

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 226
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General Situation during June 1997 Forecast until mid-August 1997

Control operations against Desert Locust infestations on the Red Sea coastal plains of Saudi Arabia came to an end during June. The absence of high numbers of locusts reported during the month in adjacent areas and regions suggests that these operations have prevented large numbers of adults from moving west and east to the summer breeding areas of Africa and South-West Asia. Only small numbers of solitary and transiens adults have appeared in Sudan and Yemen, and one swarm was reported in northern Yemen. During the forecast period, small scale breeding is expected to occur in the interior of Sudan and Yemen, on the southern Red Sea coastal plains of Saudi Arabia and along the Indo-Pakistan border. Isolated breeding may also occur in parts of the Sahel in West Africa, primarily in southern Mauritania and perhaps in northern Mali and Niger as the seasonal rains commence.

Central Region

Large-scale control operations finished on the Red Sea coastal plains of Saudi Arabia on 9 June. Since then, small groups of maturing adults were reported on the southern plains. Some of these are thought to have

moved into adjacent areas of Yemen where a small swarm was seen in the north on 21 June and adult groups were reported laying in the interior where breeding occurred last autumn. Others may have moved across the Red Sea into eastern and central Sudan where solitary adults and the remnants of one swarm were reported. Low numbers of solitary hoppers and adults were reported from northern coastal and interior areas of Oman and in south-eastern Egypt. These are likely to be a result of localised breeding that followed rains in April and mid May respectively. Isolated adults were present on the northern coast of Somalia.

Eastern Region

Small scale breeding occurred during May and June in the northern interior of Baluchistan in western Pakistan; however, adult numbers subsequently were declining during June. Scattered adults were present in Rajasthan, India. Heavy rains fell during the month in the summer breeding areas along the Indo-Pakistan border where low numbers of adults will appear and lay during the forecast period.

Western Region

No reports were received of significant infestations in West or North-West Africa. Small scale and insignificant breeding occurred in central Algeria. Seasonal rains have started in some places of southern Mauritania where scattered adults may be present and are likely to breed on a small scale during the forecast period.

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Weather & Ecological Conditions during June 1997

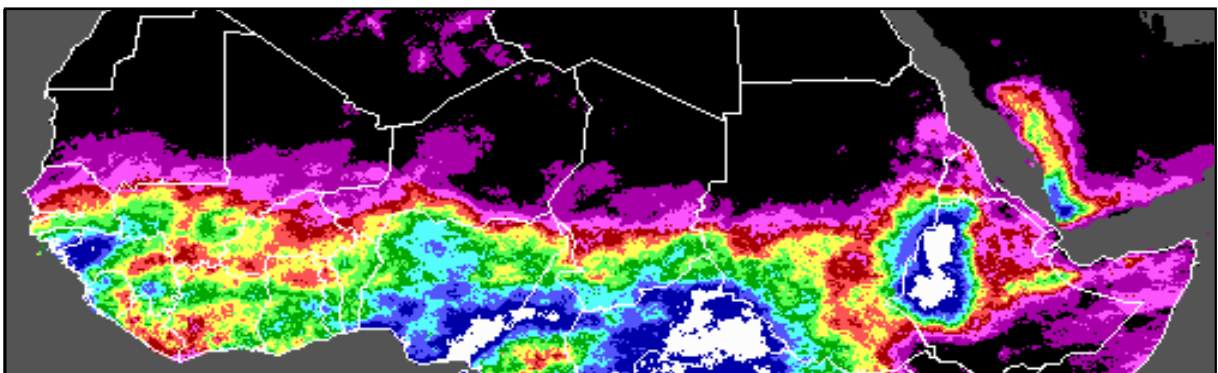
Breeding conditions were improving in a few areas of the Sahel in West Africa and Sudan as a result of localised rainfall. Conditions were dry along most of the Red Sea coastal plains but clouds were present over the coast of Yemen extending to south-western Saudi Arabia. Although the South-West Asia monsoon had not reached the Indo-Pakistan summer breeding areas, breeding conditions were favourable in some places as a result of localised rainfall.

