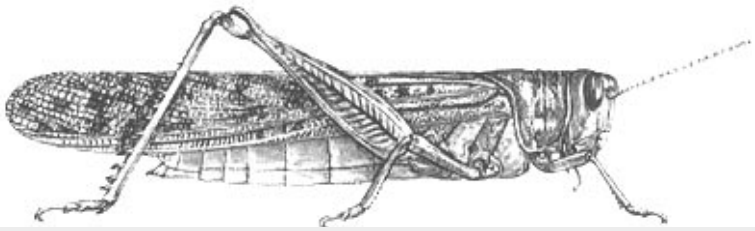

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations

No. 224
(6 May 1997)

General Situation during April 1997
Forecast until mid-June 1997

Numerous Desert Locust hopper bands were present on the Red Sea coastal plains of Saudi Arabia during April where large scale control operations were in progress. By the end of the month, new adults appeared but there were no reports of swarms. However, small swarms are expected to form during May and move towards the interior of Saudi Arabia and Yemen. There is a lower risk of movement across the Red Sea to Sudan and Egypt. In South-West Asia, low numbers of solitary adults are widely dispersed throughout western Pakistan. No significant infestations were reported from North-West Africa or West Africa.

Central Region

In **Saudi Arabia**, large scale control operations continued against numerous small hopper bands on the Red Sea coastal plains near Jeddah. More than 40 ground teams and two aircraft were mobilised and treated 81,000 ha during April which was three times the area treated in the previous month. Some infestations will undoubtedly have escaped detection which could lead to the formation of small swarms. As vegetation is drying up on the coastal plains, adults and any swarms that form are expected to move towards the interior where rains have fallen recently. Some swarms may also move into adjacent areas of the interior of **Yemen**. Further maturation will occur and laying could start in these interior areas by the end of May with hoppers appearing from June onwards. There is also a risk, albeit lower, of movement further east towards **Oman** or west across the Red Sea to **Egypt** and **Sudan**. To date, there have been no reports of locusts from other countries in the Region.

Eastern Region

Scattered maturing adults are widely distributed throughout coastal and interior areas of Baluchistan in western **Pakistan** where small scale breeding is expected. By the end of the forecast period, locust numbers will decline as adults move towards the summer breeding areas along the Indo-Pakistan border.

Western Region

Very little rainfall was reported from North-West Africa where breeding conditions continue to remain unfavourable in most of the spring breeding areas south of the Atlas Mountains. Only isolated solitary adults were reported in a few places in **Morocco** and northern **Mauritania**. This suggests that very few locust adults will be produced during the spring and be able to move to the summer breeding areas of the Sahel in West Africa.

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No. 224

DESERT LOCUST BULLETIN

Weather & Ecological Conditions during April 1997

Favourable breeding conditions declined along both sides of the Red Sea as a result of drying vegetation. Significant rains fell over the interior of Saudi Arabia, extending to the northern coast of Oman and eastern Iran and western Pakistan. Consequently, conditions are favourable for breeding in some of these areas. Dry conditions prevailed in most parts of North-West and West Africa.

In **West Africa**, the prevailing winds during April were generally from the north to east over Chad, Niger and Mali and primarily from the north to west over coastal and interior areas of Mauritania. The Inter Tropical Convergence Zone (ITCZ) was located near 10N over the Atlantic coast of Senegal and Guinea and between 10-15N over Mali, Niger and Chad. On 10 April, the ITCZ moved northwards over the Mali-Niger border to 17N and on the 28th to 20N over the eastern part of Niger and western part of Chad. No significant rainfall was reported in the region except in the extreme south. Consequently, vegetation and soil continue to be dry. Temperatures during the night were in the twenties, reaching 40 degrees C during the day.

