nearby. No locusts were seen near Jeddah (2130N/3910E), Jizan (1656N/4233E) and in the interior.

- FORECAST

Small-scale breeding will continue near Qunfidah and will take place in other coastal areas that receive rainfall during the forecast period. Consequently, locust numbers will increase slightly along the coast but remain below threatening levels.

Yemen

- SITUATION

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

- FORECAST

Scattered adults may be present and breeding on a

small scale in areas of recent rainfall on the Red Sea coast and on the southern coast near Mukalla and Al Ghaydah. This is likely to continue during the forecast period.

Oman

- SITUATION

No locusts were seen during surveys carried out in the south (Dhofar), northern interior (Al Dakhliya), the Batinah coastal plains and the Musandam Peninsula in November. No locusts were reported elsewhere.

- FORECAST

Small-scale breeding may cause locust numbers to increase slightly in coastal areas between Salalah and Sur and along the eastern edge of the Wahiba Sands.

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 November, no locusts were seen during surveys on the southeastern coast near Jask (2540N/5746E) and in the western Jaz Murian Basin near Kahnuj (2757N/5742E).

- FORECAST

Low numbers of locusts may appear on the southeast coastal plains near Chabahar where small-scale breeding will occur in areas that receive rainfall.

Pakistan

- SITUATION

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

- Forecast

Low numbers of locusts may appear on the coastal plains in Baluchistan between Jiwani and Ormara and breed on a small scale in areas of recent rainfall.

India

- SITUATION

During the first fortnight of November, 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 within 48 hours of the latest survey. Affected countries are also encouraged to prepare decadal bulletins summarizing the situation. All information should be sent by e-mail to the FAO/ECLLO Desert Locust Information Service (ecllo@fao.org). Information received by the end of the month will be included in the FAO Desert Locust Bulletin for the current month; otherwise, it will not appear until the following month. Reports should be sent even if no locusts were found or if no surveys were conducted.

Locust tools and resources. FAO has developed a number of tools that National locust information officers and other staff 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)
- **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://www.devccast.eu/user/images/dl/Form.do>)
- **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://twitter.com/faolocust>)
- **eLERT.** A dynamic and interactive online database of resources for locust emergencies (<http://sites.google.com/site/elertsite>)

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- **DLCC.** 40th session, Cairo, Egypt (mid-May, to be confirmed)



Glossary of terms

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

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

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- 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



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DESERT LOCUST BULLETIN



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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.

