

# DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 232  
(3 Feb 1998)



## General Situation during December 1997 and January 1998 Forecast until mid-March 1998

**Desert Locusts continued to increase along both sides of the Red Sea during December and January. As a result of significant breeding in Eritrea and Sudan, hopper bands were present which led to swarm formation from late December onwards. Some of these swarms moved across the Red Sea to the coastal plains of Saudi Arabia during January where they laid eggs. Aerial and ground control operations are in progress in all countries. However, there is a risk that additional breeding will occur during the forecast period. Elsewhere, no significant developments were reported.**

**Central Region.** As a result of favourable breeding conditions over much of the Red Sea coastal plains of **Sudan** and **Eritrea**, hopper bands formed throughout December from northern Eritrea to Port Sudan. Some of these were mixed with African Migratory Locusts. Those bands that escaped control operations fledged and formed adult groups and small swarms by the end

of the year. In early January, many are thought to have migrated across the Red Sea where they first started appearing on the coastal plains of **Saudi Arabia** on the 6th. In all, there were 48 reports of incoming swarms during January. Some of the swarms first moved north along the coast of Sudan to **Egypt** where they were treated. However, a few were seen migrating across the Red Sea. The swarms laid upon arrival in Saudi Arabia and hoppers started hatching later in the month. Another generation of breeding started in the Tokar Delta of Sudan and in parts of Eritrea in January. Aerial and ground control operations are in progress in Egypt, Eritrea, Saudi Arabia and Sudan. Nearly a 100,000 ha have been treated so far during December and January. During the forecast period, more hopper bands and swarm formation are expected. Some swarms may also appear on the Red Sea coast of **Yemen**.

**Eastern Region.** Unusually heavy rainfall was reported in the spring breeding areas of Baluchistan in western **Pakistan** during December and early January. These may have extended to eastern **Iran** and parts of northern **Oman**. Although no locusts were reported from these areas, there is a good possibility that low numbers are present and breeding. Surveys are recommended to clarify the situation.

**Western Region.** Isolated solitary adults were present in northern **Mauritania** where limited breeding occurred. 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 and Other Migratory Pests Group, AGP Division, FAO, 00100 Rome, Italy. It is also available on the Internet.

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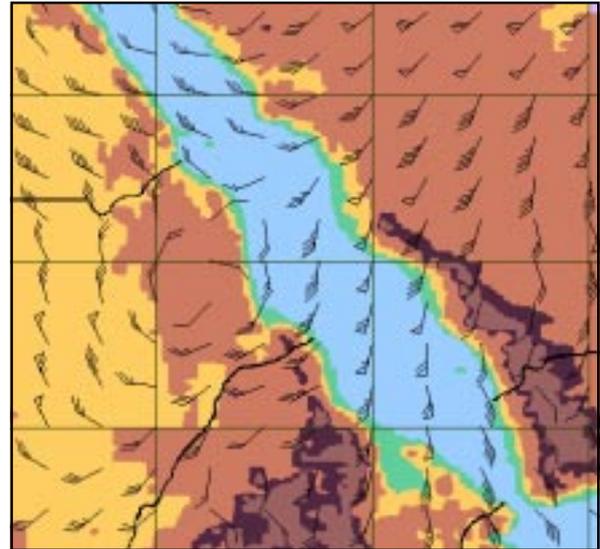


### Weather & Ecological Conditions in Dec 1997 - Jan 1998

In the **Western Region**, sporadic rains fell during December and January in northern Mauritania (Atar 19 mm) while isolated showers fell in the south (Aioun 30 mm) in early January. Consequently, localized areas of green vegetation persisted in the centre of the country and patches of green vegetation were present in the El Hank region of the north as well as in the Wadi El Hamra area near the Algeria/Morocco border. Light rains fell on the south-western coast of Morocco and on the southern side of the Atlas Mountains in Morocco and Algeria during December. However, conditions remain unfavourable for breeding. Winds were predominantly from the east or north-east over the region except for short periods of southerly winds associated with eastward-moving depressions over the Mediterranean.