In **North West Africa**, prevailing winds over Libya were from the north, veering north-east over the southern part of the country. Winds were variable in other parts of the region due to a number of passing depressions. One of these depressions started on the 5th on the coast of Morocco and moved slowly eastward over central Algeria on the 7th and 8th, and weakening on the 12th over southern Libya. Another depression started on the 19th on the coast of Morocco and moved over the northern part of Algeria on the 20th until it reached the Tunisian coast on the 21st. Both depressions produced significant amounts of rain (Morocco: Sidi Ifni (45mm), Essaouira (42mm); Algeria: Ghardaia (27mm), Bechar (38mm); Tunisia: Sidi Bouzid (55mm), Gafsa (44mm)). Consequently, breeding conditions and vegetation are expected to be improving in these areas. Temperatures in the central Sahara of Algeria near In Salah varied from 17-23 degrees C at night to 24-30 degrees C during the day.

In **East Africa**, winds over the interior of southern Egypt and Sudan were mainly from the north but turned towards the west or south during periods of passing troughs in the upper air on 7, 13 and 24 April. A convergence zone persisted near 13N/37W over the interior of Ethiopia which merged with the Red Sea Convergence Zone further north over the coast of Eritrea and Sudan, generally between 15-20N. In the latter area, northerly winds along the southern Egyptian and Sudanese coast met with the southerly winds from the southern Red Sea. Temperatures near Port Sudan were 10-18 degrees C at night and 25-33 degrees C during the day. Ecological conditions were dry on the Red Sea coastal plains from Eritrea to Egypt as well as in the interior of Sudan. Conditions have improved in north-western Somalia as a result of rainfall in the last two dekads of April. The winds in this area were from the north-east and temperatures ranged between 15-30 degrees C.

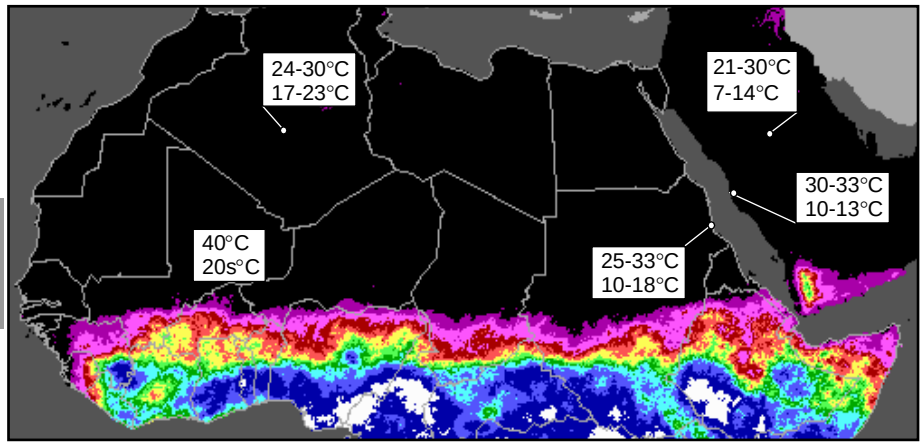
In the **Near East**, the weather in the last dekad of April was influenced by a trough in the upper air over the Strait of Hormuz between Oman and Iran. This trough first moved westwards and then formed a depression on the 23rd over Qatar which moved slowly east towards Iran. Clouds associated with the trough and depression produced moderate rains in central Saudi Arabia (Riyadh: 32mm) and the northern coast of Oman (Seeb: 35mm). No rainfall was reported along the Red Sea coastal plains where vegetation continued to dry out in most areas. Conditions were improving in

Cold-Cloud imagery
MeteoSat, April 1997

light — heavy

seasonal rainfall remains well south of Desert Locust breeding areas in Africa

daytime °C
nighttime °C



the interior of Saudi Arabia near Tabuk, Hail, Gassim and Najran, and are expected to be favourable along the northern coast of Oman. The prevailing winds over the southern Arabian coast were generally easterly, veering to south over the interior where they met the more westerly winds coming from the Red Sea. During the last dekad, the winds were influenced by the depression over the Persian Gulf which caused a counter-clockwise wind flow over the Peninsula. Daytime temperatures in the interior of Saudi Arabia near Hail were 21-30 degrees C and 7-14 degrees C at night. Temperatures were higher on the Red Sea coast near Jeddah: 30-33 degrees C during the day and 10-13 degrees C at night.

