

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 228
(8 Sep 1997)



General Situation during August 1997 Forecast until mid-October 1997

Significant Desert Locust infestations continued to persist along the Indo-Pakistan border where patchy breeding started in July and continued throughout August. The majority of the infestations were in Pakistan where control was carried out against an increasing number of hopper bands and adults during the month. At the end of the month, mature swarms were reported moving back and forth across the Indo-Pakistan border. As a result of recent rainfall, conditions are expected to remain favourable to allow rapid maturation and a second generation in both countries. In West Africa, widespread rains fell in Mauritania where breeding conditions are improving but so far very few adults have been found during surveys. In East Africa, small scale breeding is in progress in central Sudan. No significant infestations were reported in the Near East or North-West Africa.

In the Eastern Region, breeding was reported over a limited area of the Tharparkar desert in south-eastern **Pakistan** which has resulted in a patchy distribution of more than a thousand small hopper bands. In early August, control teams treated about 10,000 ha containing more than 1,600 bands and several spots of high density solitarious adults. New adults started to appear by mid month and some of these rapidly

matured and formed swarms. There were dozens of reports of mature swarms copulating along the border in Pakistan and to a lesser extent in **India** at the end of August. The number of reports of swarms moving back and forth across the common border suggests that there may have been areas of earlier undetected breeding. It is expected to be very difficult to control all infestations and prevent a second generation of breeding which will commence in early September. The number of hopper bands and new swarms produced in both countries will depend on the ability to find enough of the infestations and treat them successfully.

In the Central Region, solitary and transiens hoppers and new adults were reported in the interior of **Yemen** where conditions are becoming dry which may encourage adults to move to the coastal plains. Breeding on a small scale is in progress in parts of eastern, central and western **Sudan** where rain was reported in a few places. As conditions continue to be favourable for breeding, locust numbers are expected to increase during the forecast period, but still remain at a low level. A few isolated adults were reported on the Red Sea coastal plains of **Eritrea** where breeding had occurred in areas of run-off. Greater numbers of adults are likely to be present and breeding in the western lowlands in areas of recent rainfall. Isolated adults were present in northern **Somalia** and south-eastern **Egypt**.

In the Western Region, only isolated adults were reported in southern **Mauritania**. Numbers are expected to increase as a result of widespread rains in late August and subsequent breeding that may occur during September. No reports were received from **Mali**, **Niger** or **Chad** where conditions are thought to be less favourable. Heavy rains fell in southern **Algeria** where conditions are reported to be favourable for breeding.

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.

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No. 228

DESERT LOCUST BULLETIN



Weather & Ecological Conditions during August 1997

Good rains fell in parts of the Sahel in West Africa and along the Indo-Pakistan border where conditions are favourable for breeding. Elsewhere, no significant rains were reported.

In **West Africa**, the position of the Inter-Tropical Convergence Zone (ITCZ) was extremely variable during August, fluctuating between 15-26N. Widespread rains fell over parts of the region in association with northern surges of the ITCZ and with a few eastward moving depressions over North-West Africa. In Mauritania, rains continued to fall in the south throughout most of the month but other areas remained relatively dry. During the third dekad, rainfall increased over a large portion of the north (Bir Moghreïn: 38 mm, to Akjoujt: 45 mm) extending to central areas (Tidjikja: 67 mm), the west and south-west (Trarza and western Brakna) and parts of the south (Aioun: 171 mm). Consequently, breeding conditions are expected to improve and be favourable over large parts of the country. In Mali, good rains fell in the south-west (Nioro: 119 mm, Nara: 62 mm) and clouds were present over the north but no reports of significant rainfall were received. Conditions are expected to be favourable for breeding near Nara and Nioro and to a lesser extent in parts of the Adrar des Iforas and Tamesna. In Niger, rains were weak over Tamesna and Air (Agadez: 43 mm) and light rains fell in the north-east (Bilma: 13 mm). Breeding conditions are probably similar to that in