In the **Central Region**, light to moderate rains fell sporadically at times during the first half of December and the first three weeks of January along both sides of the Red Sea. In Saudi Arabia, for example, Jizan reported 21 mm on 6 December and Jeddah 44 mm on 1 January. Often it was overcast with daily temperatures in the 20s or low 30s. As a result of this and previous rainfall, breeding conditions continued to remain favourable in most areas along the coastal plains of Eritrea and Sudan from south of Massawa to Port Sudan (550 km), in Saudi Arabia from Jizan to Yanbu (750 km), and in some parts of south-eastern Egypt. Conditions were less favourable for breeding on the Red Sea coastal plains of Yemen but were improving on the Aden coastal plains as a result of heavy rainfall in January. In northern Somalia, green vegetation persisted in coastal and subcoastal areas. Winds were predominantly from the north over the western side of the Red Sea except for a few brief periods of southerly and south-westerly winds in January. Often these were associated with the Red Sea Convergence Zone which was located over 19-21N or low pressure systems.

In the **Eastern Region**, unusually heavy rains fell during December and the first half of January in Baluchistan, western Pakistan. The rains were



Surface and mid-level (850 hPa) winds on 5 January 1998 associated with a low pressure system of the coast of Sudan. These and similar winds at times during January were probably responsible for locust migration from Sudan and Eritrea to Saudi Arabia.

reported primarily in coastal areas (Jiwani 136 mm, Pasni 86 mm) and to a lesser extent in the interior. They may have also extended into eastern Iran. Thus far, there have been nearly three consecutive months of good rainfall. Consequently, breeding conditions are expected to be favourable, although low temperatures may have inhibited such activity up to now.



### Area Treated

Egypt	11,200 ha	(6-28 January)
Eritrea	14,597 ha	(24 Nov - 28 Jan) (mixed with AML)
Saudi Arabia	32,723 ha	(6-31 January)
Sudan	22,415 ha	(1-31 December)
	13,610 ha	(1-24 January)



### Desert Locust Situation and Forecast

#### WEST AFRICA

##### Mauritania

###### • SITUATION

During December, individual solitary mature adults were present at a few places between Atar (2032N/1308W) to just north of Zouerate (2244N/1221W).

During January, locusts persisted in the above areas. Isolated adults were seen at a few places in the El Hank region of the extreme north-east. A few

solitarious hoppers were seen at 2117N/1154W indicating that small scale breeding was in progress.

• **FORECAST**

*Low numbers of solitarious adults will persist in the north from Akjoujt to El Hank where limited breeding will occur in areas of recent rainfall.*

**Mali**

• **FORECAST**

*Low numbers of solitarious adults may be present in a few of the major wadis in the Adrar des Iforas and Tilemsi Valley and breed if rainfall occurs.*

**Niger**

• **SITUATION**

Late reports stated that small scale breeding which commenced in September continued during November in parts of the Tamesna. Groups of immature and mature adults as well as solitarious and transiens third to fifth instar hoppers were present between Agadez (1700N/0756E) and Arlit (1845N/0725E) late in the month. Similar infestations were also reported at several places to the north-west of Arlit, reaching 1917N/0625E.

• **FORECAST**

*Low numbers of solitarious adults will persist in a few places 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**

No locusts were seen in December.

• **FORECAST**

*Scattered adults may 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 December.

• **FORECAST**

*Isolated solitary adults may be present in the extreme south-west and breeding in areas of recent rainfall.*

**Tunisia**

• **SITUATION**

No locusts were seen in November.

• **FORECAST**

*No significant developments are likely.*

**Libya**

• **FORECAST**

*No significant developments are likely.*

**EASTERN AFRICA**

**Sudan**

• **SITUATION**

During December, there was an increase in hopper bands reported along the Red Sea coastal plains between Port Sudan and Tokar Delta. The bands consisted of hoppers of all instars. Some of these started to fledge during the first week of the month and form immature swarms by the 15th. By the end of the month, most of the infestations consisted of late instar hopper bands and fledglings but only a few swarms suggesting that others may have migrated north and eastwards. A total of 22,415 ha was treated by air and ground.

