



# FAO



## EMERGENCY CENTRE FOR LOCUST OPERATIONS

### DESERT LOCUST BULLETIN No. 204



#### GENERAL SITUATION DURING AUGUST 1995 FORECAST UNTIL MID-OCTOBER 1995

During August, significant infestations of Desert Locust were mainly confined to south-western Mauritania and northern Eritrea where breeding was in progress. Ground control operations treated nearly 10,000 ha during the month in the R'Kiz area of south-western Mauritania against maturing hopper bands. By the end of the month, new generation gregarious adults started to appear which are expected to form small groups and a few swarms and move into north-western Mauritania and perhaps the adjacent areas of northern Senegal during the forecast period. In Eritrea, hoppers started emerging in early August as a result of invading swarms that laid in late July. The infestations were concentrated in the western lowlands and on the Red Sea coastal plains where numerous small hopper bands were present. New swarms are expected to form during the forecast period from those hopper bands that are not controlled.

The extent of current breeding in Eritrea and adjacent areas of eastern Sudan is not well known. Heavy rainfall was recently reported in the Eritrean highlands which has led to the development of favourable ecological conditions for breeding over large areas. Furthermore, this region has played a critical role in the early stages of previous locust outbreaks and upsurges. Therefore, current and subsequent breeding combined with additional adults arriving from the summer breeding areas of Sudan could lead to a significant build-up of locust populations over the next few months.

Low and insignificant numbers of adults were scattered throughout the summer breeding areas in the Sahel of West Africa and Sudan, primarily in south-eastern Mauritania, northern Mali, western and southern Niger, eastern Chad, and in western Sudan. Although rain has occurred in most of these areas, breeding has so far been limited to south-eastern Mauritania and eastern Sudan. The latter area may have received some swarms in late July which laid and produced enough hoppers to warrant the undertaking of small scale control operations. Nevertheless, close monitoring is required to detect any breeding in areas of favourable conditions, especially in the Adrar des Iforas of Mali, Tamesna of Niger, eastern Chad and in the northern parts of western and central Sudan.

In the Red Sea Trench, light to moderate rainfall may have occurred along the coastal plains of Saudi Arabia and Yemen. Although only scattered locust adults were present in Saudi Arabia, conditions are expected to be favourable for breeding over a large portion of the coast that could lead to an increase in locust numbers.

In South-West Asia, small scale breeding is in progress in parts of Rajasthan in India and probably in adjacent desert areas of Pakistan. However, this is not expected to lead to any significant developments.

Late reports indicated that there was an eastern movement of locust adults and a few small swarms in Niger and Chad during late June and July. These adults probably originated from the spring breeding areas of North-West Africa.

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The FAO Desert Locust 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 Locust, Other Migratory Pests and Emergency Operations Group, AGP Division, FAO, 00100 Rome, Italy. It is also available on the Internet.

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## WEATHER & ECOLOGICAL CONDITIONS DURING AUGUST 1995

Based on field reports, METEOSAT and ARTEMIS satellite imagery, and Météo-France synoptic and rain data. Rainfall terms: light = less than 20 mm of rain; moderate = 20 - 50 mm; heavy = more than 50 mm.

During August, the ITCZ oscillated around 18N over the Sahel of West Africa and Sudan, reaching a few times 23N over Mali, Niger and Chad. As a result of atmospheric disturbances over the western Mediterranean throughout the month, the ITCZ was at times unusually far south over Mauritania. As a result, cold cloud activity and rainfall was more significant in the southern part of the summer breeding areas of the Sahel of West Africa and the Sudan, while less cloud activity and lighter rains occurred further north.

Rainfall during the month allowed favourable breeding conditions to persist in the R'Kiz area of south-western Mauritania, along the Mauritania/Mali border and in the Nioro, Nara and Kayes areas of western Mali. Light to moderate rainfall occurred over central Mauritania near Tamchakett and Oualata, and further north to Tidjikja, Nouakchott, Atar and Nouadhibou which could lead to an improvement in breeding conditions. Unusual cold cloud activity was visible in the extreme north-east over the El Hank area on the 26th. Although some cold clouds were present at times over the northern area of Mali, Niger and Chad, no significant rainfall was reported. Nevertheless, breeding conditions are expected to have improved in some places of Tamesna in Mali and Niger, and in parts of Kanem, Batha and Biltine in Chad.