In **South-West Asia**, prevailing winds were from south to north-west over the Baluchistan region of eastern Iran and western Pakistan. Temperatures on the coast of Pakistan near Pasni varied from 11-17 degrees C at night to 25-31 degrees C during the day. In the interior of Baluchistan, temperatures were from 7-18 degrees C at night to 22-31 degrees C during the day near Panjgur. During the first half of the month, moderate rainfall was reported on the south-eastern coast of Iran near Chabahar, in Pakistan (Karachi: 20mm) and in India (Jaipur: 24mm). Rains fell later in the month in parts of Baluchistan (Panjgur: 65mm) due to the eastward moving depression from the Persian Gulf. As a result, conditions are favourable for breeding throughout coastal and interior areas of Baluchistan in both countries.

Area Treated

Saudi Arabia	81,708 ha	(1-29 April)

Desert Locust Situation and Forecast

WEST AFRICA

Mauritania

• **SITUATION**

Isolated solitary adults continued to slowly mature at a few places between Akjoujt (1944N/1420W) and Zouerate (2244N/1221W) during the last dekad of March and throughout April. Most of the adults were present in the Guelb Er Richat area north-east of Atar (2032N/1308W). By the end of April, a few adults were seen south of Atar.

• **FORECAST**

Low numbers of adults will continue to mature in parts of Adrar, Inchiri and Tiris-Zemmour. During the forecast period, these will move towards the summer breeding areas of the central and south where breeding may start if early rains fall. Adult movement and laying is expected to be on an insignificant scale in the south.

Mali

• **FORECAST**

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

Niger

• **FORECAST**

Low numbers of solitary adults may be present and could persist in some parts of Tamesna.

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

• **FORECAST**

No significant developments are likely.

NORTH-WEST AFRICA

Algeria

• **SITUATION**

Isolated solitary adults were present south-west of Bechar (3135N/0217W) at 2935N/0408W during the second half of March.

• **FORECAST**

Low numbers of solitary adults are expected to persist in a few places of the central Sahara. These will slowly move south towards the Sahel by the end of the forecast period.

Morocco

• **SITUATION**

A few solitary mature adults were present south of the Atlas Mountains at two locations near Goulmima (3102N/0500W) during April.

• **FORECAST**

Low numbers of solitary adults are expected to persist and may breed in a few places along the southern side of the Atlas Mountains and in Oued Draa. By the end of the forecast period, numbers will decline as adults move south towards the Sahel.

Libya and Tunisia

• **FORECAST**

No significant developments are likely.

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EASTERN AFRICA

Sudan

• **SITUATION**

Solitary adults persisted on the Red Sea coastal plains north of Port Sudan in the Eight area (2009N/3711E) in early April. Adults were reported within an estimated area of 1,340 ha at a density of 1,000 per ha. Some of these were seen copulating. Ground surveys on the coastal plains between Tokar Delta and the Eritrean border have been suspended since late March.

• **FORECAST**

Locust numbers will decline as conditions continue to dry up on the Red Sea coastal plains. By the end of the forecast period, any remaining adults are expected to move towards the summer breeding areas of the interior where they may be supplemented by adults and a few small swarms coming from eastern side of the Red Sea.

Eritrea

• **SITUATION**

No locusts were seen during surveys on the Red Sea coastal plains from Alghena (1724N/3824E) to the Sudanese border in early April.

• **FORECAST**

Isolated adults may be present in a few places along the Red Sea coastal plains between Massawa and Karora. Locust numbers will decline during the forecast period as a result of drying conditions.

Somalia

• **SITUATION**

Isolated immature adults were seen on the north-western coast at two locations between Berbera (1028N/4502E) and Zeila (1121N/4330E) on 22-24 April. No other locusts were seen during surveys carried out in the last ten days of the month in coastal and subcoastal areas.

• **FORECAST**

Low numbers of adults will persist along some parts of the north-west coastal plains and adjacent areas of the interior. They are expected to mature and lay eggs during the forecast period.

Djibouti, Ethiopia, Kenya, Tanzania and Uganda

• **FORECAST**

No significant developments are likely.