In **West Africa**, the Inter Tropical Convergence Zone (ITCZ) varied between 15-20 N. The winds north of the ITCZ, were generally easterly over Chad, Niger and Mali, but were north-easterly or northerly over Mauritania. The ecological conditions in this part of the region were unfavourable for breeding, except in a few places where localised rain showers had fallen. Seasonal rains were reported in parts of the region south of the ITCZ at Abeche (56mm) in Chad, Tahoua (39mm) and Maine-Soroa (63mm) in Niger, Niore du Sahel (16mm) in Mali, and Tamchekett (30mm) and Boundeid (26mm) in Mauritania. Consequently, breeding conditions are expected to be improving in the two Hodhs and northern Assaba of Mauritania and in the southern Tamesna of Niger. The prevailing winds in this part of the region were westerly. The average temperature ranged from 20-25 C in the night to 40-45 C during the day.

In **North-West Africa**, the prevailing winds were easterly over Libya, veering to south-easterly over the eastern part of Algeria. The winds were generally north-westerly over Morocco, becoming westerly over the western part of Algeria. No significant rains were reported from the region, except from Tamanrasset in Algeria (22 mm) in the first dekad of June. As a result of the continuing lack of rain, the vegetation is expected to be dry. Temperature in the south of Algeria ranged from 17-27 C at night to 40-45 C during the day.

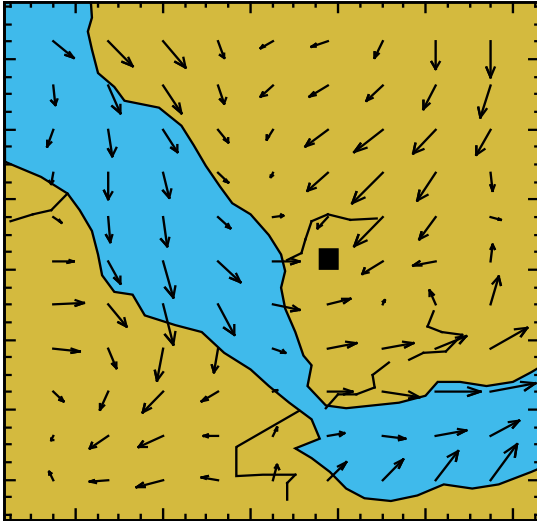
In **East Africa**, the winds were northerly over the interior of Egypt, veering to north-easterly over the northern part of Kordofan and easterly over Darfur of Sudan. The Red Sea coast of Egypt and Sudan had variable winds, while the Eritrean coast had generally onshore winds. Cold cloud satellite imagery suggests that seasonal rains may have started south of En Nahud and El Obeid, Sudan. Light and localised rain was reported in the west at Nyala (16mm) and in the eastern province near Kassala. Ecological conditions are favourable for breeding in Northern Kordofan and north of Kassala but dry in the Northern region near Shendi. Temperatures ranged from 40-45 C during the day to 17-25 C at night. The winds over northern Somalia were increasingly influenced by the south-westerly monsoon that extends to South-West Asia. Conditions were dry in the northern coast of Somalia and green in interior areas. Temperatures were between 25-40 C.

In the **Near East**, the prevailing winds over coastal areas along the Gulf of Aden and Arabian Sea were south-westerly due to the monsoon flow towards South-West Asia, which increased in strength during June. Light localised rains fell in the Shabwah area in Yemen and at Sur and Salalah in Oman. Vegetation conditions are expected to be generally dry. Temperatures in the Arabian coastal zone were 20-30 C at night and 30-45 C during the day. In Saudi Arabia, the Red Sea coastal zone had mainly north-westerly onshore winds while the winds over the interior were variable. Light to moderate rainfall was reported in the first dekad in the



Cold-cloud image for June 1997 indicating that localised showers may have fallen in some places of the Desert Locust breeding areas in the Sahel of West Africa and Sudan and in south-west Arabia. Seasonal rains are moving north but still remain south of the locust areas.