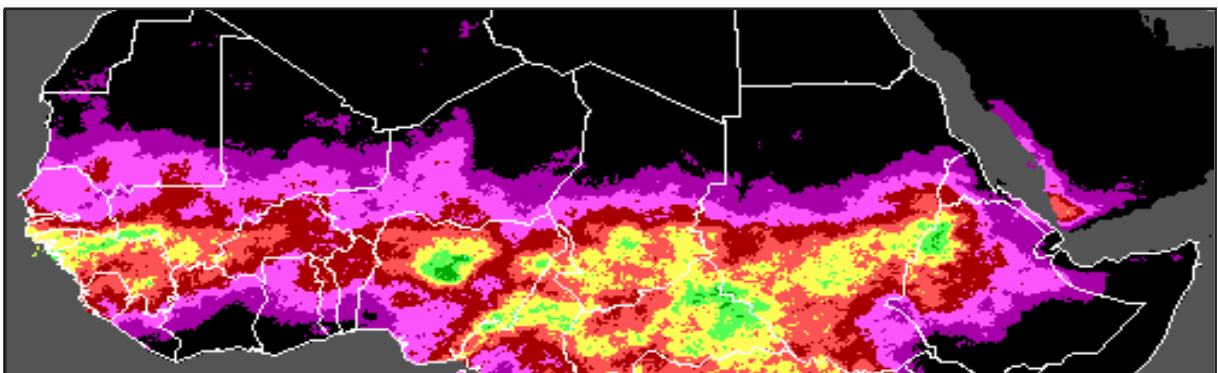
northern Mali. In Chad, clouds were present over Tibesti and light rain was reported in the east (Abeche: 17 mm). Favourable conditions are expected to be limited to a few wadis and low-lying areas.

In **North-West Africa**, moderate rains fell in a few isolated places of the central Sahara in Algeria (Tamanrasset: 34 mm) and on the southern side of the Atlas Mountains in Morocco (Ouarzazate: 30 mm). Heavier rains fell in the extreme south of Algeria. Breeding conditions are expected to be improving in these areas.

In **East Africa**, clouds were present at times over the summer breeding areas in Sudan and western Eritrea. In Sudan, light to moderate rains were reported in a few parts of Darfur, Kordofan and the Eastern province. Although there were no indications of any unusually heavy rainfall, conditions are said to be favourable for breeding in the most areas. In Eritrea, rains may have fallen over the western lowlands and breeding conditions are expected to be favourable. The Red Sea coastal plains remained dry in both countries except for a few wadis which may have received some limited runoff from rains in the adjacent highlands. In northern Somalia, heavy rains fell in the north-west along the Ethiopian border (Borama: 125 mm, Hargeisa: 85 mm). Green vegetation was present over a large area from Jijiga, Ethiopia to the Dobo Valley.

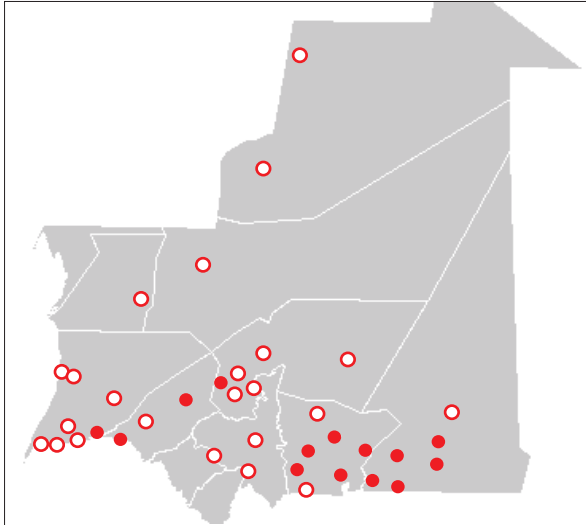
In the **Near East**, no significant rainfall was reported except on the Red Sea coast of Saudi Arabia where 22 mm fell at Jizan. Consequently, conditions in other areas are expected to be dry and not favourable for breeding.

