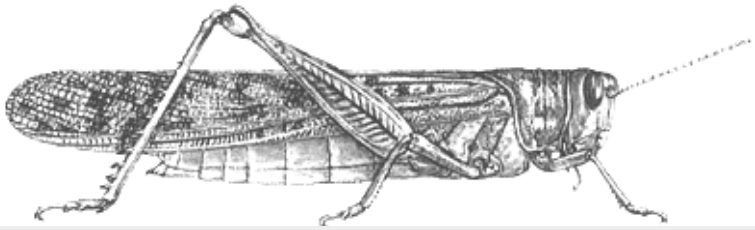

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations

No. 230
(6 Nov 1997)

General Situation during October 1997
Forecast until mid-December 1997

Most of the Desert Locust activity during October continued to be concentrated in South-West Asia. By the end of the month control operations had finished along the Indo-Pakistan border against hopper bands and new swarms. Unusually heavy rains fell during October along the Red Sea coastal plains and around the Iran/ Pakistan border. Locusts moving out of the summer breeding areas of Sudan and along the Indo-Pakistan border could, respectively, take advantage of these favourable conditions for several generations of breeding and rapidly increase in number. Although large scale control operations are not anticipated, the countries concerned have been alerted to survey these areas very carefully. No significant Desert Locust infestations were reported in West Africa.

Eastern Region. New swarms started forming along the Indo-Pakistan border in early October and were reportedly moving back and forth across the border. Late instar hopper bands continued to mature in both countries. Aerial and ground control operations in **Pakistan** treated about 7,000 ha and **India** treated about 5,500 ha during the month. By the end of the month, control operations had come to an end in both countries as infestations had declined and vegetation was drying out. Adults and a few small swarms that escape control will move west towards western Pakistan and eastern **Iran** where early breeding could occur as a result of recent and unusually heavy rainfall. Surveys are required in these areas to detect any incoming adults and laying.

Central Region. Control operations finished in the summer breeding areas of central and eastern **Sudan**. Unusually heavy and widespread rains fell during the second half of the month over the Red Sea and the Gulf of Aden. Two small swarms were seen laying on the coast of Sudan and other swarms or scattered adults are likely to appear and lay on the coastal plains along both sides of the Red Sea. This situation is similar to that in 1996 but the rains have fallen one month earlier this year which may allow several generations of breeding and a significant increase in locust numbers in the coming months. Surveys are recommended on the coastal plains of all countries in the Region. Surveys are also suggested in northern **Oman** to detect any adults or groups that may appear in coastal areas from South-West Asia.

Western Region. Only isolated solitarious adults were present in **Mauritania**, **Mali** and **Algeria**. No significant developments are expected during the forecast period.

The FAO Desert Bulletin is issued monthly, supplemented by Updates during periods of increased Desert Locust activity, and is distributed by fax, e-mail, FAO pouch and airmail by the Locusts, Other Migratory Pests and Emergency Operations Group, AGP Division, FAO, 00100 Rome, Italy.
It is also available on the Internet.
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Internet: http://www.fao.org/NEWS/GLOBAL/locusts/locuhome.HTM

