



DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 309



**General Situation during July 2004
Forecast until mid-August 2004**

(5 July 2004)

The Desert Locust upsurge remains extremely critical in Northwest Africa where intensive control operations continued during June for the fourth consecutive month. Nevertheless, swarms started to form and several of these moved south and invaded Mauritania, Senegal and Mali. A substantial number of swarms could follow in the coming weeks. As summer rains have already started in the Sahel, breeding will occur and there may be a dramatic increase in locusts that could threaten crop production during the summer. Additional international assistance is urgently required to supplement the major efforts already made and to prevent the situation from developing into a plague.

Western Region. An increasing number of swarms formed in Morocco, Algeria, Tunisia and Libya where intensive aerial and ground control operations treated nearly 1.3 million ha during June. Smaller infestations were also present in northern Mauritania and in Niger. Swarms have started to move from the spring breeding areas to the summer areas. Some swarms were seen in southwestern Libya and may also be present in southern Algeria. During the second half of the month, immature swarms arrived in southern Mauritania, northern Senegal and northern Mali where rains recently fell. The swarms are highly mobile and it may be difficult to

treat them before they mature and lay eggs. Many more swarms are expected to migrate from Northwest Africa to the Sahel where they will disperse and breed within a large area between Mauritania and Chad. Consequently, hatching and hopper band formation are likely to occur during the forecast period, causing a further increase in locust numbers.

Central Region. No significant locust infestations were reported in the Region during June. Only a few hopper and adult groups mixed with other locusts were present in cropping areas in southern Egypt. Ecological conditions are slowly improving in the summer breeding areas in the interior of Sudan where seasonal rains have started. There is a moderate risk of swarms arriving from Northwest Africa, mainly in western Sudan and perhaps in northwestern Egypt. If so, breeding and hopper band formation will occur in Sudan during the forecast period. All efforts should be made to regularly monitor these areas.

Eastern Region. The monsoon rains commenced during June in the summer breeding areas along the Indo-Pakistan border where a few isolated adults were reported. No significant developments are likely during the forecast period.

The FAO Desert Bulletin is issued monthly, supplemented by Updates during periods of increased Desert Locust activity, and is distributed by fax, e-mail, FAO pouch and airmail by the Locusts and Other Migratory Pests Group, AGP Division, FAO, 00100 Rome, Italy. It is also available on the Internet.

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

Facsimile: +39 06 570 55271

E-mail: eclo@fao.org

Internet: www.fao.org

DLIS: www.fao.org/news/global/locusts/locuhome.htm



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Weather & Ecological Conditions in June 2004

Seasonal rains started in many of the summer breeding areas in the Sahel in West Africa and Sudan where ecological conditions were slowly improving. Vegetation was drying out in the spring breeding areas in Northwest Africa. Summer rains associated with the monsoon commenced along the Indo-Pakistan border.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) continued its seasonal movement northwards in the Sahel, oscillating between 15N and 18N, occasionally reaching 20-21N over Niger. As a result, summer rains started in many places in the Sahel of West Africa during June. The first rains fell in the Adrar des Iforas (Tessalit) in northern Mali on the 1st, in southeastern Mauritania (Nema) and adjacent areas of western and central Mali (Nara, Tombouctou) on the 6th, and in southwestern Mauritania (Boutilimit) and northern Senegal on the 28th. Light rains also fell in other summer breeding areas in Mali (Gao), Niger (Tahoua and Agadez), Chad (Abeche) and southern Algeria (Tamanrasset and Bordj Mokhtar). Consequently, ecological conditions were improving in all of these places. In the spring breeding areas in Northwest Africa, moderate rains fell in the Atlas foothills in Algeria near Laghouat, El Bayadh, Ghadaia and Batna during the second week of June. Light rain occurred in northeastern Morocco where ecological conditions remained favourable in the upper plateaux of the Atlas Mountains. Elsewhere in Morocco, annual vegetation was drying out in most places south of 32N including the Draa Valley. Rain fell at times in southern Tunisia. The prevailing northerly winds over the region were disrupted by numerous atmospheric disturbances during the month.