In **South-West Asia**, light to moderate rains associated with the monsoon fell in Rajasthan, India and the Tharparkar desert in south-eastern Pakistan where conditions were favourable for breeding during August. The heaviest rains reported in Rajasthan were at Jodhpur (221 mm) and Barmer (140 mm) while lighter rains fell at Bikaner (41 mm) and Jaisalmer (26 mm). In Tharparkar, heavy rains continued to fall at Chhore (156 mm). Consequently, breeding conditions



Cold-cloud image for August 1997 indicating a continued increase in activity over the Sahel of West Africa, especially Mauritania, northern Mali, western Niger and Sudan. An increase is also apparent in western Eritrea and north-western Somalia.





Rainfall reports from national meteorological stations in Mauritania indicate that rains fell over a large part of the country during August. (○ 25-100 mm ● 100+ mm)

are expected to remain favourable in Tharparkar and southern Rajasthan while less favourable conditions are expected in Cholistan, Pakistan. There were periods of south-westerly winds over Tharparkar especially at the end of the month from the 27th onwards.



Area Treated

India	1,200 ha	(28-30 August)
Pakistan	16,700 ha	(August)
Sudan	100 ha	(August)



Desert Locust Situation and Forecast

WEST AFRICA

Mauritania

• SITUATION

Isolated maturing and mature solitary adults persisted throughout August near Kiffa (1638N/1128W) and Nema (1632N/0712W). No locusts were seen during surveys carried out in the south-west.

• FORECAST

As a result of the widespread good rains in late August, breeding is expected to occur during September within a large area of the south and south-east (the two Hodhs), extending north into central areas (southern Tagant) and to the south-west (Trarza and

western Brakna). Consequently, solitary locust numbers are expected to increase during the forecast period.

Mali

• FORECAST

Breeding on a small scale is likely to be in progress in a few places of the Adrar des Iforas, Timetrine and Tamesna. As favourable conditions are expected to be limited to some wadis and depressions, only low numbers of hoppers and adults are likely to be produced during the forecast period.

Niger

• SITUATION

There was an unconfirmed report by travellers of isolated adults in the Air in late July.

• FORECAST

Small scale breeding is likely to be in progress in a few areas of Tamesna and Air where recent rains have fallen. As favourable conditions are thought to be limited to some wadis and depressions, only low numbers of hoppers and adults are likely to be produced during the forecast period.

Chad

• FORECAST

Breeding on a small scale may be in progress in some parts of the north and east, especially in areas of recent rainfall near Abeche and perhaps Tibesti. However favourable conditions are thought to be limited and consequently only low numbers of locusts are likely to be produced during the forecast period.

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

• FORECAST

No significant developments are likely.

NORTH-WEST AFRICA

Algeria

• SITUATION

No locusts were seen in July and August.

• FORECAST

Scattered adults may be present in a few places of the Hoggar near Tamanrasset and in the extreme south. These may breed in areas of recent rainfall or run-off.



No. 228



No. 228

DESERT LOCUST BULLETIN

Morocco

• SITUATION

No locusts were seen in July and August.

• FORECAST

No significant developments are likely.

Tunisia and Libya

• FORECAST

No significant developments are likely.

EASTERN AFRICA

Sudan

• SITUATION

In the eastern provinces, infestations reported during July along the western side of the Red Sea Hills north of Kassala declined during August. Scattered mature adults were seen in only one area, Wadi Habob (1818N/3535E), at densities of 450 per ha. Isolated breeding occurred at the same location as suggested by the presence of fifth instar hoppers on 14-15 August. In the central provinces, ground control operations treated 100 ha of second and third instar solitary hoppers near Ed Duiem at Umm Rimta (1451N/3204E). Hatching and first instar hoppers were also reported at the same location. Surveys were in progress in the White Nile area. In the western provinces, no locusts were seen during surveys in the El Geneina area near the Chad border on the 10-12th; no surveys were conducted in Northern Kordofan or elsewhere in Northern Darfur during August.