No. 230

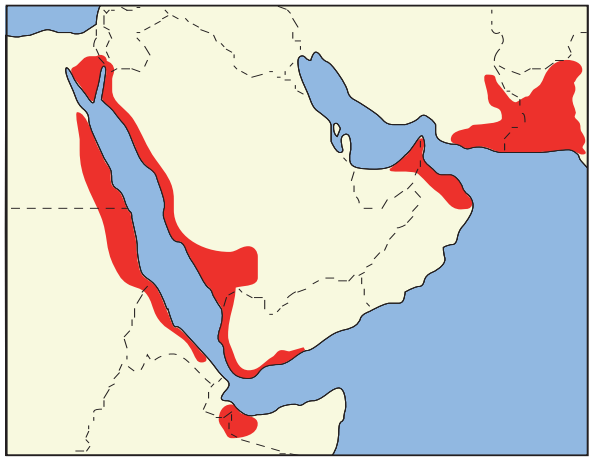
DESERT LOCUST BULLETIN

Weather & Ecological Conditions during Oct 1997

Unusually heavy rainfall occurred along the Red Sea coastal plains and in Baluchistan of Pakistan and Iran. The summer rains have come to an end in the Sahel of West Africa and along the Indo-Pakistan border.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) progressively moved southwards over the Sahel during the month, from 18N to 12N. Consequently, mainly dry weather prevailed over the region except for some isolated showers in parts of central and northern Mauritania. Breeding conditions continued to be favourable in southern Mauritania and by the end of the month were improving in the centre and north. Some rains fell along the southern side of the Atlas Mountains from Morocco to Tunisia, extending into central and eastern Algeria, and north-western Libya. Most of these showers were associated with eastward-moving depressions over north Africa and the Mediterranean. Although vegetation conditions are likely to improve, low temperatures will limit breeding.

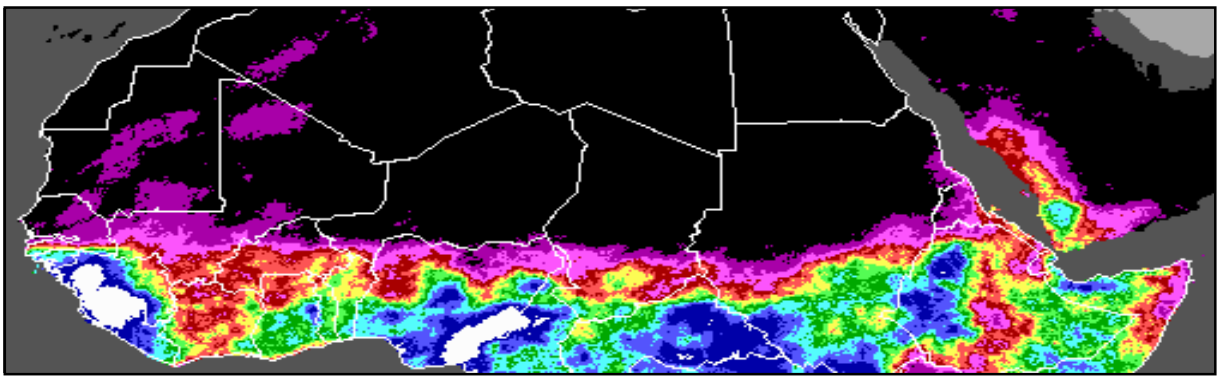
In the **Central Region**, unusually heavy rains fell over a large portion of the coastal plains bordering both sides of the Red Sea, the Gulf of Aden and the Gulf of Oman throughout the second half of the month. Along the Red Sea coastal plains, rains were



Areas where heavy rainfall was reported or may have occurred during October. Most of the rains fell on the sandy coastal plains where conditions are expected to be favourable for breeding.

reported from Eritrea to the Sinai Peninsular of Egypt and in Saudi Arabia and Yemen. In Sudan, a total of 226 mm fell at Port Sudan; in Saudi Arabia, 145 mm fell at Jizan, 90 mm at Yenbu, 81 mm at Jizan, 38 mm at Mecca, 22 mm at Jeddah, and rainfall extended into the interior at Wadis Najran and Dawasir. Heavy rains fell in the Halaib area in south-eastern Egypt. Light to moderate rains were reported on the Tihama of Yemen which extended to the Gulf of Aden coastal plains in southern Yemen (Aden 28 mm) and into northern Somalia. In northern Oman, heavy rains fell along the Batinah coast (Sohar 127 mm) and at Sur (49 mm). Light rains were reported in the Emirates. Consequently, conditions will become favourable for breeding in all of these areas and remain so throughout the forecast period.