In the **Central Region**, summer rains started to fall in parts of the interior in Sudan during June. Rains first fell in Western Kordofan (En Nahud) on the 7th, followed by light to moderate rainfall in Western Darfur (Geneina), southern portions of Northern Kordofan (El Obeid, Umm Rawaba), White Nile (Ed Dueim) and in the Eastern Region near Kassala at times during the month. Some rains may have also fallen

in the western lowlands in Eritrea. Consequently, ecological conditions were slowly improving in many places. Moderate rains, unusual at this time of year, were reported on the central and southern coastal plains of the Red Sea in Sudan on 23 and 25 June. In northwestern Somalia, summer rains started on the plateau between Hargeisa and Borama where vegetation was green. In Yemen, green vegetation was limited to a few wadis in the interior near Ataq. At the end of the month, light to moderate rains fell on the Red Sea coastal plains and light showers were reported in the interior near Marib and Ataq. In southern Oman, light rains associated with the monsoon started in the Dhofar region on 20 June.

In the **Eastern Region**, the monsoon rains commenced in summer breeding areas of Rajasthan, India during the second week of June when light rainfall was reported at Barmer, Jaisalmer and Jodhpur. Rains also fell in a few places in the summer breeding areas in the Cholistan and Tharparkar Deserts, Pakistan at Rahimyar Khan and Mirpurkhas.



Area Treated

There was a sharp increase in control operations in June when more than 1.6 million ha were treated, bringing the total area treated since October 2003 to 4.5 million ha.

Algeria	828,364 ha	(25 May – 24 June)
Egypt (1)	1,672 ha	(2-18 June)
Libya	16,934 ha	(25-31 May)
	59,147 ha	(1-30 June)
Mauritania	205 ha	(21-31 May)
	1,292 ha	(1-20 June)
Morocco	736,750 ha	(1-30 June)
Niger	200 ha	(June)
Senegal	30 ha	(29 June)
Tunisia	110,085 ha	(up to 31 May)
	no details	(June)

(1) mixed with other grasshopper and locust species



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

In the north, groups of late instar hoppers, fledglings and immature adults at densities up to 40 locusts/m²

were present near Zouerate (2244N/1221W) in June. Mature adult groups at densities of 300-3000 locusts/ha were seen to the south near Ouadane (2056N/1137W). On 8-10 June, several high-density immature flying swarms were reported in Inchiri south of Akjoujt (1945N/1421W) and northeast of Nouakchott (1809N/1558W). One swarm was 44 km² in size. During the third decade of the month, more swarms were seen passing through the Adrar region heading to the south.

In the south, locusts gradually appeared in many of the summer breeding areas during June. Isolated immature adults were first reported near Kiffa (1638N/1124W) on the 1st. Scattered immature and mature adults were seen from the 9th onwards south of Aioun El Atrous (1639N/0936W) to the Malian border. Immature adult groups, at densities up to 5,000 locusts/ha, were reported near Boutilimit on 13 June. During the second half of June, several swarms arrived in the south. A 1.5 km² mature swarm at a density of 400 adults/m² was seen just east of Magta Lahjar (1730N/1305W) on the 14th. Mature groups at densities up to 1,700 adults/ha were reported south of Aioun on the 18th. A large immature swarm with a density of 250 adults/m² was treated in the Senegal River Valley near Rosso (1629N/1553W) on the 20th and another one was seen near Kaedi (1612N/1332W) on the 23rd. A swarm was seen near Aioun on the 21st. Swarms were also reported in Trarza and Brakna. Ground teams treated 1,497 ha from 21 May to 30 June.