• FORECAST

Breeding on a small scale is expected to be in progress in parts of Northern Darfur, Northern Kordofan and White Nile provinces in areas of recent rainfall. Breeding may also be in progress on a slightly larger scale in the eastern provinces west of the Red Sea Hills where rains have been heavier. As a result, low numbers of adults are likely to be produced and some of these may start moving towards the Red Sea coast at the end of the forecast period. These may be supplemented by additional adults from the western lowlands of Eritrea.

Eritrea

• SITUATION

Low numbers of maturing solitary adults continued to be present at a few places on the Red Sea coastal plains during August. On the 20th, mature

adults were seen in the Shebah area (1542N/3902E) and second to fourth instar hoppers at densities of 5-10 per bush, and fledglings and adults were reported in the Sheib area at Bisses (1553N/3900E). Most of the hoppers were fourth instar.

• FORECAST

Low numbers of adults will persist at a few places on the Red Sea coast. These are expected to concentrate in low-lying areas as vegetation continues to dry unless further rainfall occurs. Higher numbers of locusts are likely to be present and may be increasing in the western lowlands where breeding is likely to be in progress in areas of recent rainfall.

Somalia

• SITUATION

Low numbers of immature adults were seen during surveys on the central northern coast near Las Khoreh (1110N/4812E) and in subcoastal areas near Erigavo (1040N/4720E) during the first week of August. No locusts were seen during surveys undertaken on the 14-19th between Hargeisa (0931N/4402E) and Berbera (1028N/4502E).

• FORECAST

*Low numbers of solitary adults are likely to persist in the few inland valleys of the north and north-west that remain green. Other adults may appear, mixed with *Locusta*, in the north-west between Hargeisa and Borama.*

Djibouti, Ethiopia, Kenya, Tanzania and Uganda

• FORECAST

No significant developments are likely.

NEAR EAST

Saudi Arabia

• SITUATION

No locusts were reported during August.

• FORECAST

Low numbers of locust adults are likely to be present on the southern coastal plains of the Red Sea near Jizan. These may persist and lay in areas of recent rainfall.

Yemen

• SITUATION

Small locust infestations continued to be present in the Shabwah region of the interior as a result of breeding last month. Solitary and transiens hoppers and fledglings increased in density and have become concentrated in two areas: to the west of Ataq at Erga (1429N/4637E) within an area of 40 sq. km, and to the east at Jebel Hadid (1433N/4636E) in 10 sq. km. Hoppers of all instars were reported on 8-9 August with second instar as the predominant stage at densities of 40-60 per sq. m. Scattered adults were seen in Wadi Jannah (1508N/4555E).

• **FORECAST**

Small groups of immature adults are likely to form in the Shabwah region as vegetation continues to dry. These may move to the coastal plains along the Red Sea and Gulf of Aden if rainfall occurs there.

Egypt

• **SITUATION**

Isolated solitary mature adults continued to be reported from a few places in the extreme south-east in the Wadi Diib area (2205N/3555E) near the Sudanese border in late August.

• **FORECAST**

Isolated adults are likely to persist in a few places in the south-east.

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

• **FORECAST**

No significant developments are likely.

SOUTH-WEST ASIA

Pakistan

• **SITUATION**

During the first fortnight of August, control operations continued against hopper bands which were scattered within an estimated area of 15,000 ha in the Tharparkar desert between Chachro (2509N/7018E), Mithi (2443N/6953E) and Chhore (2535N/6948E). Nearly 1,600 first to fourth instar bands were treated by ground teams covering an area of about 8,000 ha. Outside of this area, solitary hoppers at densities of 3-10 hoppers per bush were present in a few parts of the Khipro and Tharparkar deserts which were treated, covering 2,300 ha. Control operations were also carried out against a high concentration of adults in the Nara desert at Garh (2720N/6915E) on the 13th. Elsewhere, solitary adults were scattered over a large area near the Indian border, extending from Tharparkar to Cholistan and reported from 26 locations at densities of 1-50 adults per location.