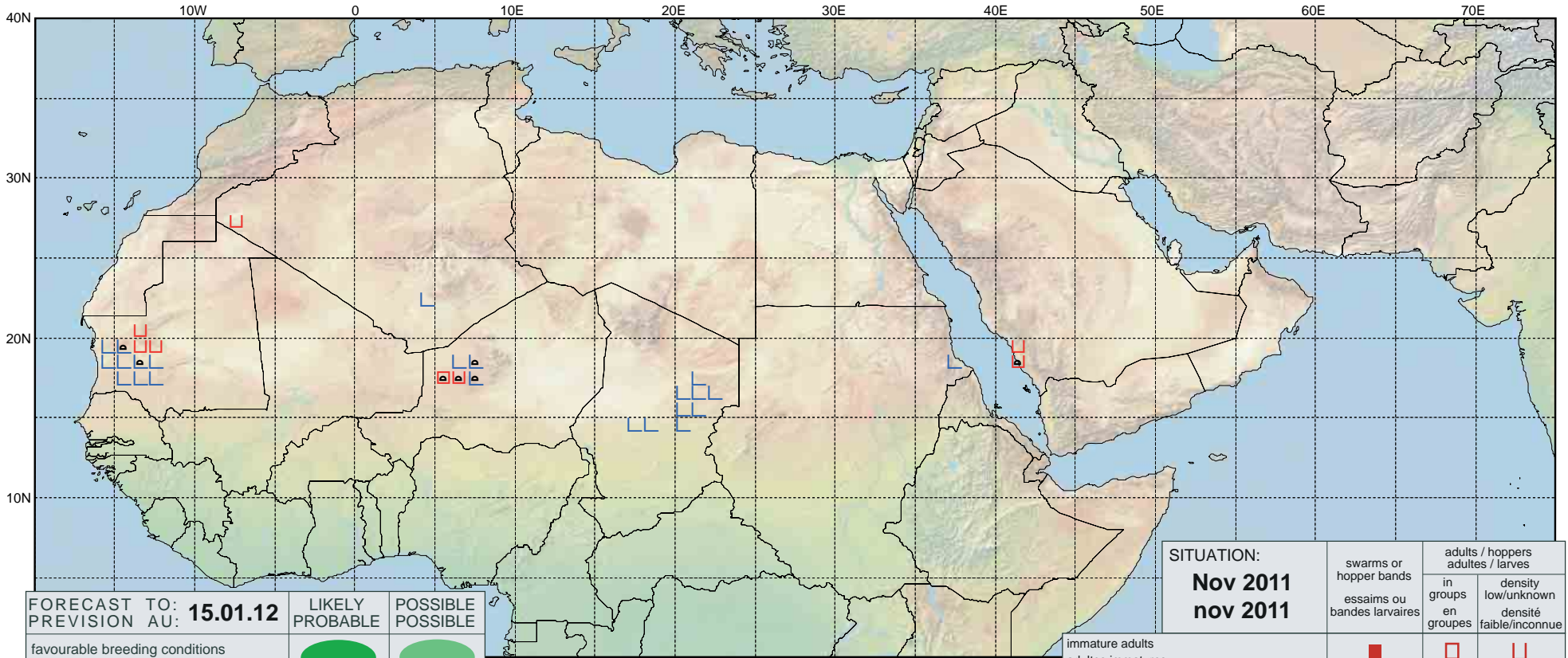
EASTERN

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



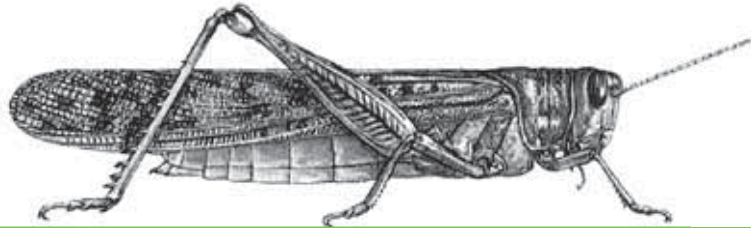
Desert Locust Summary

Criquet pèlerin - Situation résumée



FORECAST TO: PREVISION AU:	15.01.12	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 2011 nov 2011	swarms or hopper bands	adults / hoppers adultes / larves	
	essaims ou bandes larvaires	in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures			
mature or partly mature adults adultes matures ou partiellement matures			
adults, maturity unknown adultes, maturité inconnue			
egg laying or eggs pontes ou œufs			
hoppers larves			
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)			



warning level: **CALM**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 399



**General Situation during December 2011
Forecast until mid-February 2012**

(3 Jan 2012)

The Desert Locust situation remained calm during December because of poor rainfall. Only isolated solitarious adults were seen in a few places in the winter breeding areas along both sides of the Red Sea in Sudan, Eritrea, Saudi Arabia and Yemen. During the forecast period, small-scale breeding is likely to take place in some of these areas as well as in eastern Oman. Although this will cause locust numbers to increase slightly, they will remain below threatening levels. In West Africa, small-scale breeding is likely to continue in the Air Mountains in Niger and isolated adults may persist in northwest Mauritania. In South-West Asia, small-scale breeding may commence by mid-February in western Pakistan and southeast Iran if more rains fall. No significant developments are likely in the recession area during the forecast period.

Western Region. Mainly dry conditions prevailed during December and very little rain fell except in Niger where good rains fell at mid-month in the Air Mountains. Small-scale breeding was in progress there and limited breeding is likely to continue during the forecast period. In Mauritania, locust numbers declined in the northwest where only isolated adults persisted in a few places. In Morocco, no locusts were seen south of the Atlas Mountains in the Draa Valley and in the Western Sahara. In Algeria, no locusts were seen during surveys but vegetation was becoming green in parts of the southern Sahara. No significant developments are likely in the region during the forecast period.

Central Region. A few scattered adults were reported during December in the winter breeding areas along the Red Sea coast in Sudan, Eritrea, Saudi Arabia, and Yemen. No locusts were seen during surveys carried out in Egypt, northern Somalia and Oman. Light rain fell on the coast in Sudan where ecological conditions were becoming favourable. Favourable conditions were also present along parts of the Red Sea coast in Yemen and along the eastern coast in Oman. During the forecast period, small-scale breeding is likely to occur in these places as well as any other areas that receive rainfall. This will cause locust numbers to increase slightly but remain below threatening levels. No significant developments are likely in the region during the forecast period.