• FORECAST

Locusts will continue to shift from the winter to the summer breeding areas. As a result, the situation will become calm in the north but locusts are likely to increase dramatically in the south as additional adult groups and swarms arrive from the north. The immigrant populations are likely to be highly mobile and could reach the Senegal River Valley and the Malian border. Consequently, it may be difficult to treat the adults before egg laying. Depending on the amount and distribution of rainfall, moderate-scale breeding will occur causing hopper bands to form from late July onwards.

Mali

• SITUATION

Although no surveys were conducted during June, reports were received from nomads, guides and locals of swarms arriving from the north on 18-23 June. The swarms were highly mobile and caused damage to vegetation. They dispersed throughout the northern and central Adrar des Iforas between Kidal (1827N/0125E) and Tessalit (2011N/0102E). Several swarms were also seen in the Timetrine near Ti-n-kar (1926N/0022W) and in the Tilemsi Valley. One swarm took an hour to pass over Aguelhoc (1927N/0052E)

on the 19th. Most of the swarms were immature but a significant number of adults were seen copulating on the 22nd at two places in the Adrar des Iforas and Timetrine.

• FORECAST

Swarms will continue to disperse throughout the Adrar des Iforas, Tilemsi Valley and Timetrine. These populations are likely to be supplemented by a substantial number of adult groups and swarms arriving from Northwest Africa. The immigrant populations are likely to be highly mobile and could extend into other areas between Tombouctou and Tamesna and in the west between Nioro and Nara, according to where rainfall occurs. Consequently, it may be difficult to treat the adults before egg laying. Depending on the amount and distribution of rainfall, moderate-scale breeding will occur causing hopper bands to form and locust numbers to increase further. All efforts should be made to monitor the situation in these areas.

Niger

• SITUATION

During June, small groups of immature and mature adults were scattered throughout the southern and southeastern Air because of local breeding during the previous months. There was one report of first and second instar hopper groups on the 15th. Control operations were conducted at one place, Alleleka (1823N/0959E), where adults were seen laying on 10-16 June. Some of the adult groups moved west, reaching the Irhazer Plains west of Agadez (1700N/0756E). There were no reports of incoming swarms during the month.

• FORECAST

Adult groups are likely to continue to disperse throughout the Air Mountains and more will appear in Tamesna. Locust numbers will increase in both areas as egg-laying, hatching and band formation occur during the forecast period. It is expected that these infestations will be supplemented by a substantial number of adult groups and swarms arriving from Northwest Africa. The immigrant populations are likely to be highly mobile and could disperse over a large area, depending on where rainfall occurs. Consequently, it may be difficult to treat them before egg laying. All efforts should be made to monitor the situation in these areas.



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Chad

• SITUATION

No reports received.

• FORECAST

There is a moderate risk of adult groups and swarms appearing from Northwest Africa in the north (B.E.T.) and northeast as well as in parts of Kanem, Batha and Biltine in the centre. Adults will mature rapidly and lay eggs that will hatch and could give rise to hopper bands. All efforts should be made to monitor the situation in these areas.

Senegal

• SITUATION

On 23 June, three low-density small immature swarms were seen close to the Senegal River Valley near Richard Toll (1626N/1541W). On the 25th, a 1 km² immature swarm was reported in the centre of the country near Mbake (1448N/1555W). In the northeast, control operations treated 30 ha of a maturing swarm near Matam (1540N/1318W) on the 28th. All of the swarms were said to be arriving from the north.

• FORECAST

There is a moderate risk of additional adult groups and swarms arriving from the north during periods when the Inter-Tropical Convergence Zone is south of 15N. This risk will decrease as the ITCZ moves north into Mauritania. Breeding could occur, giving rise to hopper bands during the forecast period.

Algeria

• SITUATION

Although intensive ground and aerial control operations treated more than 800,000 ha in June, the situation remains extremely critical over a large portion of the country. Band formation and fledging continued along the southern side of the Atlas Mountains between Morocco and Tunisia. Breeding was heaviest in the provinces of Naama (3318N/0200W), El Bayadh (3341N/0102E), Laghouat (3349N/0243E), Djelfa (3440N/0314E), Biskra (3448N/0549E) and El Oued (3323N/0649E) where mainly fifth instar bands and groups of immature adults were present. Swarms were forming in many of these areas. Late hatching was reported on 1-2 June in El Oued, Naama and M'Sila (3541N/0431E).