NEAR EAST

Saudi Arabia

• **SITUATION**

Large scale aerial and ground control operations continued against hopper bands on the Red Sea coast during April. The operations were undertaken against numerous hopper bands of medium density and ranging in size from about 200-800 sq. meters up to 2 ha. By mid month, most of the bands were fourth and fifth instar. The largest infestations were concentrated on the coastal plains north of Jeddah in the Khulais (2217N/3920E) and Rabigh (2242N/3910E) areas. Smaller infestations were present further north to the Umm Lajj area (2515N/3720E) as well as near Jeddah and to the south near Al-Lith (2017N/4020E). On 18 April, isolated solitary adults were seen in the interior at Hail (2732N/4142E) which may an indication of movement from the coastal plains where vegetation is drying. By the end of the month, more than 40 ground teams and two aircraft were deployed and fledging had started but to date no swarms have been reported. Control operations treated a total of 81,708 ha on 1-29 April.

• **FORECAST**

Small scale swarm formation is expected to occur early in the forecast period from hopper infestations that were not detected or could not be controlled. Adults and swarms are most likely to move towards the central interior (Hail and Gassim) and the south-west (Wadi Najran and Dawasir). There is a lower probability of movement towards the north (Tabuk) or west across the Red Sea. Adults and swarms may disperse upon arrival in the interior to mature and breed in areas of recent rainfall.

Yemen

• **FORECAST**

Low to moderate numbers of adults and perhaps a few small groups or swarms may appear from the north in Ramlat Sabatayn and adjacent areas between Al-Jawf and Shabwah throughout the forecast period. Some of these may lay in areas of recent rainfall with hoppers appearing from June onwards.

Egypt

• **FORECAST**

Low numbers of solitary adults may be present in the few remaining green areas on the southern coastal plains of the Red Sea. Further breeding is not expected.

Kuwait

• **SITUATION**

No locusts were reported during March and April.

• **FORECAST**

No significant developments are likely.

Oman

• **Forecast**

Low numbers of adults may be present and breeding in some areas of the Batinah coast and in Sharkiya. These may be augmented during the forecast period by low to moderate numbers of adults and perhaps a few small groups arriving from the west.

UAE

• **Forecast**

Low numbers of adults may be present and breeding in some areas of Fujayrah. These may be augmented during the forecast period by low to moderate numbers of adults and perhaps a few small groups arriving from the west.

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

• **Forecast**

No significant developments are likely.

SOUTH-WEST ASIA

Pakistan

• **Situation**

Scattered adults persisted throughout coastal and interior areas of Pasni, Gwadar, Turbat and Panjgur districts of Baluchistan and in Lasbela district west of Karachi during the last half of March and throughout April. The number of locations increased slightly from 22 in March to 26-27 during April. Infestations consisted of low numbers of solitary maturing adults at densities of 1-8 adults per location and were confined primarily to valleys and coastal plains. Densities were generally higher near the coast. Adults were also reported from Khuzdar district during the first half of April.

• **Forecast**

Breeding is likely to be in progress on a small scale in coastal and interior areas of Baluchistan with new adults during the forecast period. Numbers will decline as adults move east towards the summer breeding areas along the Indo-Pakistan border where they may start appearing late in the forecast period.

India

• **Situation**

No locusts were seen during surveys carried out during the second half of March and first half of April in Rajasthan.

• **Forecast**

Low numbers of solitary adults may start to appear late in the forecast period in a few places of Rajasthan as a result of small scale movement from the west.

Iran

• **Situation**

No locusts were seen during surveys carried out in April in coastal and interior areas of Baluchistan near Chabahar and Iranshahr.

• **Forecast**

No significant developments are likely.

Afghanistan

• **Forecast**

No significant developments are likely.

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DESERT LOCUST BULLETIN

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 km^2
- band: 1 - 25 m^2

SMALL
- swarm: 1 - 10 km^2
- band: 25 - 2,500 m^2

MEDIUM
- swarm: 10 - 100 km^2
- band: 2,500 m^2 - 10 ha

LARGE
- swarm: 100 - 500 km^2
- band: 10 - 50 ha

VERY LARGE
- swarm: 500+ km^2
- 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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