

# **FAO Emergency Centre for Locust Operations**



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# **General Situation during September 2005** Forecast until mid-November 2005

**During September, small-scale breeding** occurred in parts of the summer breeding area in the Sahel in West Africa, causing locust numbers to increase slightly but still remaining relatively low and insignificant. Although rains declined in many of these areas and vegetation started to dry out by the end of the month, survey operations need to be maintained to check whether locust populations concentrate in the areas remaining green. Limited control operations were carried out against small infestations in southern Algeria and southwest Libya. In the Central Region, control teams treated hopper bands in Darfur, Sudan while operations against hoppers and adults came to an end on the Red Sea coast of Eritrea. During the forecast period, locusts are likely to migrate to the Sudanese Red Sea coast. Intensive monitoring is required in the interior of Yemen where smallscale breeding continued for a second month and control operations were conducted. In South-West Asia, summer breeding along the Indo-Pakistan border has led to an increase in locusts and a swarm reportedly formed.

Western Region. Rainfall declined during in the Sahel and vegetation started to dry out except in western Mauritania and in Niger where small-scale breeding occurred. So far, breeding has not been reported in northern Mali and has probably ended in Chad. In both countries, only scattered adults were present during September. Local breeding occurred in southern Algeria and control operations were

September within much of the summer breeding areas

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carried out for the second consecutive month. Adults were seen copulating in mid-September in southwest Libya. During the forecast period, vegetation will continue to dry out in the Sahel and adults are likely to concentrate in the few areas that remain green. This may cause some small groups to form in Niger, while in Mauritania adults will probably move towards the northwest (Inchiri) and, if rainfall occurs, breed on a small scale. There is a low risk that a few adult groups could move towards Northwest Africa from western Sudan. Intensive ground and helicopter surveys will be maintained in the Sahelian countries until the end of October.

**Central Region.** Ground control operations continued against hopper bands until at least mid-September in the secure areas of Darfur, Sudan. As vegetation dries out in October, adult groups could form in Darfur and most of these are likely to move towards the winter breeding areas along the Sudanese Red Sea coast while a few could move west towards Northwest Africa. Although control operations ended in mid-September on the northern Red Sea coast in Eritrea where breeding previously occurred, another generation of breeding could occur, if good rains fall, and locust numbers could increase again. Summer breeding should soon come to an end in the interior of **Yemen** where limited control operations were undertaken. Adults and any groups that form are expected to move to the winter areas along the Red Sea coastal plains in Yemen and eventually breed. No locusts were reported elsewhere in the Region.

Eastern Region. Locust numbers increased in the summer breeding areas along the Indo-Pakistan border during September. Control teams in Rajasthan, India treated nearly 1,900 ha of gregarizing hoppers, and one swarm reportedly formed on the border with Pakistan. Smaller-scale breeding occurred in adjacent areas in Pakistan. Breeding may continue for a few



more weeks but once vegetation starts to dry out, locusts are likely to concentrate and form several small adult groups and perhaps a few small swarms. By the end of the forecast period, an increasing number of adults are likely to move west towards the southern Indus Valley in Pakistan.



# Weather & Ecological Conditions in September 2005

Summer rains began to decline in mid-September in parts of the summer breeding areas in West Africa and Sudan and vegetation was drying up. Good rains continued to fall in Yemen along the Red Sea coast and in the interior. Breeding conditions remained favourable along the Indo-Pakistan area.

In the Western Region, the Inter-Tropical Convergence Zone (ITCZ) started its seasonal retreat towards the south during September, oscillating around 15N over West Africa and occasionally reaching 27N over southwest Algeria. During the first decade, moderate rains fell in southern Algeria near the Malian border as well as in the southeast near the Libyan border early in the month. Good rains also fell in northwest and southern Mauritania, northern Mali, in parts of Tamesna, Niger, and in Chad. Very little rain fell during the remainder of the month in these areas except for southern Mauritania. By the end of the month, vegetation had started to dry up in northern Mali (Timetrine, Adrar des Iforas and Tamesna), in parts of Tamesna and the Air Mountains in Niger, and in Chad. On the other hand, ecological conditions remained favourable for breeding in southern Mauritania and conditions improved in northwest Mauritania, in southern and southeast Algeria and in southwest Libya near Ghat.