Eastern Region. Dry conditions prevailed throughout the region during December. Isolated solitarious adults were seen at one place on the coast in western Pakistan. If light to moderate showers occur during the forecast period in the spring breeding areas of western Pakistan and southeast Iran, then small scale breeding is likely to take place but locust numbers are expected to remain low and below threatening levels. No significant developments are likely in the region during the forecast period.

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

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Weather & Ecological Conditions in December 2011

Although very little rain fell during December, ecological conditions remained favourable for limited breeding in the Air Mountains of Niger, and were becoming favourable in a few winter breeding areas along the Red Sea coast as well as in Oman from earlier rains.

In the **Western Region**, very little rain fell during December except in Niger where good rains fell during the second decade in the eastern side of the Air Mountains. This should allow ecological conditions to remain favourable for breeding during the forecast period. Elsewhere in the region, dry conditions prevailed in most areas except in parts of the central Sahara in Algeria near Adrar and in the southern Sahara southeast of the Hoggar Mountains where vegetation was becoming green. In Mauritania, vegetation remained green in a few small areas in the centre and northwest. In Mali, a few local areas remained green in central Timetrine and in southern Tamesna.

In the **Central Region**, no significant rain fell during December. Nevertheless, light showers occurred a few times during the second half of the month on the southern Red Sea coastal plains in Sudan near Tokar Delta. Consequently, ecological conditions were becoming favourable for small-scale breeding between Suakin and the Eritrean border but were dry on the northern coast. Breeding conditions were improving on the central Red Sea coast in Eritrea mainly near Shelshela and along parts of the northern Tihama in Yemen. In Oman, ecological conditions became favourable for small-scale breeding along the eastern coast as a result of good rains in October and November. Dry conditions prevailed in winter breeding areas on the Red Sea coast in southeast Egypt and along both sides of the Gulf of Aden in southern Yemen and northern Somalia.

In the **Eastern Region**, no significant rain fell during December and dry conditions prevailed in all areas.



Area Treated

No control operations were reported in December.



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During December, locust numbers declined in the northwest and only isolated immature and mature solitary adults persisted in a few places between Akjoujt (1945N/1421W) and Atar (2032N/1308W), southwest of Akjoujt, and east of Aguilal Faye (1827N/1444W). No locusts were seen further north near Zouerate (2244N/1221W).

• FORECAST

If rainfall occurs, small-scale breeding will cause locust numbers to increase slightly in northern Trarza, Inchiri and southwest Adrar but remain below threatening levels. No significant developments are likely.

Mali

• SITUATION

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

• FORECAST

Isolated adults may be present and could persist in the few areas that remain green in the north, particularly in central Timetrine and southern Tamesna. No significant developments are likely.

Niger

• SITUATION

During December, a few isolated solitary hoppers of all instars were seen in the central Air Mountains between Iferouane (1905N/0824E) and Timia (1809N/0846E) as a result of small-scale breeding during November and early December. Isolated immature and mature solitary adults were also present. A few hoppers and immature adults were reported on the western side of the Air Mountains at one location between Agadez (1700N/0756E) and Arlit (1843N/0721E).

• FORECAST

Low numbers of adults will persist in the Air Mountains and small-scale breeding is likely to continue in areas of recent rainfall.

Chad

• SITUATION

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

• FORECAST

No significant developments are likely.

Senegal

• SITUATION

No surveys were carried out and no locusts were reported in 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), Tindouf (2741N/0811W), and west of Tamanrasset (2250N/0528E).

• FORECAST

If temperatures stay warm, local breeding may occur near Adrar and southeast of the Hoggar Mountains causing locust numbers to increase slightly but remain below threatening levels.

Morocco

• SITUATION

During December, no locusts were seen during surveys carried out in the Draa Valley and in the northeastern Western Sahara near Smara (2644N/1140W) and Haouza (2707N/1112W).

• FORECAST

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

Libyan Arab Jamahiriya

• SITUATION

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

• FORECAST

A few solitary adults may be present and breeding in areas of previous rainfall in the southwest along the Algerian border between Ghat and Ghadames. No significant developments are likely.

Tunisia

• SITUATION

No surveys were carried out and no locusts were

reported in December.

• FORECAST

No significant developments are likely.

CENTRAL REGION

Sudan

• SITUATION

During December, no locusts were seen during surveys along the Red Sea coast between the borders of Egypt and Eritrea except for scattered mature solitary adults at one place on the southern plains near Aqiq (1813N/3811E) at the end of the month. No locusts were seen on the western side of the Red Sea Hills in Wadi Diib/Okro between Tomala (2002N/3551E) and the Egyptian border.

