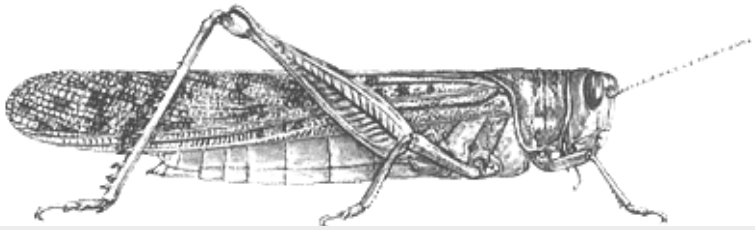

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations

No. 234
(8 April 1998)

General Situation during March 1998
Forecast until mid-May1998

Desert Locust infestations persisted along the Red Sea coastal plains and in northern Somalia during March. Large-scale control operations were carried out in Saudi Arabia and smaller operations were undertaken in Yemen, Eritrea, and Ethiopia. By the end of the month, infestations had declined along the coastal plains although a few small swarms were forming in some places. Unless further rains fall, infestations will continue to decline along the Red Sea plains and adults are likely to move into interior areas in the coming weeks and breed. Breeding is expected to continue in northern Somalia and a few small swarms may move into adjacent countries. Elsewhere, the situation is calm.

Central Region. Aerial and ground control operations treated more than 150,000 ha primarily of hopper bands and a few swarms on the Red Sea coastal plains of **Saudi Arabia**. Smaller ground operations treated about 600 ha of hopper bands and new swarms in adjacent areas of **Yemen**. By the end of the month, most of the vegetation had become dry except for an area near the Yemen and Saudi Arabian border where some swarms were seen forming while others were reported laying. Remaining adults are expected to move into the interior of Saudi Arabia and breed in areas of recent rainfall. Along the western side of the Red Sea, no significant infestations were reported except for a few areas of hopper bands and adult groups on the southern coastal plains of **Eritrea** and **Djibouti**. About 1,800 ha were treated in Eritrea by air. Reports of scattered adults in Asmara and an unconfirmed report of a swarm flying over the coastal foothills north of Assab suggest that adults are moving off the coast into the highlands towards the summer breeding areas. Breeding is in progress in northern **Somalia** where small hopper bands and a few swarms are present. This is likely to continue and may produce groups and small swarms that could move into adjacent areas of Ethiopia, Eritrea, Djibouti, and southern Yemen. So far, two swarms were seen in **Ethiopia** which were being treated.

Eastern Region. Unusually heavy rains fell along the border of **Iran** and **Pakistan** causing severe flooding. Solitarious adults are present in coastal areas of both countries. Numbers are likely to increase as a result of breeding in the coming weeks.

Western Region. Only isolated adults were reported in northern **Mauritania**. Dry conditions prevailed in most areas and no significant developments are expected.

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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No. 234

DESERT LOCUST BULLETIN

Weather & Ecological Conditions in March 1998

Heavy rains fell in Baluchistan of Iran and Pakistan causing floods. Widespread rains fell at times during the month over the Arabian Peninsula. Breeding conditions should be improving in the spring breeding areas in both regions. Mostly dry conditions prevailed in West and North-West Africa.

In the **Near East**, rains fell over the southern Arabian Peninsula on 6-8 March from the Red Sea coast to interior areas near Hail, Saudi Arabia. Rain is also thought to have fallen in western portions of the Empty Quarter. In coastal areas, the rains extended from Hodeidah, Yemen to Mecca, Saudi Arabia; Jizan reported 21 mm, Mecca 33 mm. In interior areas, rains were reported at Najran (13 mm), Dawasir (100 mm), Hail (14 mm), and on the western edge of the Empty Quarter at Sharurah (63 mm). Additional rainfall was reported in Hail at the end of the month, bringing the monthly total to 76. Rainfall was also reported on the southern coast of Yemen on the 7-10th, resulting in flooding in some places; Riyan reported 25 mm. Conditions continue to be favourable for breeding on the Red Sea coastal plains near Jizan and the Yemen border. They are expected to improve in interior areas where low temperatures prevailed during the month. Conditions are drying up on the plains north of Jeddah. In the UAE, good rains fell in Ras Al Khaimah (74 mm) and Sharjah (28 mm). Light showers were reported in northern Oman where conditions are expected to be favourable for breeding along the coastal plains.