In Eastern Africa, cold clouds were mainly present over central and eastern Sudan during the second half of August and rainfall decreased over most parts of the country compared to July. However, favourable conditions continued to be reported over large parts of Northern Darfur, Northern Kordofan and north of Kassala. Conditions may also be favourable in southern parts of the Northern Province from Wadi Milh to Dongola and Sinkat. As a result of runoff from heavy rains in the Eritrean highlands, conditions were favourable along the western lowlands and on the coastal plains near Massawa. Ecological conditions were mostly dry in Northern Somalia except for a few patches of green vegetation along some wadis in the interior between Erigavo and Las Koreh and on the adjacent coastal plains.

Substantial cold clouds were present throughout the month over the Red Sea coastal plains of Saudi Arabia and Yemen extending from Jeddah to Mocha. Consequently, moderate to heavy rains may have occurred at times and breeding conditions are expected to be improving in these areas. During the first half of the month, light rains may have fallen over a widespread area along the edge of the Empty Quarter from Marib to Shabwah and Thamud. Other rains may have also occurred on the coastal plains east and west of Aden.

As a result of continuing light to moderate rainfall associated with the summer monsoon in South-West Asia, conditions remain favourable for breeding in most areas of the Thar Desert in Rajasthan of India and in the Cholistan and Tharparkar Deserts of Pakistan.

In North-West Africa, favourable breeding conditions persisted in the extreme south of Algeria. In Morocco, dramatic rains occurred south of the Atlas Mountains; however, no significant locust populations are expected to be present in order to take advantage of any improvement in ecological conditions.



## AREA TREATED IN AUGUST 1995

Algeria	50 ha	(21-31 July)
Mauritania	470 ha	(21-31 July)
	9,850 ha	(1-31 August)
Senegal	1,561 ha	(21-31 July)
	8 ha	(1-20 August)
Sudan	500 ha	



## DESERT LOCUST SITUATION

Please see the last section of this Bulletin for a definition of terms used in reporting the current locust situation.

### WEST AFRICA

#### MAURITANIA

During late July and the first two dekads of August, swarm laying continued in the R'Kiz area of southern Trarza. Most of these swarms were reported to be small and low density. A total of 2,846 ha of swarms were treated up to 20 August. Although first instar hoppers were not reported until 8 August, hopper emergence probably started in mid July as suggested by reports of fifth instar hoppers on 18 August. During the remainder of the month, an increasing number of late instar hopper patches and bands were detected with an average size of 50 sq. m although some were as large as a few hectares and were extremely dense with up to 20,000 hoppers per sq. m. Hopper infestations were dispersed within an area covering a few tens of kilometres north and east of Lake R'Kiz. New generation gregarious adults were first seen on 31 August west of R'Kiz. At the end of the month, ground control operations had intensified against late instar hopper bands south-east of Mederdra (ca. 1649-1652N/1540-1543W). These operations treated 7,474 ha of bands from 12-31 August.

Further east in the two Hodhs, adult infestations gradually declined from the last dekad of July onwards. Only scattered adults were present at several places from south of Aioun to Nema (1632N/0712W) and control was limited to 350 ha of copulating adults north-west of Nema. During August, scattered mature adults persisted primarily near Timbedra (1617N/0816W) and to a lesser extent near Nema. Breeding has been limited so far to one area south of Timbedra where third and fourth instar hoppers were seen on 31 August and another north-west of Nema where first and second instar hoppers were present. Isolated adults were also reported at a few places in Tagant, Assaba and Brakna. At the end of the month, there were unconfirmed reports of locusts in eastern Trarza and northern Brakna as well as in the extreme eastern Hodh El Chargui near the Malian border.