In the **Eastern Region**, south-westerly winds from the Horn of Africa and rainfall associated with the monsoon came to an end during the first week of October over the desert areas along the Indo-Pakistan border. Nevertheless, a few showers were reported in some areas at mid month. Unusually heavy rains fell



Cold-cloud image for October 1997 indicating significant activity over south-western Arabia and the coastal plains along the Red Sea and Gulf of Aden. There continued to be a decrease in activity over the Sahel of West Africa and Sudan compared to last month.

low high

in coastal and interior areas of Baluchistan during the second half of the month; Turbat received 112 mm, Khuzdar 86 mm, Nushki 55 mm, Panjgur 52 mm and Pasni 25 mm. Light rains were also reported in adjacent areas of eastern Iran. Consequently, breeding conditions will improve in these areas.

Area Treated

India	10,034 ha	(16-30 September)
	5,504 ha	(1-31 October)
Pakistan	7,000 ha	(October, estimated)

Desert Locust Situation and Forecast

WEST AFRICA

Mauritania

• **SITUATION**

Isolated maturing and mature solitarious adults were seen between Akjoujt (1944N/1420W) and Atar (2032N/1308W) indicating that adults may be moving out of the summer breeding areas. Similar populations continued to persist during October at a few places near Kiffa (1638N/1128W) and R'Kiz (1655N/1516W).

• **FORECAST**

Low numbers of solitarious adults will continue to appear in the north as numbers decrease in the south. Limited breeding may occur if rains fall.

Mali

• **SITUATION**

Solitarious immature and mature adults were present during the second half of October at 15 locations throughout the Adrar des Iforas and western Tamesna. Adult densities were generally less than 500 per ha except for one infestation of 5,000 per ha. A few of the infestations were at densities up to 40 adults per sq. m. and some transiens adults were reported. Most were concentrated in the few wadis that remained green. An isolated hopper was seen at Tidjalaline (1749N/0216E) indicating that breeding had occurred in the area.

• **FORECAST**

Solitarious adults will persist in some parts of the Adrar des Iforas. Although numbers are expected to remain low, adults may become concentrated in the few areas that remain green.

Niger

• **FORECAST**

Low numbers of solitarious adults may be present and persist in a few places in Tamesna and western Air.

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

• **FORECAST**

No significant developments are likely.

NORTH-WEST AFRICA

Algeria

• **SITUATION**

Isolated adults were seen during October in the extreme south near the Niger border at 1928N/0523E.

• **FORECAST**

Scattered adults are likely to be present in a few places in the central and southern Sahara. These may breed in areas of recent rainfall or run-off.

Morocco

• **SITUATION**

No locusts were seen in October.

• **FORECAST**

Isolated solitary adults may appear in the extreme south-west during periods of warm southerly winds.

Tunisia

• **SITUATION**

No locusts were seen in September.

• **FORECAST**

No significant developments are likely.

Libya

• **FORECAST**

No significant developments are likely.

EASTERN AFRICA

Sudan

• **SITUATION**

A high density swarm was seen copulating and laying eggs on 26 October on the Red Sea coastal plains at Khor Sitareb (1838N/3728E) in an area of about 100 ha. On the following day another swarm was seen copulating at Hoshiri (1924N/3717E) within about 800 ha. Surveys are in progress elsewhere along the plains. No locusts were seen during surveys

in the summer breeding areas west of the Red Sea Hills near Kassala.

• **Forecast**

Locust numbers will increase on the Red Sea coastal plains and subcoastal areas (W. Diib and K. Baraka) as a result of breeding throughout the forecast period. Hatching will commence by mid November and hoppers are expected to form bands which could lead to swarm formation from mid December onwards. There is a risk that locust numbers will significantly increase since breeding this year is expected to occur earlier than in previous years, allowing for several generations if rains continue in the coming months. Regular surveys should be carried out in the above areas.