During January, control operations continued against late instar hopper bands and fledglings in the above areas. There was also an increasing number of immature and mature swarms reported from the 3rd onwards. Some of these are thought to have moved north and eastwards as indicated by reports of a 24 sq. km dense maturing swarm on the northern coast at Marob (2151N/3648E) on the 16th and a few smaller swarms on the coast north of Port Sudan the following day. In Tokar Delta, mature swarms were seen laying from the 10th onwards and new hopper bands were reported from the 15th. This suggests that a second generation of breeding is underway. In the northern subcoastal areas, mature solitarious adults were present in Wadi Oko/Diib from Tomala (2002N/3552E) to Gabatit (2028N/3549E) on the 13-14th. A total of 13,610 ha were treated up to the 24th.

• **FORECAST**

*A limited number of swarms will continue to form and mature early in the forecast period on the coastal plains from Port Sudan to the Eritrean border. If these are not controlled, some could move north or eastwards while others may stay, mature and lay. Consequently, second generation breeding is likely to extend into coastal areas north and south of Tokar Delta, producing an increasing number of hopper bands which are expected to form new swarms from early March onwards. The scale of the breeding and swarm formation is difficult to estimate as it depends on the success of survey and control operations as well as on access to breeding areas.*



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### Eritrea

#### • SITUATION

During December, hopper bands increased on the northern coastal plains from Mahmimet (1719N/3832E) to Karora (1740N/3826E). Most of these consisted of numerous small patches, some of which were mixed with African Migratory Locust. Small groups of new adults started forming early in the month. New hatching, band formation and adult grouping continued throughout the month, extending south to the Naro Plains (1625N/3855E) and the Wakiro (1550N/3917E) area. Ground control operations were carried out against the hopper bands.

During January, hopper bands and groups of adults and low density immature swarms persisted in the north. Several bands and immature swarms of 200-300 ha were controlled by air on the 29th near Mersa Teclai (1730N/3850E). Some of these may have been mixed with African Migratory Locusts. Further south, very small first to fourth instar hopper bands and solitary adults were present at several locations along the coastal plains between Irafayle (1515N/3949E) and Mersa Gulbub (1622N/3910E) on the 16-18th. Some of the adults were in groups and laying eggs while others were mixed with African Migratory Locusts. This suggests that a second generation of breeding is underway. Control operations from 24 November to 28 January treated 1,979 hopper bands covering 13,397 ha; 669 of these bands were Desert Locust (2,153 ha). About 1,200 ha consisting of 18 adult groups were also treated.

#### • FORECAST

*Any adult groups and swarms currently present on the coastal plains that escape control could move north or eastwards while others may stay, mature and lay, resulting in new hopper bands from about late February onwards. Current hopper band infestations, if uncontrolled, could start to form several small swarms late in the forecast period.*

### Ethiopia

#### • SITUATION

No locusts were seen during surveys in the eastern region between Dire Dawa, Djibouti and Jijiga on 8-14 December.

#### • FORECAST

*A few isolated adults mixed with Locusta may be present near the Djibouti/Somalia border and breeding in areas of recent rainfall.*

### Somalia

#### • SITUATION

A few isolated mature solitary adults were seen at two places in the eastern part of northern Somalia near Gardo (0930N/4906E) during surveys on 25-30 November.

#### • FORECAST

*Small scale breeding is likely to continue in coastal and subcoastal areas of the north. Consequently, locust numbers will increase slightly as hoppers and new adults appear during the forecast period.*

### Djibouti

#### • FORECAST

*Low numbers of adults may be present along the coastal plains and breeding in areas of recent rainfall.*

### Kenya, Tanzania and Uganda

#### • FORECAST

*No significant developments are likely.*

### NEAR EAST

#### Saudi Arabia

#### • SITUATION

During 20-24 December, low numbers of solitary mature adults, at densities of up to 400 per ha, were present at several locations on the Red Sea coastal plains between Al-Lith (2017N/4020E) and Bader (2347N/3847E). Small scale breeding occurred near Al-Qunfidah (1909N/4107E) where solitary third to fifth instar hoppers were seen at densities of 1-2 per sq. m and between Rabigh (2242N/3910E) and Bader where isolated solitary hoppers were present at densities up to 20 per ha.