• FORECAST

Small-scale breeding is expected to occur in areas of green vegetation on the southern coast between Suakin and the Eritrean border, including the Tokar Delta. Consequently, locust numbers will increase slightly but remain below threatening levels. Breeding is unlikely to occur in Wadi Diib/Okro or on the northern coast unless additional rains fall during the forecast period.

Eritrea

• SITUATION

During December, a few isolated solitary adults were present on the central Red Sea coast at two places near Shelshela (1553N/3906E). No locusts were seen elsewhere along the coast between Tio (1441N/4057E) and Embere (1628N/3856E).

• FORECAST

Small-scale breeding will occur on the Red Sea coastal plains in areas that receive rainfall, mainly between Massawa and the Sudanese border. Consequently, locust numbers will increase slightly but remain below threatening levels.

Ethiopia

• SITUATION

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

• FORECAST

No significant developments are likely.



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Djibouti

- SITUATION

No reports were received during December.

- FORECAST

No significant developments are likely.

Somalia

- SITUATION

A late report indicated that no locusts were seen during a survey carried out on the plateau between Hargeisa (0931N/4402E), Burao (0931N/4533E) and the Ethiopian border on 15-20 November.

In mid-December, no locusts were seen during a survey on the northwest coastal plains between Berbera (1028N/4502E) and the Djibouti border as well as on the escarpment between Silil (1058N/4326E) and Boroma (0956N/4313E).

- FORECAST

Small-scale breeding could occur on the northwest coast if rain falls during the forecast period. No significant developments are likely.

Egypt

- SITUATION

A late report indicated that no locusts were seen during surveys carried out in the second half of November on the Red Sea coast near Abu Ramad (2224N/3624E), along the Lake Nasser shoreline near Abu Simbel (2219N/3138E) and the Allaqi area, and in the northwest near Salum (3131N/2509E).

During December, no locusts were reported in the above areas as well as in the Red Sea Hills and in the northwest near Siwa (2912N/2531E).

- FORECAST

Isolated adults may appear on the Red Sea coastal plains between Shalatyn and Halaib. If rains occur, small-scale breeding will cause locust numbers to increase slightly but remain below threatening levels.

Saudi Arabia

- SITUATION

During December, isolated immature solitary adults were seen at two places on the Red Sea coast near Qunfidah (1909N/4107E). No locusts were seen elsewhere on the coast between Jeddah (2130N/3910E) and Jizan (1656N/4233E) as well as in the interior.

- FORECAST

Small-scale breeding will occur in areas along the Red Sea coast that receive rainfall during the forecast period. Consequently, locust numbers will increase slightly but remain below threatening levels.

Yemen

- SITUATION

During December, scattered immature solitary adults were seen at three places on the northern Red Sea coastal plains (Tihama) west of Suq Abs (1600N/4312E).

- FORECAST

Small-scale breeding will occur along parts of the northern and central Tihama, causing locust numbers to increase slightly but remain below threatening levels. Additional rainfall is required if breeding is to occur elsewhere on the Tihama or along the Gulf of Aden coastal plains.

Oman

- SITUATION

During December, no locusts were seen during surveys carried out along the northern coast (Batinah) and interior (Al Dakhliya, Dhahera, Sharqiya), in the central (Wusta) interior and coast, and in the south (Dhofar). No locusts were reported elsewhere.

- FORECAST

Small-scale breeding may cause locust numbers to increase slightly in coastal areas between Salalah and Sur and along the eastern edge of the Wahiba Sands.

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 December, no locusts were seen during surveys on the southeastern from Jask (2540N/5746E) to Chabahar (2517N/6036E).

- FORECAST

Low numbers of locusts may appear on the southeast coastal plains near Chabahar and breed on a small scale in areas that receive rainfall.

Pakistan

- SITUATION

No locusts were seen during surveys carried out in late December along the Baluchistan coast except for isolated solitary adults that were maturing near Pasni (2515N/6328E).

- Forecast

Low numbers of locusts may appear on the coastal plains in Baluchistan between Jiwani and Ormara and breed on a small scale if rainfall occurs.

India

• SITUATION

During the second fortnight of November, isolated immature solitarious adults were seen at one location between Bikaner (2801N/7322E) and Phalodi (2706N/7222E).

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

• FORECAST

No significant developments are likely.

Afghanistan

• SITUATION

No reports received.

• FORECAST

No significant developments are likely.