Eritrea

• **Situation**

Isolated solitarious mature adults were present in farms and natural vegetation on the Red Sea coastal plains near Shebah (1542N/3903E) and Shelshela (1553N/3906E) during the first dekad of October. Hatching was reported in the Shelshela area about mid-month. A few adults were also seen at the foot of the escarpment. Some infestations were mixed with African Migratory Locusts.

• **Forecast**

Small to moderate scale breeding will occur on the Red Sea coastal plains which may lead to the formation of hopper groups and small bands in several areas. New adults could start to appear by December. There is a risk that locust numbers will significantly increase since breeding this year is expected to occur earlier than in previous years, allowing for several generations if rains continue in the coming months. Regular surveys should be undertaken on the coastal plains in areas of natural vegetation.

Ethiopia

• **Situation**

No locusts were seen during surveys in the south-east near Jijiga and Degahbur on 1-8 October and again on the 24-31st.

• **Forecast**

No significant developments are likely.

Somalia

• **Situation**

Isolated mature adults were seen during surveys in the north-west near Boon (1012N/4305E) on 11 October. No Desert Locusts were found during surveys carried out near the Ethiopian border although low numbers of mature African Migratory Locusts were present at several places.

• **Forecast**

Small scale breeding is expected to occur in areas of recent rainfall in the north-west.

Djibouti, Kenya, Tanzania and Uganda

• **Forecast**

No significant developments are likely.

NEAR EAST

Saudi Arabia

• **Situation**

No locusts were reported during October.

• **Forecast**

Low to moderate numbers of adults are likely to be present on the coastal plains of the Red Sea from Jizan to Wejh where they are expected to lay in areas of recent rainfall. Consequently there is a risk that locust numbers will significantly increase since breeding this year is likely to occur earlier than in previous years, allowing for several generations if rains continue in the coming months. Regular surveys should be carried out in the above areas.

Yemen

• **Situation**

A few isolated immature adults were seen on the coastal plains near Aden (1250N/4503E) on 29 September. No surveys were carried out in October.

• **Forecast**

Low to moderate numbers of adults are likely to be present on the Tihama and to a lesser extent on the Aden coastal plains where they are expected to lay in areas of recent rainfall. Consequently there is a risk that locust numbers will significantly increase since breeding this year is likely to occur earlier than in previous years, allowing for several generations if rains continue in the coming months. Regular surveys should be carried out in the above areas.

Kuwait

• **Situation**

No locusts were reported during September

• **Forecast**

No significant developments are likely.

Egypt

• **SITUATION**

Isolated mature adults were present at several locations near the Nile River Valley south of Aswan and on the coastal plains near Halaib (2212N/3635E) and Wadi Diib at the end of September.

• **FORECAST**

Breeding is expected to occur in the south-east along the coastal plains and subcoastal wadis which could lead to the formation of hopper groups and small bands. There is a risk that locust numbers will significantly increase since breeding this year is expected to occur earlier than in previous years, allowing for several generations if rains continue in the coming months. Regular surveys should be carried out in the above areas.

Oman

• **FORECAST**

Low to moderate numbers of adults and perhaps a few small groups or swarmlets are likely to appear on the Batinah or near Sur from the Indo-Pakistan summer breeding areas and lay in areas of recent rainfall. Consequently, locust numbers are expected to increase during the forecast period. Regular surveys should be carried out in the above areas.

UAE

• **FORECAST**

Low to moderate numbers of adults are likely to appear on the Fujayrah coast and lay in areas of recent rainfall. Regular surveys should be carried out in the above areas.

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

• **FORECAST**

No significant developments are likely.