During the second fortnight of August, a total of four mature swarms and adult groups were reported and treated in the Nara desert and 14 in the Khipro desert from the 24th onwards. Some were said to have crossed the border from India. The swarms were 200-400 ha in size and most of them were seen copulating. In Tharparkar, control operations continued, treating 40 third and fourth instar hopper bands within an area of 1,200 ha. Low to medium densities of solitary adults were present throughout the period in all of the above area and in Lasbela district. Medium densities of solitary hoppers were present and treated in 8 places of Nara and Tharparkar.

• **FORECAST**

A second generation of breeding is expected to occur in Tharparkar and to a lesser extent in Khipro and Nara deserts in areas of recent rainfall with laying continuing into September. Consequently, small hopper groups and bands are likely to appear which could lead to swarm formation by the end of the forecast period. These could be supplemented by adults as they move back and forth across the border with India. The scale of breeding is estimated to be low to moderate, depending on the success of survey and control operations. Breeding is less likely to continue in Cholistan unless additional rains fall.

India

• **SITUATION**

During the first fortnight of August, adult densities declined in Rajasthan where scattered mature adults were reported from 48 locations of Bikaner and Barmer districts and, to a lesser extent, Jodhpur and Jaisalmer. A maximum density of 45 adults per location was seen in Jaisalmer at Dhanana (2640N/7027E) on the 11th. Second to fourth instar solitary hoppers at low densities were seen on the 3rd at Kupauria (2656N/7304E) in Jodhpur district and on the 11th at Surjara (2804N/7249E) in Bikaner.

Four small mature swarms were seen coming from the west on 28-30 August and settled west of Jaisalmer near Sam (2652N/7030E). The swarms varied from 100-400 ha in size. Control operations were immediately undertaken.

• **FORECAST**

A second generation of breeding is expected to occur in parts of western Rajasthan where good rains fell in August. Consequently, hoppers could start appearing during September and form bands, possibly leading to swarm formation by the end of the forecast period. The scale of breeding is estimated to be low to moderate, depending on the success of survey and control operations. There is a good possibility of adults moving back and forth across the Pakistan border.

Afghanistan and Iran

• **FORECAST**

No significant developments are likely.



No. 228



No. 228

DESERT LOCUST BULLETIN

Empres meetings

An EMPRES Workshop on the Economics of Desert Locust Management will be held in Cairo on 21-22 September 1997. It will be followed by a meeting of the EMPRES Liaison Officers for the Central Region.



Migratory Locust in Madagascar

Numerous swarms of Migratory Locust continue to be present in the southern and south-western parts of Madagascar. Many of these were seen to be flying towards the south and west. Although control operations have been in progress for several months, the situation remains serious. During the last dekad of August, there were 62 sightings of swarms by survey and control teams and another six by other sources. Of these, 58 were Migratory Locust, three were Red Locust, and seven were mixed. The swarms varied from 1 to 400 ha in size. Four FAO experts are supervising control operations in order to reduce the number of swarms before the beginning of the next rainy season.



Announcements

New FAO telephone and fax numbers

All telephone numbers at FAO Headquarters (Rome) have changed from 522.xxxxx to 570.xxxxx (the 5-figure internal extension (xxxxx) remains the same). All fax numbers in the Organization changed using the same formula.

Accordingly, the new telephone and fax numbers of the FAO Locust Group (preceded by +39-6 for country and city codes) are :

570-52420	(locust situation by telephone)
570-55271	(locust reporting by fax)
570-54021	(Mr. A. Hafraoui, Senior Officer)
570-53836	(Mr. C. Elliott, Migratory Pests)
570-52420	(Mr. K. Cressman, Survey/Forecast)
570-54595	(Mr. M. Cherlet, Remote Sensing)
570-53311	(Ms. A. Monard, Information)
570-54812	(Ms. D. Boland, Secretary)
570-53235	(Ms. C. D'Angelo, Operations)