During the second half of the month, swarms continued to form in the above areas and there

were new reports from Tindouf (2741N/0811W) and Bechar (3135N/0217W). Adult numbers increased in the centre and south near Adrar (2753N/0017W), Tamanrasset (2250N/0528E) and Illizi (2630N/0825E), suggesting that movement towards the summer breeding areas had commenced.

• FORECAST

Locusts that escape control operations are likely to form a substantial number of swarms in the spring breeding areas in the north. Locust infestations will decline as most of the swarms move south towards the summer breeding areas in the Sahel in West Africa. Some swarms may only reach central and southern parts of the country where they could mature and eventually lay eggs if conditions are favourable. A few swarms could move further east across North Africa.

Morocco

• SITUATION

During June, late instar hopper bands at densities of up to 800 hoppers/m² continued to develop and fledge. Groups of adults and some swarms were forming at densities of up to 120 adults/m² south of the Atlas Mountains in the Draa and Souss Valleys as well as in the foothills of the Atlas. New hatching and band formation occurred on the Upper Plateau in the northeast between Ain Beni Mathar (3400N/0201W) and Bouarfa (3232N/0159W) where late instar bands, fledglings and immature adult groups were also reported. At mid-month, immature adults were seen flying southwards in the Hamada du Draa near Farcia (2644N/0950W) and Mahbes (2659N/0849W). By the end of the month, many immature swarms were reported near Ouarzazate (3057N/0650W), Errachidia (3154N/0425W), on the southeastern side and in the interior of the Haut Atlas, and in the Anti-Atlas. Smaller infestations were present in northern Western Sahara where immature groups were moving towards the south. Aerial and ground control operations treated 736,750 ha on 1-30 June.

• FORECAST

Hopper bands that escape control will form swarms along the southern side of the Atlas Mountains. Locust infestations will decline as most of the swarms move south towards the summer breeding areas in the Sahel in West Africa while a few may move further east across North Africa.

Libyan Arab Jamahiriya

• SITUATION

During June, hopper bands at densities up to 500 hoppers/m² continued to develop and fledge, causing new swarms to form in the northwest between Nalut (3152N/1058E), Ghadames (3010N/0930E) and Bani Waled (3143N/1401E). During the second half of

the month, immature swarms at densities up to 60 adults/m² were reported in these areas as well as in Al Hamada Al Hamra and Ghat (2459N/1011E). Some mature adult groups were reported near Ghat and in the centre near Sabha (2704N/1425E). Ground and aerial control operations treated 76,000 ha of late instar hoppers and adults from 25 May to 27 June.

- **FORECAST**

Hopper bands and adults that escape control will form additional swarms in the northwest. Locust infestations will decline as these swarms move south towards the summer breeding areas in the Sahel in West Africa. There is a risk that a few swarms could appear from Tunisia and Algeria in the west and centre of the country.

Tunisia

- **SITUATION**

Although reports were not received, intensive control operations continued during June in the south where breeding previously occurred. Further details are awaited.

- **FORECAST**

Hopper bands and adults that escape control will form swarms in the centre and south. Locust infestations will decline as these swarms move south towards southern Algeria and the summer breeding areas in the Sahel in West Africa. There is a risk that some could also move east to Libya.

Burkina Faso, Cape Verde, Gambia, Guinea Bissau and Guinea Conakry

- **FORECAST**

No significant developments are likely.

CENTRAL REGION

Sudan

- **SITUATION**

In late May, a report of a locust swarm near Geneina (1327N2230E) in western Darfur was confirmed as Tree Locust. During June, the situation remained calm and no reports of locusts were received from the summer breeding areas.