SOUTH-WEST ASIA

Pakistan

• **SITUATION**

During the first fortnight of October, new swarms began to form in the Nara desert. There were 8 reports of swarms on the 6-15th varying in size from 50-300 ha; some of these were moving back and forth across the border with India. Third to fifth instar hopper bands and fledglings continued to mature in the Khipro and Nara deserts. A total of about 682 bands were reported from 20 locations. Aerial and ground control operations were carried out against the swarms and bands, treating about 7,000 ha which was much less than in September. Solitarious adults at densities up to 6 per ha were reported from 7 locations in Rahimyar Khan district.

During the second fortnight, control operations were carried out in the Nara desert against 7 fourth instar hopper bands in an area of 100 ha on the 18th and against one group of mature adults covering about 300 ha on the 25th. By the end of the month, operations had nearly concluded and only solitarious adults at densities up to 48 per ha remained in 4 locations of Nara desert.

• **FORECAST**

Any adults and perhaps a few small groups or swarmlets that escape control operations along the Indo-Pakistan border are expected to appear in coastal and interior areas of Baluchistan. These could lay in areas where unusually heavy rains recently fell. Surveys are recommended to detect incoming adults and any subsequent breeding.

India

• **SITUATION**

During the second fortnight of September, control operations continued against third to fifth instar hopper bands, fledglings and new adults in Jaisalmer district of Rajasthan. Most of the infestations continued to be concentrated near Sam (2640N/7011E). A total of 10,034 ha were treated. Solitarious adults were reported from 26 locations in Barmer district and 20 in Bikaner at a maximum density of 22 per ha.

During the first fortnight of October, new swarms began to form and control was carried out against two swarms of 100 ha each (475 ha were treated) as well as 5,029 ha of late instar hopper bands and fledglings in Jaisalmer district. Some of the adults were moving back and forth across the border with Pakistan. Solitarious adults were reported from 25 locations of Barmer and Jaisalmer districts at a maximum density of 30 per ha.

During the second fortnight, control operations had concluded and only isolated solitarious adults at a maximum density of 4 per ha persisted at 3 locations of Barmer district in Rajasthan and one of Banaskantha district in Gujarat.

• **FORECAST**

Only a few solitarious adults are likely to remain and persist in Rajasthan.

Iran

• **FORECAST**

Adults and perhaps a few small groups or swarmlets may appear on the coastal plains near Chabahar or in interior areas near Iranshahr and Saravan from the Indo-Pakistan border. These could lay in areas where unusual rains recently fell. Surveys are recommended to detect incoming adults and any subsequent breeding.

Afghanistan

• **FORECAST**

Low to moderate numbers of adults and perhaps a few small groups or swarmlets may appear in the extreme south and lay in areas of recent rainfall.

Other Locusts

Significant infestations of African Migratory Locust (*Locusta migratoria capito*) and Red Locust (*Nomadacris septemfasciata*) persisted in **Madagascar**. By the last dekad of October the rainy season had begun. Consequently, mature swarms are present in the south-west and are in the process of laying eggs. Swarms have also moved out of the traditional outbreak areas and invaded in the north-west near Morafenobe where there are currently breeding. During the month, there were 178 reports of swarms. Aerial and ground control operations treated about 119 small swarms for a total of 9,150 ha. Since October 1996, a total of 227,728 ha have been treated.

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^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