In the **Central Region**, there was significant decline in rainfall in the summer breeding areas in Sudan during September. Nevertheless, ecological conditions remained favourable for breeding. In Eritrea, rainfall started to decline along the Red Sea coast during the second decade of the month and vegetations was drying out. Good rains fell for the third consecutive month in Yemen along the Red Sea

coast and in the interior near Shabwah. Consequently, breeding conditions remained favourable in both areas. Moderate to heavy rains fell along parts of the northern coast and plateau of Somalia.

In the **Eastern Region**, light to moderate rain associated with the monsoon continued to fall in parts of the summer breeding area in Rajasthan, India and in adjacent areas in the Cholistan and Tharparkar Deserts in Pakistan during September. As a result, ecological conditions were favourable for breeding in both countries.



# **Area Treated**

Some 3,600 ha were treated in September compared to 750,000 ha in September 2004, bringing the total area treated since the beginning of the upsurge (October 2003) to 12.9 million ha.

Algeria	140 ha (21-31 August)
	315 ha (11-20 September)
Eritrea	85 ha (7-12 September)
India	1,886 ha (1-30 September)
Libya	1,555 ha (2-14 September)
Sudan	159 ha (1-14 September)
Yemen	175 ha (September)

Note: Reporting delays and discrepancies may affect the accuracy of these figures.



# **Desert Locust Situation and Forecast**

( see also the summary on page 1 )

# **WESTERN REGION**

# Mauritania

## • SITUATION

During September, small-scale breeding occurred to the west and east of Tidjikja (1833N/1126W) where a few first and second instar hoppers mixed with mature solitarious adults were found during intensive surveys. Consequently, locust numbers gradually increased but remained relatively low and insignificant. Isolated mature adults were also reported in the southeast near Nema (1636N/0715W) and Oualata (1717N/0701W), at one location in the Senegal River Valley across from Podor, and appeared in the northwest between Akjoujt (1945N/1421W) and Atar (2032N/1308W).

### • Forecast

Locust numbers will decline in the summer breeding areas in the south as vegetation dries out.

Consequently, scattered adults will move towards the northwest where they are likely to appear in Inchiri and eventually breed if rainfall occurs. Locust numbers will increase but should remain below threatening levels in the Aftout Fai area and near Tidjikja as small-scale breeding continues in the coming weeks.

#### Mali

#### • SITUATION

During September, intensive ground and helicopter surveys were carried out in the north. Throughout the month, only isolated adults were reported but during the last week, scattered immature and mature solitarious adults, at densities well below 100 adults/ha, and mixed with a few *transiens*-appearing adults were seen at about a dozen places, mainly in Tamesna and to a lesser extent in the northern Adrar des Iforas and in Timetrine.

#### Forecast

Unless further rainfall occurs in the Adrar des Iforas or Tamesna, locust numbers will decline and only isolated adults are likely to persist and could breed in the few areas that remain green in the north.

## Niger

### • SITUATION

During September, locust numbers increased slightly in Tamesna and the Air Mountains where low densities of mature solitarious adults were seen at numerous places during intensive ground and helicopter surveys. Small-scale breeding occurred in at least one location in northwest Tamesna near the Algerian and Malian borders where an individual fifth instar hopper and a few immature adults were found. By the end of the month, breeding was reported near the Air Mountains at Tezrzait (1921N/0853E) where a few late instar hoppers mixed with immature adults at densities of 5,000 adults/ha were seen on 30 ha on the 9th. Breeding also occurred near Agadez (1700N/0756E) where isolated fourth instar hoppers were present on the 25th, and near Agaliouk (1846N/0731E) where mainly mature adults, of which some were copulating, were present on about 500 ha at densities up to 300 adults/ha mixed with solitarious and a few transiens hoppers of all stages (second instar dominant). In the latter area on 27 September, some of the hoppers were concentrating into groups at densities of 10-20 hoppers/m<sup>2</sup> over about 10 ha.