- **FORECAST**

Scattered adults and perhaps a few small groups will appear in the summer breeding areas in Northern Darfur, Northern Kordofan and White Nile States and lay eggs with the onset of the seasonal rains. There is a moderate risk that adult groups and swarms will arrive in Northern Darfur from Northwest Africa. All efforts should be made to monitor the situation in these areas.

Eritrea

- **SITUATION**

No locusts were seen on the Red Sea coast during

surveys carried out 17-22 June.

- **FORECAST**

No significant developments are likely.

Somalia

- **SITUATION**

Isolated mature adults were seen at two places east of Boroma (0956N/4313E) during surveys carried out on the plateau between Boroma and Burao (0931N/4533E) on 14-20 June.

- **FORECAST**

Isolated adults will persist and breed on a small-scale in a few places on the plateau between Burao and Hargeisa.

Ethiopia

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

Djibouti

- **SITUATION**

No reports received.

- **FORECAST**

No significant developments are likely.

Egypt

- **SITUATION**

During June, ground control operations treated mainly grasshopper, Tree Locust and African Migratory Locust infestations mixed with a few Desert Locust hoppers and immature adults in cropping areas in the Western Desert at Sh. Oweinat (2219N/2845E), Baris (2448N/3035E) and Darb Al-Arbain (2357N/3018E). Densities were highest at Sh. Oweinat where groups of up to 15 locusts/m² were present. Isolated mature adults mixed with other locusts were reported on a farm near Lake Nasser at Tushka (2247N/3126E). No locusts were seen elsewhere along the Lake Nasser shoreline. A total of 1,672 ha were treated on 2-18 June.

- **FORECAST**

Low numbers of Desert Locust may persist in some cropping areas and farms in the Western Desert and along the Lake Nasser shoreline. There is a low risk of a few swarms arriving in the Western Desert from Northwest Africa.



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Saudi Arabia

• SITUATION

No locusts were seen during surveys in the spring breeding areas in the interior from mid May to the first week of June.

• FORECAST

No significant developments are likely.

Yemen

• SITUATION

Individual immature and mature adults were seen on the northern Red Sea coast near Midi (1619N/4248E) on 9 June. No locusts were seen during surveys in the interior between Marib and Wadi Hadhramaut on 21-25 June.

• FORECAST

Locusts may appear in the interior between Marib and Ataq and lay eggs if conditions remain favourable. Isolated adults may persist in a few places on the Red Sea coastal plains.

Oman

• SITUATION

No locusts were seen during surveys carried out on the northern coast and in the interior on 8-15 June.

• FORECAST

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria Arab Republic, Tanzania, Turkey, UAE and Uganda

• FORECAST

No significant developments are likely.

EASTERN REGION

Iran

• SITUATION

No locusts were seen along the southeastern coast near Jask (2540N/5746E) in early June.

• FORECAST

No significant developments are likely.

Pakistan

• SITUATION

During the second half of May, locust numbers declined in the spring breeding areas in Baluchistan where isolated mature adults at densities up to 25/ha were present on the coast between Gwadar (2508N/

6219E) and Pasni (2513N/6330E) and inland near Turbat (2600N/6303E).

During the first half of June, isolated immature adults first appeared in the summer breeding areas at several places along the Indian border in Cholistan at densities up to 12/ha. Similar infestations persisted during the remainder of the month.

• FORECAST

Locust numbers will increase in the summer breeding areas along the Indian border where small-scale breeding is expected to occur in areas of rainfall. No significant developments are likely.

India

• SITUATION

No locusts were reported during the second half of May and first half of June.

• FORECAST

Scattered adults are likely to appear and breed on a small-scale in areas of recent rainfall in Rajasthan. No significant developments are likely.

Afghanistan

• SITUATION

No reports received.

• FORECAST

No significant developments are likely.