light heavy



Estimated medium-level (850 hPa) winds on 21 June at 1200 GMT indicating a convergence of north-westerly and north-easterly winds over northern Yemen. On this day a swarm (■) was reported in northern Yemen coming from the north.

southern Hejaz Mountains south of Mecca and on the eastern side at Najran. Moderate rains fell in Jizan (47mm) on 18 June. The interior of Saudi Arabia remained dry. Breeding conditions are expected to be favourable on the coastal Tihama plains near Jizan and may be improving in the interior of Yemen near Shabwah. Temperatures in these areas varied from 20-25 C at night to 30-38 C during the day.

In South-West Asia, the prevailing winds over Baluchistan of eastern Iran and western Pakistan were from the south-west due to the monsoon flow from eastern Africa, becoming south-south-west over Rajasthan, India. Temperatures in Baluchistan ranged from 20-25 C at night to 33-40 C during the day. Conditions in these spring breeding areas are drying out due to lack of recent rainfall. Moderate to heavy rains were produced from depressions and troughs in the upper air in several places in the summer breeding areas along the Indo-Pakistan border. In Pakistan, rains fell throughout the month in Tharparkar Desert (Chore, 59mm) and Cholistan (Bahawalpur, 134mm). In India, rains fell during the first half of the month in Rajasthan (Jaisalmer (50mm), Bikaner (90mm), Jodhpur (52mm) and Jaipur (31mm)) and in Gujarat at Bhuj (34mm). The ecological conditions in these areas are very favourable for breeding. Temperatures were from 24-27 C at night to 35-45 during the day. By the end of the month the monsoon was south of Gujarat.



Area Treated

Algeria	163 ha	(June)
Saudi Arabia	28,158 ha	(1-9 June)



Desert Locust Situation and Forecast

WEST AFRICA

Mauritania

• SITUATION

No locusts were seen during surveys carried out in the centre of the country near Tidjikja and in the south-east near Nema during June.

• FORECAST

Locust numbers are expected to increase slightly in the south as adults appear from the north and perhaps from the east. Small scale laying is likely to occur in parts of the two Hodhs with the onset of the seasonal rains.

Mali

• FORECAST

Low numbers of solitary adults may be present in some parts of the Adrar des Iforas and Timetrine. Numbers may increase slightly if adults appear from the east. Breeding on a small scale is expected to commence with the onset of the seasonal rains.

Niger

• FORECAST

Low numbers of solitary adults may be present in some parts of the Tamesna. Numbers may increase slightly if adults appear from the east. Breeding on a small scale is expected to commence with the onset of the seasonal rains.

Chad

• FORECAST

Low numbers of solitary adults may appear in some parts of BET and lay on a small scale with the onset of the seasonal rains.

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

• FORECAST

No significant developments are likely.



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NORTH-WEST AFRICA

Algeria

• SITUATION

Small groups of fourth and fifth instar hoppers and adults mixed with *Locusta* at densities up to 2,000 per ha were seen in a few places in the Adrar region during the last dekad of May. The adults were reported to be immature and transiens. Localised control operations were undertaken in the irrigated perimeters, treating 163 ha

• FORECAST

Locust numbers will decline in Adrar as adults move towards the south where they may appear throughout the forecast period.

Morocco

• SITUATION

No locusts were seen in June.

• FORECAST

No significant developments are likely.

Tunisia

• SITUATION

No locusts were seen in May.

• FORECAST

No significant developments are likely.

Libya

• FORECAST

No significant developments are likely.