On 6 January, there were reports of mature swarms arriving from across the Red Sea. The swarms appeared between Al-Lith and Al-Qunfidah, varying in size from 1-30 sq. km. Most of these laid shortly after arrival. By the 19th, hatching had started near Al-Qunfidah. Reports of several swarms per day arriving from the west continued until the end of the month. In all, there were 48 reports of swarms and swarmlets, some of which split up prior to laying. A total of 32,723 ha were treated by 30 ground teams and three aircraft.

#### • FORECAST

*Breeding will continue during the forecast period along the Red Sea coastal plains from Al-Lith to Bader and perhaps extend to Al-Wejh and Jizan if conditions are favourable. Consequently, an increasing number of hopper bands will appear during February and new*

swarms could start to form by early March. There is moderate risk of additional swarms arriving from Eastern Africa and moving south or north along the coastal plains during the period.

### **Egypt**

#### **• SITUATION**

On 6 January, a 5 sq. km immature swarm was seen coming from the south at Wadi Frukut (2201N/3607E) near the Sudanese border. There was other reports of dense immature swarms appearing from the south on the 17th, 21-22nd, and 27-31st. Most of these settled in coastal and subcoastal areas between Halaib (2212N/3635E) and Shalatein (2310N/3532E). The swarms varied in sized from 10-60 sq. km. Control operations were immediately undertaken although many of the swarms split up and some continued east across the Red Sea. By the end of the month, some of the swarms had started to mature. More than 11,000 ha were treated.

#### **• FORECAST**

*A few more swarms may appear from the south on the south-eastern coastal plains during periods of southerly winds in the coming weeks. Most of the swarms are expected to continue east across the Red Sea while a few may remain in green areas, mature and lay eggs or move northwards along the coast.*

### **Yemen**

#### **• SITUATION**

Low numbers of solitarious mature adults were seen at four locations on the Red Sea coastal plains near Wadi Hayran (1615N/4300E) on 18-19 December and at two places west of Bajil (1458N/4314E) on the 30th. No locusts were seen elsewhere along the Red Sea coastal plains or along the Aden coastal plains during the month.

During January, no locusts were seen along the Aden coastal plains on the 14-17th.

#### **• FORECAST**

*Small scale breeding is probably in progress in a few places along the Red Sea coastal plains. Consequently, low numbers of hoppers and new adults are expected to be present during the forecast period. There is a moderate risk that these will be supplemented by small swarms appearing on the Red Sea coastal plains from the north and west during the forecast period. Low numbers of adults may be present on the Aden coastal plains and could breed in areas where rains have fallen.*

### **Kuwait**

#### **• SITUATION**

No locusts were reported from October to December.

#### **• FORECAST**

*No significant developments are likely.*

### **Oman**

#### **• FORECAST**

*Low numbers of adults are likely to be present on the Batinah coast and perhaps in Sharqiya where breeding may be in progress in areas of recent rainfall. Consequently, locust numbers may increase during the forecast period. Surveys are recommended.*

### **UAE**

#### **• FORECAST**

*Low numbers of adults are likely to be present on the Fujayrah coast where breeding may be in progress in areas of recent rainfall. Consequently, locust numbers may increase during the forecast period. Surveys are recommended.*

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

#### **• FORECAST**

*No significant developments are likely.*

### **SOUTH-WEST ASIA**

#### **Pakistan**

##### **• SITUATION**

No locusts were reported during December and January.

##### **• FORECAST**

*Low numbers of adults are likely to be present and breeding in a few coastal and interior areas of Baluchistan that received recent rainfall. Consequently, locust numbers are expected to increase during the forecast period. Surveys are recommended to detect any adults and hoppers.*

#### **India**

##### **• SITUATION**

No locusts were reported during December and January.

##### **• FORECAST**

*Only a few solitarious adults are likely to be present and persist in Rajasthan.*



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## Glossary of terms

The following special terms are used in the Desert Locust Bulletin when reporting locusts:

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### Iran

#### • FORECAST

*Low numbers of adults are likely to be present and breeding in the south-east along the Chabahar-Jask coastal plains and interior areas of Iranshahr and Saravan. Consequently, locust numbers are expected to increase during the forecast period in those areas that received recent rainfall. Surveys are recommended to detect any adults and hoppers.*

### Afghanistan

#### • FORECAST

*No significant developments are likely.*



## Announcements

The next session of the FAO Central Region Desert Locust Commission has been rescheduled. It will now be held in Cairo on 28-30 June 1998, preceded by the Executive Committee on 23-25 June.