During the last week of the month, the media reported that a swarm was present near the Malian border. Field teams confirmed that this was not the case and only scattered solitarious adults were present.

## • Forecast

As summer rains cease and vegetation becomes drier, breeding will decline and be confined to those

few areas that remain green in Tamesna and the Air Mountains where locusts are expected to concentrate, increase slightly in density and, at most, form a few small groups.

#### Chad

### SITUATION

During the first two decades of September, isolated mature adults were seen at a few places in Kanem. No locusts were seen near Fada during intensive ground and helicopter surveys. No locusts were seen during the third decade of the month.

#### Forecast

Unless further rainfall occurs, locust numbers will decline and only isolated adults are likely to persist in the few areas that remain green in Kanem, Ouaddai and Fada.

### Senegal

### • SITUATION

No locusts were reported during the third decade of August and first two decades in September.

#### • Forecast

No significant developments are likely.

### **Burkina Faso**

### • SITUATION

No locusts were reported during August.

### • Forecast

No significant developments are likely.

### Nigeria

### • SITUATION

Recent reports in the media of locust infestations in the north are not of Desert Locust.

### • Forecast

No significant developments are likely.

Benin, Cameroon, Cape Verde, Cote d'Ivoire, Gambia, Ghana, Guinea Bissau, Guinea, Liberia, Sierra Leone and Togo

# • Forecast

No significant developments are likely.

# Algeria

# SITUATION

During the last decade of August, ground control operations were carried out on 140 ha of immature solitarious adults mixed with a few fifth instar hoppers



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north of Tamanrasset (2250N/0528E).

During September, ground control operations treated 315 ha of low-density solitarious hoppers and adults in the extreme south near the Niger border in the second decade. No locusts were reported during the remainder of the month.

#### Forecast

Locust numbers are expected to decline in the south as ecological conditions become unfavourable.

#### Morocco

### • SITUATION

No locusts were reported during September.

#### Forecast

A few isolated adults may appear in the southern part of Western Sahara.

# Libyan Arab Jamahiriya

### • SITUATION

At the end of August, groups of low to medium density solitarious and *transiens* adults were seen in the southwest near Ghat in Wadi Tetaghsin (2532N/0955E) and Wadi Insika (2531N/0945E) on 110 ha. No locusts were seen in the southeast near Jebel Uweinat.

During September, small infestations persisted in the above wadis near Ghat where some adults were seen copulating by mid-month and ground control operations treated 1,555 ha during September. No locusts were seen in the northwest near Ghadames.

# • Forecast

Small-scale breeding may occur in the southwest near Ghat but locust numbers are expected to remain low.

# **Tunisia**

### • SITUATION

A late report indicated that the situation was calm during August.

# • Forecast

No significant developments are likely.

# **CENTRAL REGION**

### Sudan

### • SITUATION

During the first half of September, ground control operations treated 159 ha of medium density fifth instar hopper bands in the secure areas in Northern

Darfur near El Fasher (1337N/2522E). At mid-month, isolated mature adults were seen at two places along the western side of the Red Sea Hills near Haiya (1820N/3621E). No locusts were seen during surveys carried out in Northern Kordofan between El Obeid (1311N/3010E) and Ed Dueim (1400N/3220E) and on the Red Sea coast near Suakin (1908N/3717E).

During the second half of September, no locusts were seen in Western Darfur but security difficulties in Northern Darfur prevented teams from confirming reports of hopper infestations near Mellit (1407N/2543E).

### • Forecast

A limited number of small adult groups could form in Northern and Western Darfur. If so, most of these adults are likely to move towards the winter breeding areas along the Red Sea coast while a few could move west towards Northwest Africa. Those that move east may first appear along the Atbara River. Small-scale breeding along the Red Sea coast is expected to commence with the onset of the winter rains.

### **Eritrea**

#### • SITUATION

No locusts were seen during surveys carried out in the Western Lowlands in late August.