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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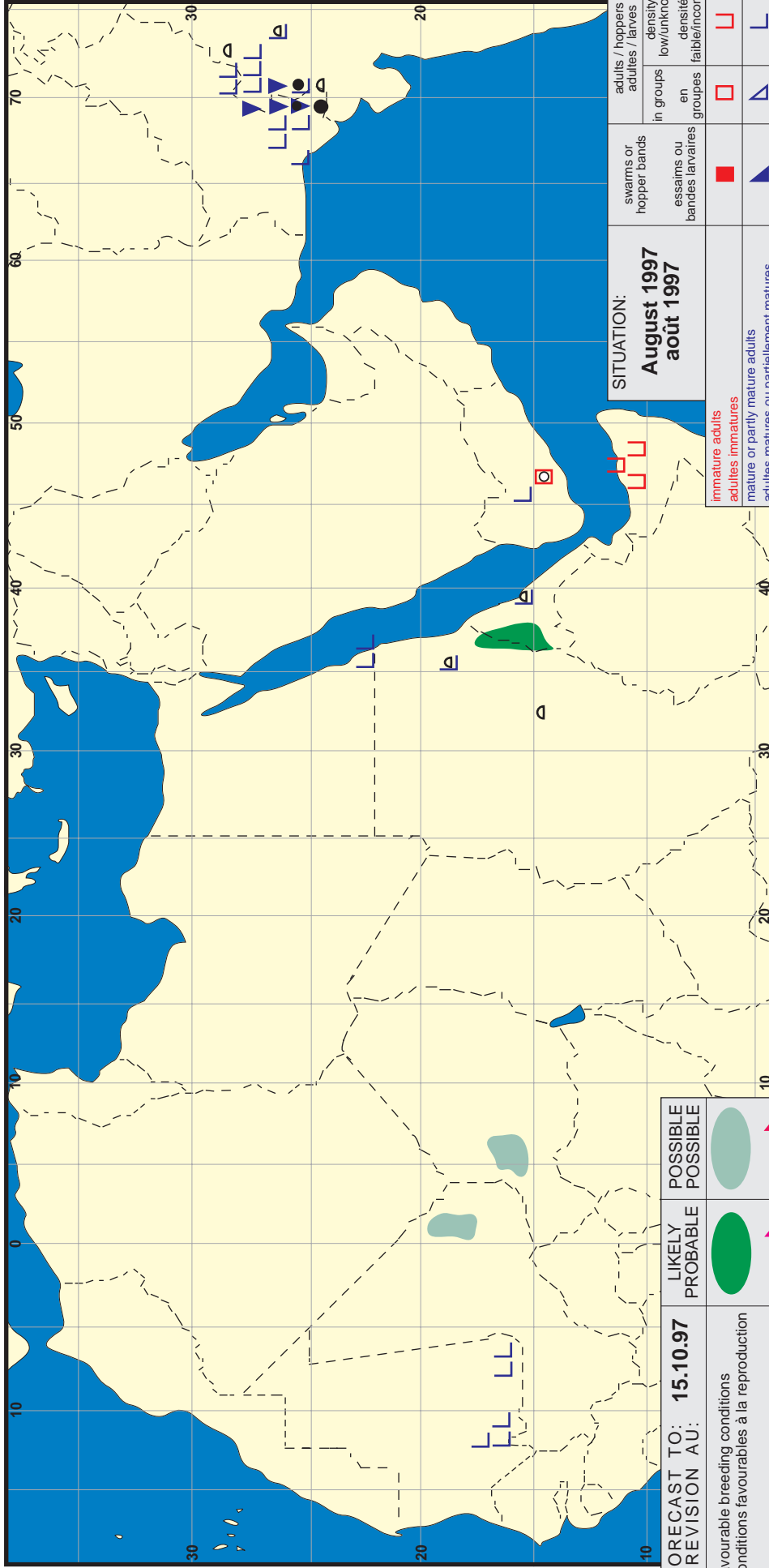


No. 228



Desert Locust summary Criquet pèlerin situation résumée

228



FORECAST TO: PREVISION AU:	15.10.97	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favorables à la reproduction			
major swarm(s) essaïm(s) important(s)			
minor swarm(s) essaïm(s) limité(s)			
non swarming adults adultes non essaïmant			

SITUATION: August 1997 août 1997		swarms or hopper bands essaïms 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)			