#### SENEGAL

Late reports indicated that low to moderate densities of mature adults and three swarms laid in the Senegal River Valley and surrounding areas near Richard Toll (1627N/1542W), Podor (1639N/1458W) and Matam (1538N/1317W) during the second half of July. Control operations were carried out against the swarms which were located near MBelogne (1607N/1441W) and Sare Lamo (1605N/1536W) on a total of 1,561 ha. By the end of July, hatching had started near Richard Toll where first instar hoppers mixed with low density mature adults were reported on a total of 60 ha, and scattered adults first appeared further south near Louga (1538N/1613W) on 10 ha.

During the first half of August, hatching commenced near MBelogne and Sare Lamo on a few tens of hectares mixed with scattered mature adults. Farmers treated small localized patches and early instar hopper bands on a total of 8 ha from 1-17 August.

#### MALI

During the second dekad of July, scattered adults continued to be reported in a few places along the Niger River Valley near Tenenkou (1428N/0455W), in central Mali near Mourdiah (1435N/0725W) and south of the Mauritanian border near Nioro (1511N/0937W). During the third dekade of the month, there was an unconfirmed report of locusts in the Timetrine area near Kidal (1827N/0125E).

#### NIGER

Late reports indicated that low numbers of adults were present during the second dekad of June west of the Air mountains and in the Tamesna south of Arlit (1945N/0715E) and near In Abangharit (1753N/0603E). During the third dekad, there was a general southern and eastern movement of adults and swarms throughout the country. Several swarms were seen in the west near Tillabery (1428N/0127E) on 20-23 June. Scattered adults appeared at several locations of Tamesna near In Abangharit, east of the Air mountains near Aney (1924N/1256E) and Bilma (1841N/1256E), and in the south near Zinder (1348N/0859E) and Diffa (1313N/1202E).

During the first two dekads of July, additional locusts moved south and eastwards. A few mature swarms were seen near Arlit on the 4th and several groups of adults appeared at Seguedine oasis (2010N/1300E) and in the Djado area of north-eastern Niger on the 9th. Swarms were also present south of Agadez during the second dekad. Throughout the month, scattered adults, some of them laying, were reported from the Tillabery, Dosso (1337N/0314E), Tahoua (1421N/0623E), Zinder and Diffa areas.

During the first ten days of August, there was an unconfirmed report of damage caused by hopper bands in cropping areas north of Agadez. Scattered adults continued to be present in the Diffa and Tillabery areas.

## **CHAD**

In late July, several swarms were reported flying east of Biltine (1430N/2053E) and in the Adre (1428N/2212E) area.

During the first two dekads of August, isolated adults were reported south of Abeche (1349N/2049E). A few isolated transiens adults were reported in the Adre area near the Sudanese border while no locusts were seen during surveys in the Guerreda (1431N/2205E) area.

**No locust information has been received from other countries in the Region up to 31 August.**

## **NORTH-WEST AFRICA**

### **ALGERIA**

During the last dekad of July, infestations continued to decline. Scattered mature adults were reported in the extreme south near Timiaouine (2044N/0228E). Control was carried out against low density mature adults on 50 ha in the In Salah (2313N/0422E) area.

No locusts were reported during the first two dekads of August.

### **MOROCCO**

No locusts were reported during August.

**No locust information has been received from other countries in the Region up to 31 August.**

## **EASTERN AFRICA**

### **SUDAN**

During the last dekad of July, scattered mature adults, at densities of up to 60 per ha, were found at three out of 17 locations surveyed south of El Fasher in Northern Darfur and an isolated adult was seen in the Northern Province near Shendi at Umm Durwa (1617N/3352E) where nomads had previously reported a mature swarm. On 30 July, an immature swarm covering 6 sq. km was seen flying north-west in Northern Darfur at Wadi Furawiya (1529N/2337E). In late July and early August, there was an unconfirmed report of hatchlings near the Chadian border (ca. 1430N/2230E).

In mid-August, three swarms appeared in the Eastern Region which may have come from adjacent areas of Eritrea. Swarms were actively moving and were estimated to total about 3.4 sq. km. in size. Scattered mature adults were said to be present in many summer breeding areas of Northern Darfur, Northern Kordofan and Kassala covering a total of about 3,070 ha. Control operations were carried out against 500 ha of first and second instar hoppers in the Kassala (1524N/3630E) area.