During the first half of September, control teams treated 85 ha of residual hopper and immature adult populations, at densities of 3-10 hoppers/m² and 2-70 adults/m², in previously infested areas on the northern coastal plains of the Red Sea near Mehimet (1723N/3833E). By the 20th, only a few small hopper infestations persisted mixed with adults, some of which were laying, at densities up to 5 adults/m². Elsewhere on the coast, hoppers and laying adults were present in crops near Naro (1626N/3840E) and a few adults were seen in farms near Shelshela (1553N/3906E).

No locusts were seen during surveys carried out in the Western Lowlands in late August.

### Forecast

Another generation of hatching is expected to occur in favourable areas along the Red Sea coastal plains between Massawa and the Sudanese border, causing locust numbers to increase and the formation of a few small groups of hoppers and adults. Therefore, intensive surveys should be carried out on a regular basis during the forecast period.

# **Ethiopia**

### • SITUATION

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

### • Forecast

No significant developments are likely.

# Djibouti

### • SITUATION

No locusts were seen during surveys carried out in late August in the interior near Dikhil (1108N/4220E).

### • Forecast

No significant developments are likely.

#### Somalia

### • SITUATION

A late report indicated that no locusts were seen at the end of August along the escarpment and on the plateau near Hargeisa. No locusts were seen during the last decade of September in the above areas nor on the northwest coast near Berbera and nor along the Djibouti border.

### • FORECAST

No significant developments are likely.

### **Egypt**

### • SITUATION

No locusts were seen during surveys carried out in September along the Red Sea coast near Abu Ramad, near Lake Nasser at Abu Simbel and in the Western Desert at Sh. Oweinat.

### • Forecast

No significant developments are likely.

### Saudi Arabia

### • SITUATION

No reports were received during September.

## • FORECAST

Isolated adults may be present on the southern coastal plains of the Red Sea near Jizan and small-scale breeding could occur in areas where conditions are favourable.

## Yemen

### • SITUATION

During September, small-scale breeding continued in the interior desert where patches of solitarious and *transiens* hoppers of all instars at densities of 15-50 hoppers/m² were seen at six locations near Komama (1440N/4618E) within an area of about 500 ha. Solitarious fledglings, immature and mature adults were concentrated in the limited areas of green vegetation at densities up to 1,500 adults/ha. Smaller hopper and adult infestations were seen nearby in the Humama area (ca. 1442N/4615E). At the end of the month, ground control operations treated 175 ha.

On the Red Sea coastal plains, isolated immature and mature adults were seen on the central Tihama south of Hodeidah (1450N/4258E) and on the northern Tihama near Suq Abs (1600N/4312E).

### • Forecast

As rainfall ceases and vegetation becomes drier in the Shabwah interior, breeding will decline and

locusts are likely to concentrate in the few areas that remain green, increase slightly in density and perhaps form a few small groups. By the end of the forecast period, most of the adults are likely to have moved towards the Red Sea coastal plains where small-scale breeding is expected to occur.

### **Oman**

### • SITUATION

No locusts were seen during surveys carried out along the Musandam peninsula and on the Batinah coast in September.

### • Forecast

No significant developments are likely.

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

### Forecast

No significant developments are likely.

## **EASTERN REGION**

#### Iran

#### SITUATION

No locusts were seen during surveys carried out on 25 September along the southern coast near Jask and Bandar Abbas.

### Forecast

No significant developments are likely.

## **Pakistan**

### • SITUATION

During the second half of August, isolated solitarious mature adults, at densities up to 60 adults/ ha, persisted in the Tharparkar, Nara and Cholistan deserts as well as in the Lasbela area west of Karachi where they were seen at 38 places. Breeding occurred in Cholistan near Bahawalpur (2924N/7147E) and hoppers of all instars were present at densities of 1-4 hoppers/m² at five locations.

During the first half of September, adult densities increased slightly to about 230 adults/ha in the above-mentioned areas. Breeding extended to the Nara Desert where isolated third instar hoppers were seen at three places near Sukkur (2742N/6854E).

During the last week of the month, a 5 km<sup>2</sup> swarm was seen in Cholistan near the Indian border at Salamsar (2758N/7149E) and groups of gregarious adults were reported nearby in the



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Kakki (2855N/7114E) area. Control operations were immediately initiated.