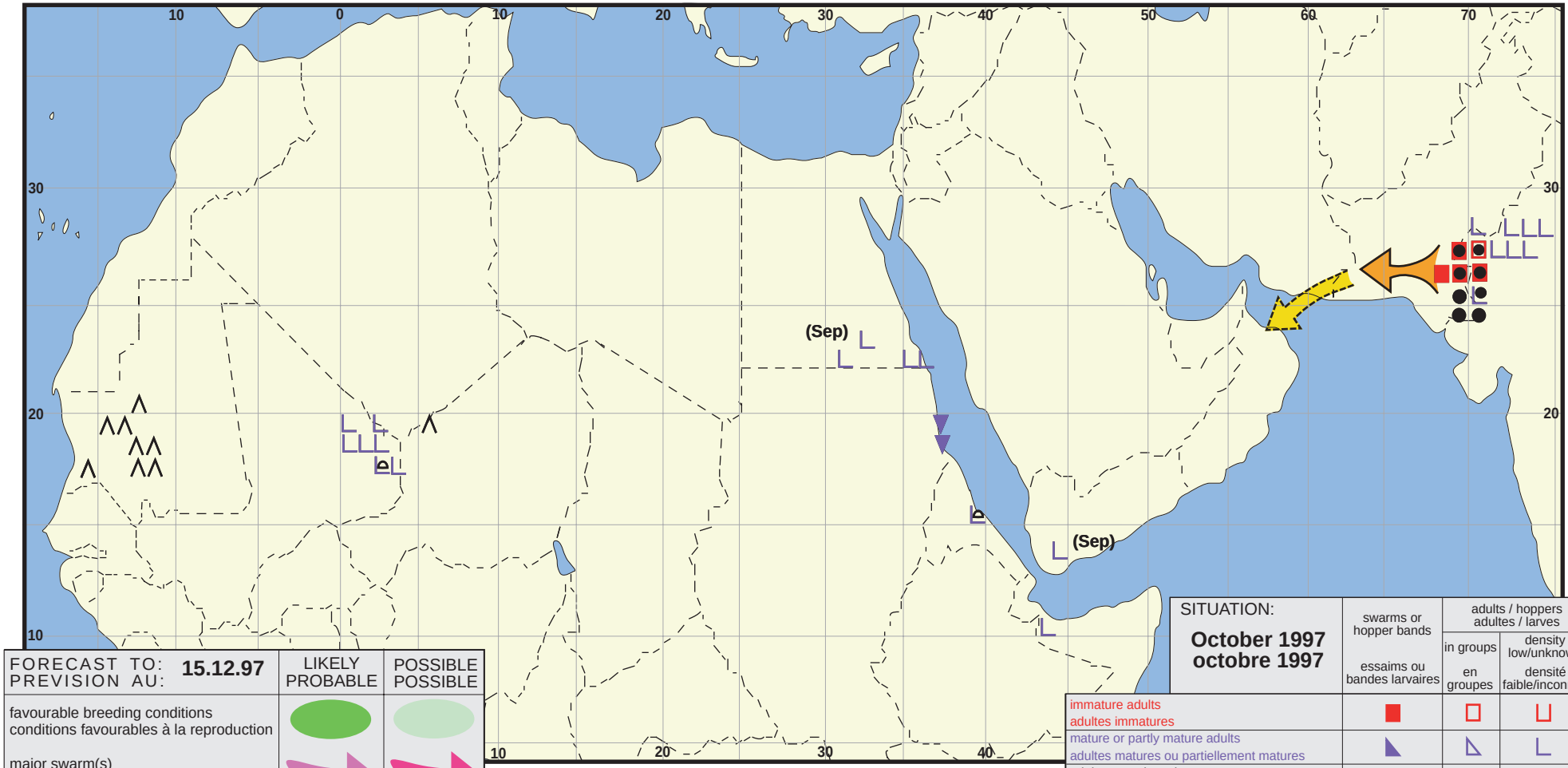
- period of deep recession marked by the complete absence of gregarious populations.

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.

Desert Locust summary
Criquet pèlerin situation résumée

230



FORECAST TO: PREVISION AU: **15.12.97**	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favourables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: **October 1997 octobre 1997**	swarms or hopper bands essaims ou bandes larvaires	adults / hoppers adultes / larves in groups en groupes	density low/unknown densité faible/inconnue
immature adults adultes immatures	■	□	⊔
mature or partly mature adults adultes matures ou partiellement matures	◣	◺	∟
adults, maturity unknown adultes, maturité inconnue	▲	△	∧
egg laying or eggs pontes ou œufs	▼	▽	∨
hoppers larves	●	○	◡
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)	◘	◙	⊔