### **ERITREA**

Newly emerging hoppers were first reported in the western lowlands in Barka Province near Sherit (1635N/3754E) and Baden (1655N/3757E) on 9 August and in two adjacent locations on the 11th. Early instar hopper bands were reported on 3,000 ha further south near Kerkebet (1520N/3725E) on the 18th where ground control operations were in progress. The extent of these infestations is not well known but could be quite large and widespread. On the Red Sea coastal plains north of Massawa, numerous small infestations of hoppers were reported on 200 ha in Wadi Shelshela (1548N/3912E) on the 18th.

## SOMALIA

Scattered maturing adults at densities of up to 120 per ha were seen during surveys at four out of 16 locations on the north-western coast and adjacent interior area between Meit (1100N/4706E) and Elayo (1118N/4850E) on 16-21 August.

**No locust information has been received from other countries in the Region up to 31 August.**

## NEAR EAST

### SAUDI ARABIA

Isolated mature adults were present in the Jizan area during July. No further details are available.

### KUWAIT

No locusts were reported during July.

**No locust information has been received from other countries in the Region up to 31 August.**

## SOUTH-WEST ASIA

### INDIA

During the second half of July, locust infestations increased in Rajasthan where maturing adults were reported from a total of 30 locations primarily in Jaisalmer and Bikaner districts and to a lesser extent in Barmer, Jodhpur and Jalore districts. A maximum of 7 adults was seen at Nagar (2826N/7340E) in Bikaner district on the 25th.

During the first half of August, a few first and second instar hoppers were reported in Bikaner district at Sewra (2732N/7218E), and isolated adults were present in five locations of Jaisalmer, three of Bikaner and one of Barmer.

### PAKISTAN

During the second half of July, locust infestations continued to increase in the summer breeding areas. A total of 14 locations in Cholistan, 16 in Tharparkar, 20 in Nara and 10 in Lasbela reported isolated maturing adults, with a maximum of 10 adults seen at Umerkot (2517N/6950E) on the 31st.

Similar infestations were again reported in a total of 69 locations in the same areas during the first half of August. No breeding has been reported to date.

**No locust information has been received from other countries in the Region up to 31 August.**



Forecasting terms used in this section to indicate the chances of a particular event happening are indicated below; every term is arranged within each category from most to least probable:

high probability	will, probably, almost certain, likely, expected
medium probability	may, might
low probability	possibly, perhaps, unlikely

## WEST AFRICA

### MAURITANIA

Infestations that escape detection and control operations in the R'Kiz area will start forming small sized swarms early in the forecast period. Some of these are expected to stay in the area, mature, and start to lay in early October while others may move north to Trarza, Inchiri and Adrar or south with the retreating ITCZ toward Senegal. As a result of current breeding in the two Hodhs, locust numbers are expected to increase slightly and new adults are likely to start appearing from mid September onwards. Most of these are expected to move towards the west and north during the second half of the forecast period.

## **SENEGAL**

Low numbers of new adults are likely to start appearing from mid September onwards in the north. These may be augmented by additional adults and perhaps a few groups and small swarms coming from the north. Adults are likely to move progressively southwards with the retreating ITCZ during the second half of the forecast period.

## **MALI**

Breeding is probably in progress in parts of the Adrar des Iforas and perhaps in the west near Nioro and Nara. However this is expected to be on a small scale and produce low numbers of new adults. By the end of the forecast period, these may concentrate in remaining areas of green vegetation and form a few small groups.

## **NIGER**

As a consequence of the widespread dispersion of adults earlier in the summer and recent rainfall, small scale breeding is expected to be in progress in parts of Tamesna, southern Air and in the south near Zinder and Diffa which will lead to an increase in locust numbers during the forecast period. By mid October, new adults in the north may concentrate in remaining areas of green vegetation and form a few small groups.