Announcements

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

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

Locust tools and resources. FAO has developed a number of tools that National locust information

officers and other staff 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)
- **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://www.devocast.eu/user/images/dl/Form.do>)
- **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://twitter.com/faolocust>)
- **eLERT.** A dynamic and interactive online database of resources for locust emergencies (<http://sites.google.com/site/elertsite>)

SWAC website. A new website for the FAO Commission for Controlling the Desert Locust in South-West Asia (SWAC) is now available at <http://www.fao.org/ag/locusts/SWAC>. Comments are welcome.

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

- **Desert Locust situation updates.** Archives Section – Briefs
- **Contacts.** Information Section – Contacts

2012 events. The following activities are scheduled or planned:

- **CLCPRO.** 6th session, Tunis, Tunisia (26-31 March)
- **SWAC/CRC.** Inter-regional national locust information officer workshop, Cairo, Egypt (17-18 April, tbc)
- **CRC.** 7th Sub-regional training course, Amman, Jordan (6-15 May)
- **DLCC.** 40th session, Cairo, Egypt (tbc)



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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 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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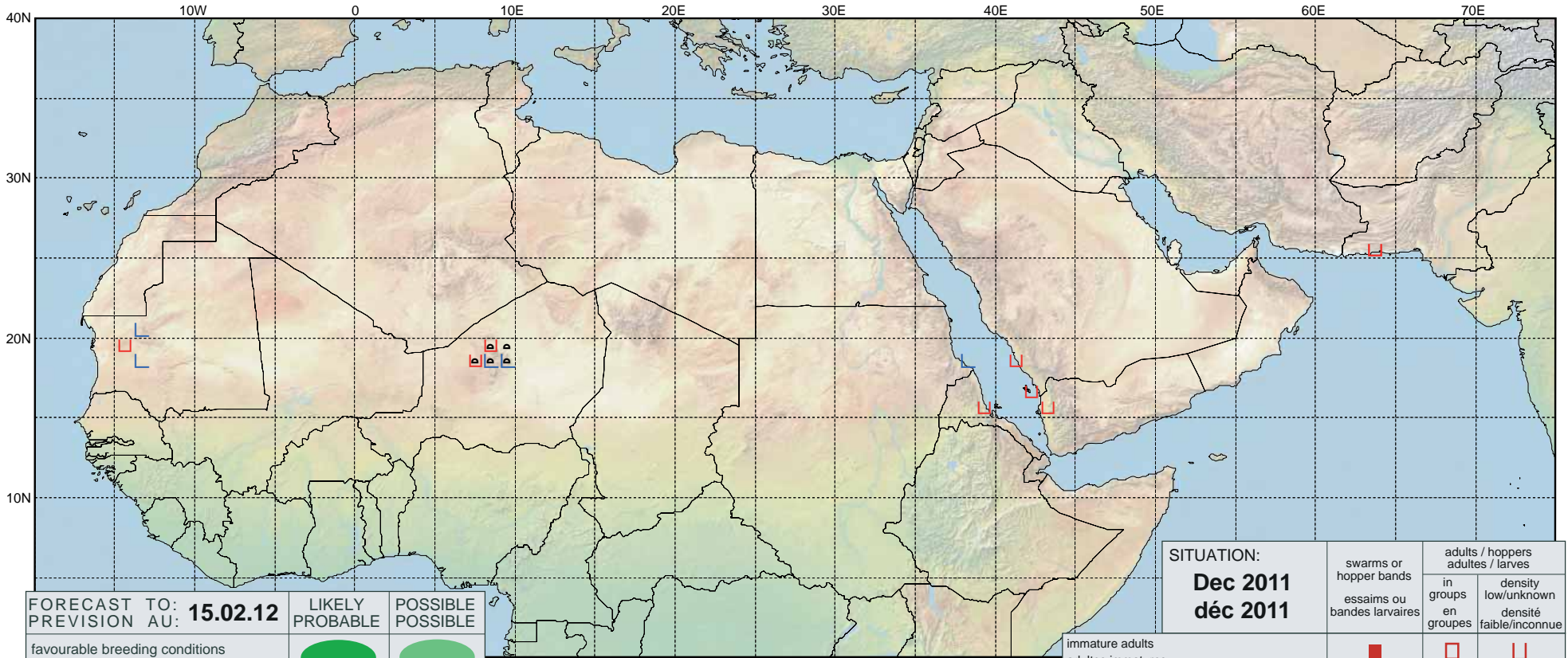
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Desert Locust Summary

Criquet pèlerin - Situation résumée



FORECAST TO: PREVISION AU:	15.02.12	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 2011 déc 2011	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)			