### 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>

#### SMALL

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

#### MEDIUM

- swarm: 10 - 100 km<sup>2</sup> • band: 2,500 m<sup>2</sup> - 10 ha

#### LARGE

- swarm: 100 - 500 km<sup>2</sup> • band: 10 - 50 ha

#### VERY LARGE

- swarm: 500+ km<sup>2</sup> • 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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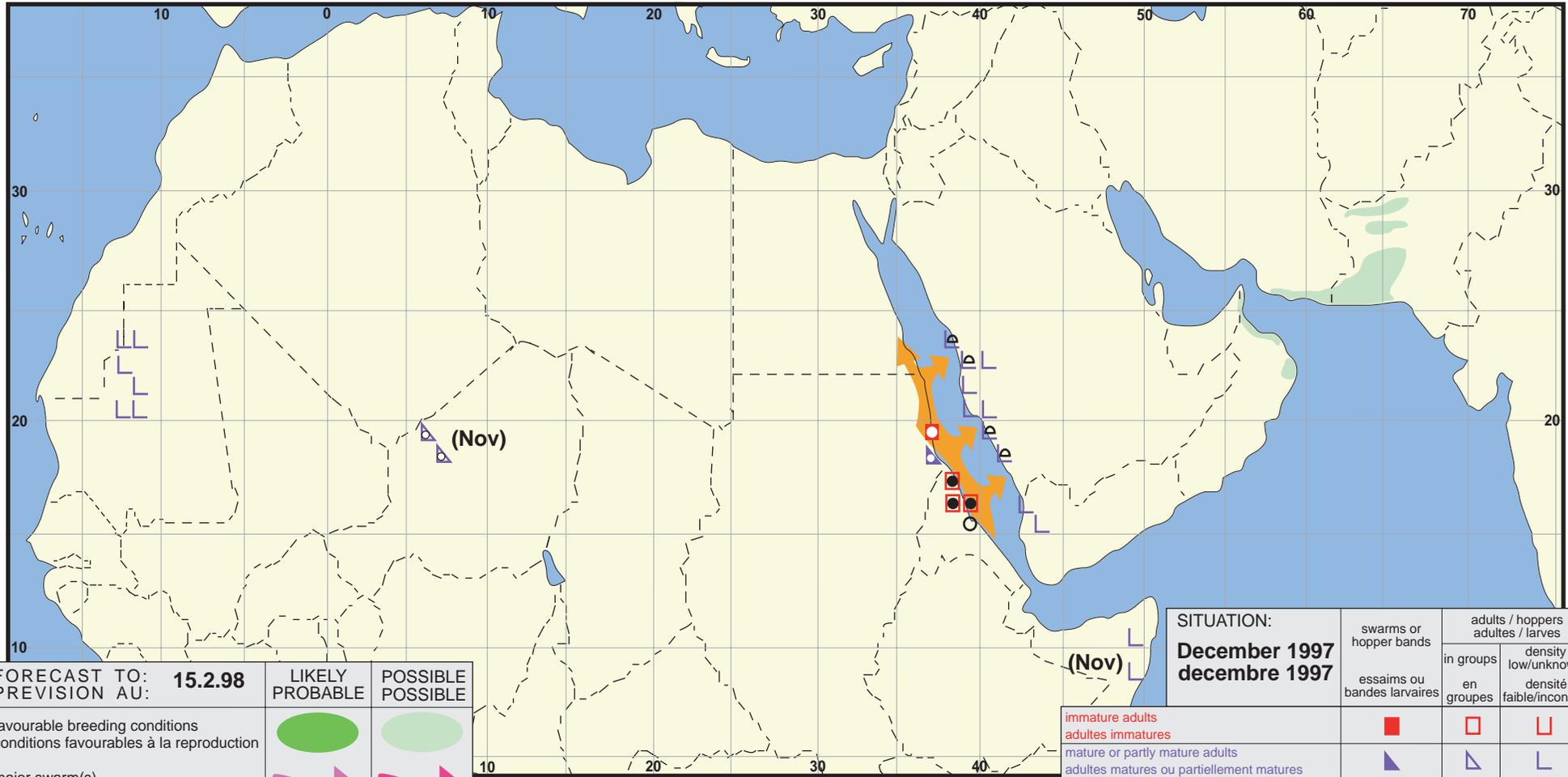
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# Desert Locust summary Criquet pèlerin situation résumée