#### Forecast

Locust numbers may increase early in the forecast period as a result of any undiscovered local breeding. Once summer rains cease and vegetation becomes drier, breeding will decline and locusts may concentrate in the few areas that remain green, increase slightly in density and perhaps form a few small groups. Adults are likely to move back and forth along both sides of the Indo-Pakistan border at any time. By the end of the forecast period, easterly winds should become established in the region and an increasing number of adults are likely to move west towards the southern Indus Valley.

#### India

#### SITUATION

During August, isolated adults at densities up to 25 adults/ha were found in increasing numbers of places in Rajasthan, primarily between Jodhpur (2618N/7308E) and Bikaner (2801N/7322E), and to a lesser extent near Barmer (2543N/7125E). Some adults were reported to be laying eggs northwest of Jodhpur.

During the first half of September, small-scale breeding occurred northwest of Jodhpur between Phalodi (2706N/7222E) and Jaisalmer (2652N/7055E) where small infestations of hoppers of all instars at densities of up to one hopper/10m² were present at about 40 locations. Higher densities of 1,000 hoppers/m² were reported at two locations and a third place reported 20 hoppers/m². Fledging commenced during the second week and the size of the infested areas increased. By the end of the month, immature adults were forming small groups in some places. Ground control operations treated 1,886 ha during September.

### • FORECAST

Locust numbers are expected to increase further as breeding continues in areas of recent rainfall in Rajasthan. Once the rains cease and vegetation starts to dry out, locusts are likely to concentrate in the few areas that remain green, increase slightly in density, become more gregarious and form small groups and perhaps a few small swarms. Adults will probably move back and forth along both sides of the Indo-Pakistan border at any time but, by the end of the forecast period, an increasing number could move

west once easterly winds become established in the region.

# Afghanistan

• SITUATION

No reports received.

• Forecast

No significant developments are likely.



# **Announcements**

Locust reporting. During locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent twice/week and affected countries are encouraged to prepare decadal bulletins summarizing the situation. During recession periods, countries should report at least once/month. All information should be sent by e-mail to the FAO/ ECLO Desert Locust Information Service (eclo@fao. org). Information received by the end of the month will be included in the FAO Desert Locust Bulletin for the current month; otherwise, it will not appear until the following month. Reports should be sent even if no locusts were found or if no surveys were conducted.

Locust web pages. The Locust Group has launched an updated version of its web site in English and French at: www.fao.org/ag/locusts.

**Locust archives.** Desert Locust reports received by FAO from affected countries from 1952 to the present are available on a series of four CDs in PDF. Please contact the Locust Group for more details.

**Desert Locust booklet.** FAO has produced a booklet for the general public and donor community entitled Hunger in their wake: Inside the battle against the Desert Locust, available for download at www.fao. org/ag/locusts (Publications).

**Publications on the Internet.** New FAO publications and meeting reports are available for downloading at www.fao.org/ag/locusts (Publications):

 Report of the Desert Locust joint survey in the spring breeding areas of Pakistan and I.R. Iran, April 2005 (English)

**2003-05** campaign evaluation. An independent evaluation of the recent Desert Locust campaign will be carried out during the next few months. It will be overseen by a Steering Committee composed of donors and affected countries. The results of the evaluation are expected to be reported at the next session of the DLCC. Consequently, this session has been rescheduled to accommodate the evaluation.

**2005-2006 events.** The following meetings are tentatively scheduled:

- EMPRES/CR. 6th Consultative Committee, Cairo (Egypt), 13-15 November
- EMPRES/CR. 13th Liaison Officers meeting, Yemen, January 2006
- EMPRES/WR. 4th Liaison Officers meeting, Algiers, January/February 2006
- DLCC. 38th Session, Rome, 6-10 March



# **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 km<sup>2</sup> • band: 1 - 25 m<sup>2</sup>

• swarm: 1 - 10 km<sup>2</sup> • band: 25 - 2,500 m<sup>2</sup>

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

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

• swarm: 500+ km<sup>2</sup> • band: 50+ ha

### **RAINFALL**

VERY LARGE

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.
- 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

PLAGUE

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

### **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, Guidea 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.

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



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