In **Eastern Africa**, light rains fell in northern Somalia during the first half of the month. Green vegetation was reported along the coastal plains and drier conditions were present on the escarpment in the interior. Good breeding conditions persisted in coastal areas of Djibouti, extending to the southern plains of Eritrea where light rains fell (Foro, 11 mm). No rains were reported along the Red Sea coastal plains from Massawa to Sudan and Egypt where conditions are either dry or becoming dry. The short rains have started in the highlands of Eritrea. Sporadic rainfall was reported in the Railway Area of Ethiopia near Dire Dawa.

In **South-West Asia**, unprecedented rains during the first few days of March near the Iran/Pakistan border caused floods in all of the major wadis in the Mekran division of Baluchistan, Pakistan including the Kech, Dasht and Nihing Rivers. Widespread damage and loss of life was reported. Other flooding occurred near Iranshahr, Iran. In the Mekran, Jiwani received 77 mm, Turbat 70 mm, Panjgur 37 mm, and Pasni 32 mm. In northern Baluchistan, Nushki reported 35 mm and Dalbandin 22. Near Karachi, Las Bela received 19 mm. More rain fell during the second half of the month at Dalbandin (15 mm) and Nushki (30 mm). Conditions are therefore expected to be favourable for breeding along the coast and in the interior of both countries. Light rains fell in parts of Rajasthan, India during the month where temperatures are high and vegetation is dry.

In **West and North-West Africa**, mainly dry conditions prevailed. Light to moderate rains associated with an eastward-moving depression fell during the last week of the month along the Atlantic coast from Nouadhibou, Mauritania (35 mm) to Dakhla (20 mm) and Agadir, Morocco (27 mm). Light rains fell in a few places on the southern side of the Atlas Mountains in Morocco and Algeria where dry vegetation persisted as a result of increasing temperatures. Conditions were also dry in the central Sahara of Algeria. In Mauritania, localized patches of green vegetation were present in southern Adrar and Tagant but dry soil conditions were not favourable for breeding.

Area Treated

Eritrea	600 ha	(27 February)
	1,200 ha	(25-29 March)
Ethiopia	no details	
Saudi Arabia	154,566 ha	(1-29 March)
Yemen	600 ha	(1-2 March)

Desert Locust Situation and Forecast

WEST AFRICA

Mauritania

• **SITUATION**

During March, low numbers of solitarious adults were present in a few places in the north near Atar (2032N/1308W). There was also a report of a mature group of adults on the 8th further north at Jbeilat (2235N/1113W).

• **FORECAST**

Low numbers of solitarious adults will continue to be present 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.

Niger

• **FORECAST**

Low numbers of solitarious adults may be present 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 February and March.

• **FORECAST**

A few isolated adults may be present in the central and southern Sahara.

Morocco

• **SITUATION**

No locusts were seen in February and March.

• **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 February.

• **FORECAST**

No significant developments are likely.

Libya

• **FORECAST**

No significant developments are likely.

EASTERN AFRICA

Sudan

• **SITUATION**

In early March, a small infestation of hopper bands mixed with groups of mature adults was present in the Tokar Delta. There were no further reports of adult groups arriving in Tokar Delta from the south where conditions are now thought to be dry. By mid month, no further infestations were reported on the Red Sea coastal plains.

• **FORECAST**

No significant developments are likely to occur on the Red Sea coastal plains. Adults and perhaps a few small groups may start to appear in the Kassala area at the end of the forecast period.

Eritrea

• **SITUATION**

In late February, 600 ha of late instar hoppers and fledglings were treated by air in the Shieb area (1544N/3903E) on the 27th.

During March, hopper bands were reported on the southern coastal plains near Thio (1445N/4055E) at mid month. On the 25-29th, aerial control operations treated 1,200 ha of fifth instar hopper bands and fledglings further south near Eddi (1352N/4136E). Similar infestations were reported west of Thio. Scattered mature adults were seen in Asmara (1520N/3855E) suggesting that some adults were starting to move into the highlands towards the summer breeding areas of the western lowlands due to drying conditions on the Red Sea coastal plains. On the 31st, there was an unconfirmed report of a swarm of about 60 sq. km flying south over Afambo (1334N/4132E).