Announcements

Locust reporting. Affected countries are kindly reminded to make sure that all locust situation reports are sent to FAO HQ by the 28th day of the month so the information can be included in the FAO 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.

Reporting by e-mail. After each survey or control operation, affected countries should send completed *FAO Desert Locust Survey and Control Forms* or the RAMSES output file with a brief interpretation of the results by e-mail to eclo@fao.org.

eLocust. A new French version of eLocust for data collection and transmission in the Western Region is available at www.fao.org/news/global/locusts/eldown.htm. More details can be found at: www.fao.org/news/global/locusts/elocust.htm.

Upsurge photos. Pictures of the recent upsurge in the Western Region are available on the Internet at: www.fao.org/news/global/locusts/outbreakpix04.htm

Publications on the Internet. New FAO publications and meeting reports are available for downloading at www.fao.org/news/global/locusts/pubslst.htm:

- Contingency planning spreadsheets and simulations for outbreaks, upsurges and plagues (English, French)
- 24th Central Region Commission meeting report (English, Arabic)
- 8th Desert Locust Control Committee Technical Group meeting report (English, French)
- FAO Desert Locust Standard Operating Procedures (SOP) for survey, control and aerial operations (English, Arabic)
- FAO Desert Locust Guidelines – Arabic version in PDF is now available for downloading
- Desert Locust Joint Survey in the Spring Breeding Areas of Pakistan and the I.R. Iran (April 2004)

Desert Locust research award. The FAO Commission for Controlling the Desert Locust in the Central Region (CRC) is pleased to announce a cash award for outstanding research on Desert Locust. For more details, please contact the CRC Office in Cairo (munir.butrous@fao.org).

2004 events. The following meetings are scheduled:

- **Pesticide Referee Group.** 9th meeting, Rome, postponed
- **EMPRES/CR.** 12th Liaison Officers meeting, Asmara (Eritrea), 4-8 October
- **SW Asia Commission.** 24th session, Delhi (India), 11-15 October
- **Desert Locust Control Committee.** 38th session, Rome 29 November – 3 December
- **EMPRES/WR.** 3rd Liaison Officers meeting, Dakar (Senegal), 13-17 December

Urgent donor appeal. FAO launched an appeal to donors on 23 February for \$6 million, which continues to be urgently needed to support Desert Locust control operations in Mauritania, and another \$3 million for Mali, Niger and Chad, in order to prevent the early stages of the current upsurge from developing into a plague. More details are available at: www.fao.org/news/global/locusts/040223AppealE.htm.

At a donor meeting held in Rome on 8 April and chaired by the Director-General, the original appeal for \$9 million was increased by a further \$8 million to provide further assistance to Northwest and West Africa. More details are available at: <http://www.fao.org/news/global/locusts/presweb.pdf>.

Press release. A press release on the current Desert Locust emergency was issued by FAO on 5

July. It is available at: <http://www.fao.org/newsroom/en/index.html>.



Glossary of terms

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

NON-GREGARIOUS ADULTS AND HOPPERS

ISOLATED (FEW)

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

SCATTERED (SOME, LOW NUMBERS)

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

GROUP

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

ADULT SWARM AND HOPPER BAND SIZES

VERY SMALL

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

SMALL

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

MEDIUM

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

LARGE

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

VERY LARGE

- swarm: 500+ km² • band: 50+ ha

RAINFALL

LIGHT

- 1 - 20 mm of rainfall.

MODERATE

- 21 - 50 mm of rainfall.

HEAVY

- more than 50 mm of rainfall.

OTHER REPORTING TERMS

BREEDING

- the process of reproduction from copulation to fledging.

SUMMER RAINS AND BREEDING

- July - September/October



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EASTERN

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

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WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July

RECESSION

- period without widespread and heavy infestations by swarms.

REMISSION

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

OUTBREAK

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

UPSURGE

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

PLAGUE

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

DECLINE

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

REGIONS

WESTERN

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

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.



Desert Locust Summary

Criquet pèlerin - Situation résumée

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