## **CHAD**

Localized breeding on a small scale is likely to be in progress in parts of the Eastern region near Adre and between Abeche and Fada. As a result, locust numbers will increase and by the end of the forecast period, new adults may concentrate in remaining areas of green vegetation.

## **NORTH-WEST AFRICA**

### **MOROCCO**

Low numbers of immature adults may appear in the extreme south-west late in the forecast period as a result of movement from the summer breeding areas of the Sahel.

### **ALGERIA**

Isolated adults are expected to persist in the extreme south. These may be augmented by additional adults arriving from the summer breeding areas of the Sahel late in the forecast period.

### **TUNISIA and LIBYA**

No significant developments are likely.

## **EASTERN AFRICA**

### **SUDAN**

Locust numbers will increase in all summer breeding areas as a result of current breeding. New adults are likely to first start appearing from mid September onwards in the Eastern Region followed by Northern Darfur, Northern Kordofan and parts of the Northern Region. Those in the Eastern Region may form small groups or a few swarms while those in other areas are expected to be less numerous. By the end of the forecast period, seasonal movement from the summer breeding areas towards the Red Sea coast is likely to start and adults may appear in sub-coastal and coastal areas.

### **ERITREA**

Hopper infestations are expected to increase and form small bands in the western lowlands and on the Red Sea coast early in the forecast period. New adults are likely to first start appearing from mid September onwards and form groups and small swarms. Some of these may remain in green areas, mature and lay while others will move towards the Red Sea coastal plains.

### **SOMALIA**

Scattered adults are expected to persist along some parts of the northern coastal plains and adjacent interior, and breed if rainfall occurs.

## **DJIBOUTI, ETHIOPIA, KENYA, UGANDA and TANZANIA**

No significant developments are likely.

## **NEAR EAST**

### **EGYPT**

Low numbers of adults may appear on the southern coastal plains of the Red Sea late in the forecast period as a result of movement from the summer breeding areas of Sudan.

### **SAUDI ARABIA**

Locust numbers may increase on the coastal plains from Jeddah to Jizan as a result of any current breeding and be augmented late in the forecast period by adults moving across the Red Sea from Eastern Africa.

### **YEMEN**

Scattered adults may be present and breeding along the Tihama coastal plains and in areas of recent rainfall along the Aden coastal plains and desert interior from Marib to Thamud. There is a low probability that additional adults may appear late in the forecast period on the Tihama from Eastern Africa.

## **BAHRAIN, IRAQ, ISRAEL, JORDAN, KUWAIT, LEBANON, OMAN, QATAR, SYRIA and UAE**

No significant developments are likely.

## **SOUTH-WEST ASIA**

### **PAKISTAN**

Small scale breeding is likely to be in progress in parts of Cholistan and Tharparkar Deserts. As a result, locust numbers are expected to increase during the forecast period.

### **INDIA**

Breeding will continue on a small scale in parts of Rajasthan with new adults first starting to appear early in the forecast period. By the end of the forecast period adults may begin moving slowly westwards.

### **IRAN and AFGHANISTAN**

No significant developments are likely.



## GLOSSARY OF TERMS

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

### **Non-gregarious adults and hoppers**

isolated	very few present and no mutual reaction occurring; 0 - 1 adult per 400 m foot transect (or less than 25 per ha). Other terms: a few.
scattered	enough present for mutual reaction to be possible but no ground or basking groups seen; 1 - 20 adults per 400 m foot transect (or 25 - 500 per ha). other terms: some, low numbers.
group	forming ground or basking groups; more than 20 adults per 400 m foot transect (or more than 500 per ha).

### **Adult swarm and hopper band sizes**

very small	swarm: less than 1 sq. km	band: 1 - 25 sq. m.
small	swarm: 1 - 10 sq. km	band: 25 - 2,500 sq. m.
medium	swarm: 10 - 100 sq. km	band: 2,500 sq. m - 10 ha
large	swarm: 100 - 500 sq. km	band: 10 - 50 ha
very large	swarm: more than 500 sq. km	band: more than 50 ha

### **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.
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.
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.



# Desert Locust: summary No. 204

## Criquet pèlerin: situation résumée