• **FORECAST**

Small infestations may persist on the central and southern Red Sea coastal plains, especially in areas of run-off from rainfall in the highlands. Some adults are likely to appear in the highlands as they move towards the summer breeding areas of the western lowlands. These may be supplemented by other adult groups and small swarms that could appear from Djibouti and north-western Somalia.

Somalia

• **Situation**

Scattered maturing adults and three small swarms of low to medium density were seen during surveys in coastal and subcoastal areas near Berbera (1028N/4502E) on 28 February to 4 March. A few small bands of early and late instar hoppers were also seen as well as early instar solitary hoppers. Low numbers of solitarious immature and mature adults were present on the escarpment and high plateau between Burco (0932N/4532E) and Celfweyne (0956N/4713E) on 15-19 March.

• **Forecast**

Breeding is expected to continue primarily in coastal areas and near the escarpment from the Djibouti border to Las Koreh, and to a lesser extent on the high plateau. This is likely to lead to the formation of hopper bands and small swarms during the forecast period. Most of the adults will probably remain as long as conditions continue to be favourable but some of them could move north across the Gulf of Aden, west towards Ethiopia, or north-west towards Djibouti and Eritrea.

Djibouti

• **Situation**

Additional details received about infestations in the northern region reported in the last bulletin indicate that hopper bands, fledglings and immature adults were present at the end of February along the coastal plains from Sagalo (1140N/4244E) to Kalaf (1146N/4247E) and from Goh (1214N/4314E) to Khor Angar (1222N/4322E). In early March, small patches of second to third instar bands and fledglings were seen near Tadjoura (1149N/4256E) and Obock (1159N/4320E).

• **Forecast**

A few small groups and swarms are likely to form along the northern coastal plains in areas of recent breeding. These may be supplemented by similar populations coming from north-western Somalia. As conditions become dry, adult groups and perhaps a few swarms are expected to move towards the north-west.

Ethiopia

• **Situation**

Two swarms were reported in the Eastern Region on 24 March. The first swarm was seen near Jijiga (0916N/4246E) on 10 ha and consisted of immature adults. The second was seen flying nearby at 0940N/4300E, covering an estimated area of about 8 sq. km. These are thought to have originated from breeding in adjacent areas of northern Somalia. Aerial control operations began the following day.

• **Forecast**

Scattered adults and perhaps a few small groups or swarms may appear from the east and breed in areas of recent rainfall near Dire Dawa and Jijiga. Similar infestations may also appear in the Danakil and northern highlands.

Kenya, Tanzania and Uganda

• **Forecast**

No significant developments are likely.

NEAR EAST

Saudi Arabia

• **Situation**

During March, third to fifth instar hopper bands were present along the Red Sea coast. The majority of the infestations were present on the southern plains between Qunfidah (1905N/4103E) and Jizan (1656N/4233E) with smaller populations on the central coast between Rabigh (2255N/3901E) and Lith (2017N/4008E). By the end of the month, some of these started forming immature swarms. Aerial and ground control operations involving 60 teams, four aircraft and one helicopter treated about 146,000 ha of bands and 5,000 ha of immature swarms. In the northern interior, an immature swarm of about 1 km in size was seen near Al-Jawf (2950N/3954E) on the 13th, which is thought to have come from the Red Sea coast of Egypt. Another immature swarm was treated west of Hail (2731N/4145E). On 18-28th, there were seven reports of mature swarms copulating and laying eggs in the Jizan area and two in the Qunfidah area. The swarm densities varied from 20-75 per sq. m. and sizes were estimated to be about 2-25 sq. km. Control operations treated 3,200 ha.

• **Forecast**

Locust infestations are expected to decline further on the Red Sea coastal plains because of control operations and drying of vegetation. Any adults that escape control will form small groups and swarms that are likely to move east and north-east towards the spring breeding areas of the interior, primarily Hail, Najran and Dawasir. Upon arrival, they will mature and lay eggs in areas of recent rainfall. These will hatch during the forecast period and hoppers and bands should appear. There is a low possibility that small

band formation will occur in the Jizan area from laying that occurred in late March.