EASTERN AFRICA

Sudan

• SITUATION

Low to moderate densities of solitary adults progressively appeared in the summer breeding areas of the interior from east to west throughout June. Isolated mature adults at densities of 5-7 adults per ha were first reported in the Eastern province along the western side of the Red Sea Hills near Derudeb (1731N/3607E) and west of Sinkat (1855N/3648E) on 1-3 June. This was followed by reports from the Northern province of immature and mature solitary adults at densities of 6-25 adults per ha at several locations east of Shendi (1641N/3322E) and west of the Nile in the Baiyuda Desert on the 11-14th. To the south-west, higher densities of adults were present in Northern Kordofan province near Umm Saiyala

(1425N/3111E) on the 14th where remains of a maturing swarm were seen within an area of 1,000 ha. On the 16th, high density groups of maturing adults were present nearby on trees within an area of 400 ha.

• FORECAST

Locust numbers will continue to increase in the summer breeding areas of Northern Kordofan and Northern Darfur where they are expected to concentrate in areas of recent rainfall. Those adults present in the Northern region are likely to move into Northern Kordofan while those in the Eastern region may persist and lay. Consequently, low numbers of hoppers are expected to appear by the end of the forecast period.

Eritrea

• FORECAST

Locust numbers are expected to increase slightly in the western lowlands where breeding may occur on a small scale in areas that have recently received rainfall. Consequently hoppers could appear during the forecast period.

Somalia

• SITUATION

Scattered immature adults were seen during surveys on the central northern coast at four locations near Berbera (1028N/4502E) on 5-9 June.

• Forecast

Low numbers of solitary adults are expected to persist and eventually breed primarily in inland areas of the central northern coast.

Djibouti, Ethiopia, Kenya, Tanzania and Uganda

• FORECAST

No significant developments are likely.

NEAR EAST

Saudi Arabia

• SITUATION

In late May, less than 100 ha of solitary adults were treated in the interior near Hail (2732N/4142E) and Qassim (2618N/4346E). There was no indication that large scale migration occurred from the Red Sea coast east to the interior and beyond. Control operations finished by the end of May on the northern Red Sea coastal plains between Jeddah and Yenbo, and continued until 9 June in Umm Lajj, Al-Wejh and Duba areas, treating 28,158 ha. During June, small groups of transiens adults at densities of 2-5 adults per sq. metre were present and maturing in the Jizan area (1648N/4230E). Limited control operations were in progress. During the second half of the month, there was an unconfirmed report of a swarm in the Najran (1729N/4408E) area. A total of 339,360 ha were treated during the campaign which started in mid-February.

• **FORECAST**

Low numbers of locust adults and a some small groups are expected to persist and mature in a few places along the southern plains of the Red Sea coast near Jizan. These are likely to lay during July in areas of recent rainfall.

Yemen

• **SITUATION**

A few isolated locusts were seen in Sana'a (1523N/4414E) in late May and increasing numbers of immature transiens adults were seen until the last week of June.

On 21 June, a medium-sized maturing swarm was seen coming from the north-east of Al-Safra (1658N/4350E) in the extreme north of the country. On the following day, the same swarm was reported further south at Sahar (1650N/4343E). Control operations were not possible and it is thought that the swarm may have dispersed and perhaps moved further east. No locusts were seen during surveys on the Aden and Red Sea coasts at mid month. By the end of June, there were reports of low density mature solitary adults scattered over a large area of the interior in the Shabwah region between Maifa'ah (1418N/4733E) and Wadi Jannah (1510N/4555E). Groups of transiens adults at densities of 5 per sq. metre were seen copulating and laying in W. Jannah on 100 ha. Laying was also reported at lower densities in several other wadis nearby.

• **FORECAST**

Locust numbers will increase in the interior between Ataq and Marib as a result of breeding during the forecast period. Small scale hatching is expected to start from mid July onwards. Some adults and perhaps a few small groups may appear from the north on the Red Sea coastal plains where small scale laying could occur in areas that receive rainfall.

Egypt

• **SITUATION**

In early June, isolated solitary mature adults were present in a few places along the southern coastal plains of the Red Sea near Halaib (2213N/3638E), Shalatein (2308N/3536E) and Berenice (2358N/3527E). Similar populations were seen in subcoastal areas of Wadi Diib (2205N/3555E) and at a few places between the coast and the Nile Valley. Small scale breeding occurred in Wadi Diib as indicated by one report of third and fourth instar hoppers on the 10th.