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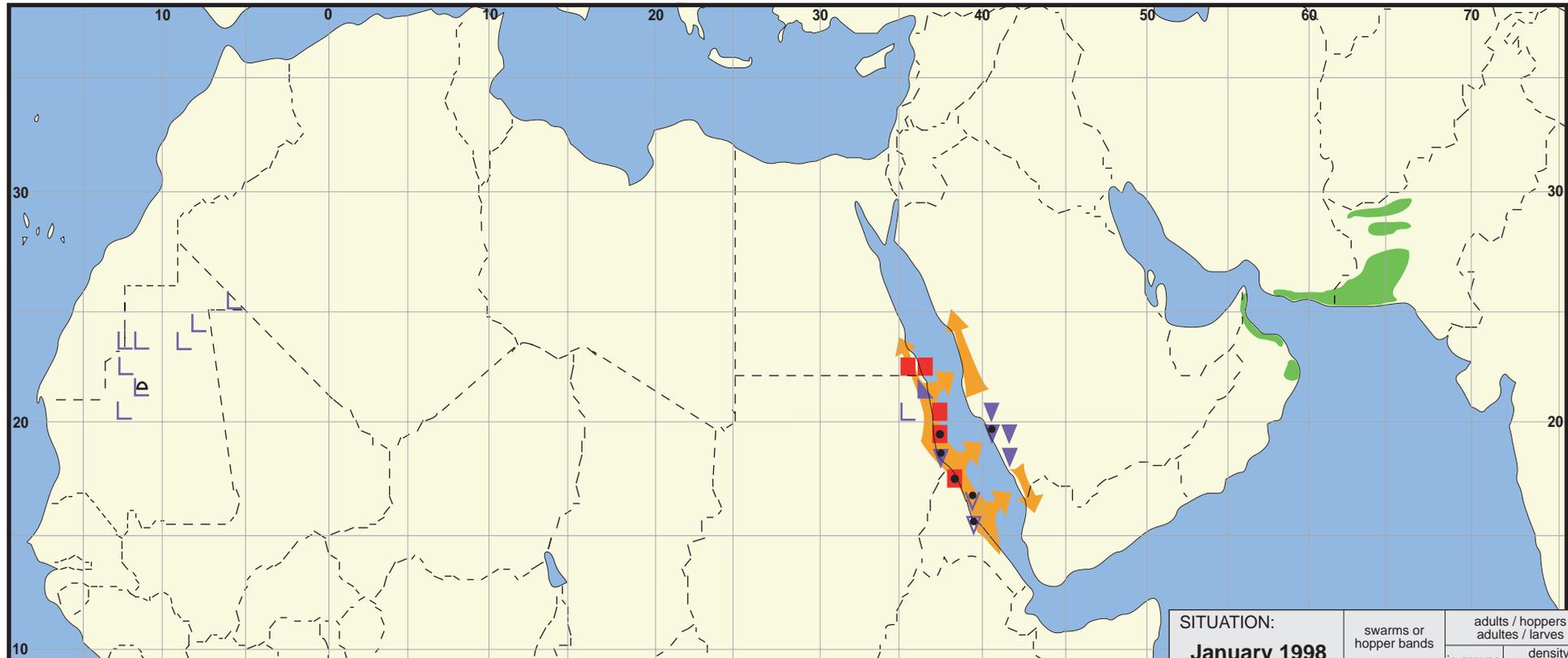
FORECAST TO: PREVISION AU:	<b>15.2.98</b>	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favorables à la reproduction			
major swarm(s) essaim(s) important(s)			
minor swarm(s) essaim(s) limité(s)			
non swarming adults adultes non essaimant			

SITUATION: December 1997 decembre 1997	swarms or hopper bands	adults / hoppers adultes / larves	
	essaims ou bandes larvaires	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)			



# Desert Locust summary Criquet pèlerin situation résumée

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

SITUATION: January 1998 janvier 1998	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)			