Egypt

• **SITUATION**

No locusts were seen during surveys carried out in mid March on the coastal plains of the Red Sea.

• **FORECAST**

No significant developments are likely.

Yemen

• **SITUATION**

On the Red Sea coastal plains, ground control operations continued against hopper bands of mixed instars, fledglings and immature adults groups and swarmlets during the last week of February and first week of March. Most of the infestations were present in several wadis west of Abs (1601N/4312E). Operations were also carried out against immature adult groups east of Hodeidah near Al Qutay (1454N/4312E). On the 18th, adults groups were seen laying near Midi (1619N/4249E). At the end of the month, first instar solitary hoppers at densities up to 200 per sq. m were starting to form groups at the above area. One mature swarm at a density of 11-15 adults per sq. m was seen copulating north of Midi near the Saudi Arabian border on the 30th. Only isolated solitarious adults were seen scattered south of Midi to Abs and near Al Qutay.

On the coastal plains west of Aden, solitarious hoppers of all instars and fledglings were present on 10 ha at Gabaleh (1253N/4447E) on the 10th. By the end of the month, only low numbers of solitarious fledglings and mature adults were reported at a few places west of Aden.

• **FORECAST**

Small groups and bands of hoppers will form near Midi early in the forecast period. Elsewhere, locust numbers will decrease along the Red Sea coastal plains because of drying vegetation. Adults are expected to move east towards the interior spring breeding areas where they may lay in areas of recent rainfall. Locust numbers are likely to decrease on the coastal plains of the Gulf of Aden. There is a low risk of a few adult groups or small swarms appearing on these plains from northern Somalia.

Kuwait

• **SITUATION**

No locusts were reported during February.

• **FORECAST**

No significant developments are likely.

Oman

• **SITUATION**

No locusts were reported up to 3 March.

• **FORECAST**

Low numbers of adults are likely to be present in a few places along the Batinah coast and perhaps in Sharqiya where breeding may be in progress in areas of recent rainfall. These may be supplemented by adults appearing from the west. Consequently, locust numbers are likely to increase during the forecast period. Surveys are recommended.

UAE

• **SITUATION**

No locusts were reported in January and February.

• **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. These may be supplemented by adults appearing from the west. 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**

During the second fortnight of February, low numbers of solitarious adults at densities up to 6 per location were seen in coastal areas of Baluchistan near Turbat (2600N/6306E), Pasni (2513N/6330E) and Uthal (2548N/6640E).

During March, locusts persisted in the above areas and new infestations were reported on the coast near Gwadar (2509N/6221E) during the first fortnight and in the interior near Kharan (2832N/6526E) during the second fortnight. Densities remained low.

• **FORECAST**

Locust numbers will increase as a result of small scale breeding that is expected to occur in coastal and interior areas of Baluchistan where heavy rains fell last month. Consequently, hoppers should appear during the forecast period.

India

• **SITUATION**

No locusts were reported during the second fortnight of February and first fortnight of March.

• **FORECAST**

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

Iran

• **SITUATION**

Isolated immature adults were present at several places along the south-eastern coastal plains at the base of the foothills near the Vashnum Plains (2536N/6050E) on 10 February. During the first half of March, small scale breeding was in progress on the coastal plains east of Chabahar (2518N/6038E) and on the Vashnum Plains where hoppers were present at densities of 1-3 per bush. Immature and mature adults were also reported at densities up to about 200 per ha. Lower densities of maturing adults were seen at several places along the coastal plains west of Chabahar to Zarabad (2534N/5922E). No locusts were seen during surveys in February and March in the Bushehr coastal area of south-western Iran.

• **FORECAST**

Small scale breeding will continue along the south-eastern coastal plains between Jask and the Pakistan border and is likely to extend into the interior areas of Iranshahr and Saravan. This may be supplemented by adults appearing from the west. Consequently, locust numbers will increase during the forecast period in those areas that have received recent rainfall.

Afghanistan

• **FORECAST**

No significant developments are likely.