• **FORECAST**

Locust numbers will decline on the Red Sea coastal plains and adjacent interior areas due to drying conditions.

Oman

• **SITUATION**

Low numbers of third to fifth instar hoppers and mature solitary adults were seen at a few locations on the Batinah coastal plains near Jummah (2334N/5734E) on 8 June. Isolated fledglings and immature adults were present in the interior of Sharqiya at several locations near Al-Wasil (2230N/5845E) on the 10-14th. The infestations in both areas are thought to be a result of previous solitarious breeding that occurred after rainfall in April. No locusts were seen between Sur and Ras Al-Had.

• **FORECAST**

Locust numbers are expected to decline as conditions become unfavourable and no significant developments are anticipated.

Kuwait

• **SITUATION**

No locusts were present during May.

• **FORECAST**

No significant developments are likely.

Bahrain, Iraq, Israel, Jordan, Qatar, Syria, Turkey and UAE

• **FORECAST**

No significant developments are likely.

SOUTH-WEST ASIA

Pakistan

• **SITUATION**

During the second fortnight of May, small scale breeding was in progress in the interior of Baluchistan in Kharan (2832N/6526E) district where low numbers of hoppers of all instars were present at three locations. Mature adults at densities up to 20 per site were reported from 30 locations along the coast near Pasni (2513N/6330E) and Lasbela (2612N/6620E) and in the interior of Turbat, Panjgur, Kharan and Khuzdar districts. The majority of the infestations were in Kharan district.

During the first half of June, locust numbers declined throughout Baluchistan. Scattered mature adults were reported only in Kharan district where they were present at 7 locations at densities of 2-24 per site. Low densities of solitary second to fifth instar hoppers were also present at four locations in the Kharan Valley.



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Migratory Locust in Madagascar

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During the second half of June, third and fourth instar hoppers and solitary adult infestations persisted in the Kharan Valley at 5 locations.

• **FORECAST**

Locust numbers will continue to decline in Baluchistan as conditions become dry and adults move east towards the Indo-Pakistan summer breeding areas. Low numbers of adults may already be present in the summer areas from Tharparkar to Cholistan or will appear early in the forecast period. Small scale breeding may occur somewhat earlier this year in areas of recent rainfall in Cholistan and Tharparkar.

India

• **SITUATION**

During the last fortnight of May, isolated adults were reported at Jatari (2711N/7157E) in Jodhpur district, Rajasthan on the 31st.

During the first fortnight of June, isolated adults were seen at Sewra (2732N/7218E) in Bikaner district on the 6th.

• **FORECAST**

Locust numbers will continue to increase in Rajasthan and small scale breeding is likely to commence in areas of recent rainfall in Jaisalmer, Jodhpur and Bikaner districts.

Iran

• **SITUATION**

No locusts were seen during surveys carried out in late May in southern areas of Bushehr and Hormozgan regions.

• **FORECAST**

No significant developments are likely.

Afghanistan

• **FORECAST**

No significant developments are likely.

As a result of at least three successful breeding cycles from October 1996 to April 1997 which coincided with the rainy season, hopper bands and swarms of *Locusta*, sometimes mixed with Red Locust, are currently present in the south-west within an estimated area of 2 million hectares. As the rains have ended, swarms that vary in size from 1,500 to 10,000 ha have started moving towards the north. These are likely to pose a major threat to rice crop production in the north-west of the country. The Malagasy authorities supported by international assistance and under FAO coordination are carrying out intensive ground and aerial control operations which have treated 210,000 ha to date.

As breeding during the next rainy season is expected to occur on an even larger scale than this year and the available resources to meet this threat are insufficient, further international assistance is being sought.



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 per 400 m foot transect (or less than 25 per ha).

SCATTERED (SOME, LOW NUMBERS)

- 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).

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 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.

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.



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Desert Locust summary Criquet pèlerin situation résumée

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