Announcements

The DLCC Technical Group meeting has been rescheduled for 29 September to 1 October in Rome.

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

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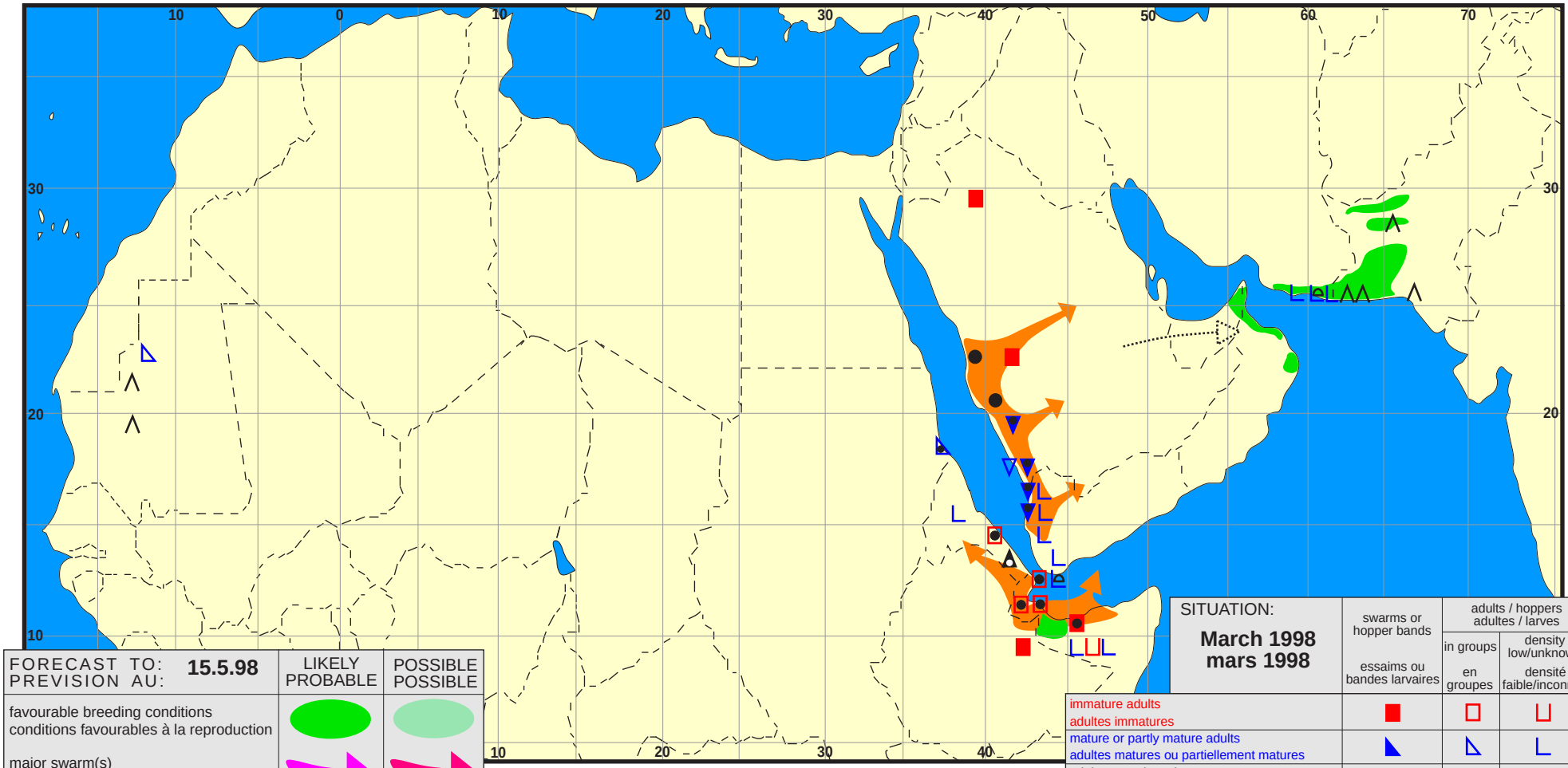

FORECAST TO: PREVISION AU: **15.5.98**	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favourables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: **March 1998 mars 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)			