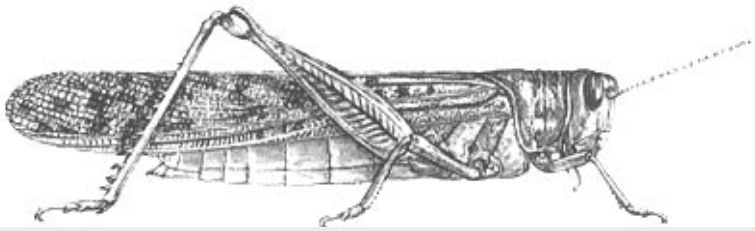

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations

No. 221
(4 Feb 1997)

General Situation during January 1997 Forecast until mid-March 1997

Infestations of immature Desert Locust swarms declined in Morocco as a result of continuing control operations during January. Some of those that escaped control are expected to persist while others may move towards the Moroccan-Algerian border as temperatures increase. Small scale laying and hatching are likely to occur by the end of the forecast period. In northern Mauritania, low numbers of solitary adults were present and nomads reported a few swarms. In the Red Sea area, scattered adults persisted in some coastal areas but breeding so far has been limited to just a few areas due to poor rainfall.

- **Western Region**

In southern **Morocco**, aerial and ground control operations continued against immature swarms south of the Atlas Mountains. So far, there have been no reports of swarms or damage in the Souss Valley. Current infestations are still limited to a small area near the coast. By the end of the month, there were no new sightings which suggests that adults may have dispersed along the southern side of the Atlas Mountains. In **Algeria**, only scattered adults were reported in western and central regions. In **Mauritania**, low numbers of solitary immature adults persisted in the north-west and north. Nomads reported seeing immature swarms flying north towards Morocco in late December and early January. Adults are expected to mature and lay eggs during the forecast period in areas of recent rainfall.

- **Central Region**

Along both sides of the Red Sea, breeding conditions remained generally unfavourable as a result of little rainfall since November. However, small scale breeding is in progress in areas of recent rainfall on the central coast of **Saudi Arabia** and perhaps in **Sudan** which has produced low numbers of hoppers.

- **Eastern Region**

Although no significant locust infestations were reported, scattered adults may be present in coastal and interior areas of Baluchistan in **Iran** and **Pakistan**. Some of these areas have received recent rainfall which could allow small scale breeding to occur during the forecast period.

Weather & Ecological Conditions during Jan 1997

Above average rains fell over the northern Arabian Peninsula and Persian Gulf, extending to coastal and interior areas of Baluchistan in Iran and Pakistan. Good rains also fell along the western coast of Morocco and in some places along the southern side of the Atlas Mountains. Conditions are favourable for breeding in Morocco and in a few places along the Red Sea coastal plains.

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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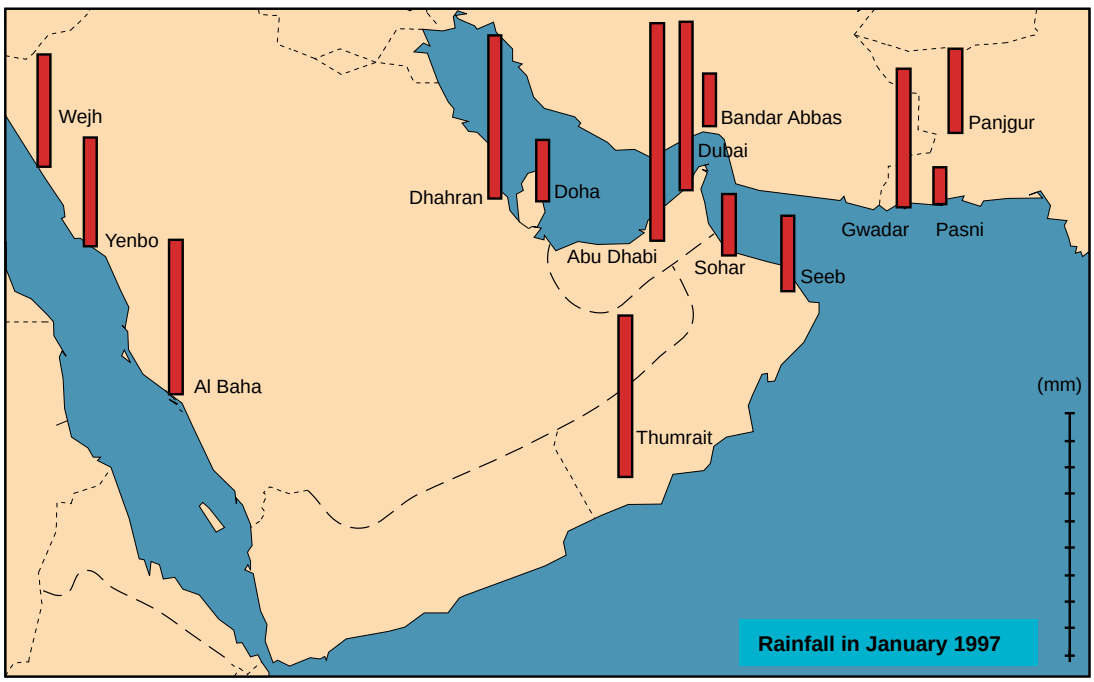
[for text only: gopher://gopher.fao.org]

A number of Mediterranean depressions over **North-West Africa** passed along the northern coast, producing significant amounts of rain on the coast of Morocco (Tan-Tan: 40 mm, Sidi Ifni: 37 mm, Errachidia: 30 mm, Laayoune: 46 mm). There was less rain on the southern side of the Atlas Mountains (Ouarzazate: 7 mm). The depressions gave rain further east in the northern part of Algeria, Tunisia and Libya. In the second half of the month, some depressions did not follow the northern coast but veered south-eastward, producing rains in the southern part of Algeria, Libya and further south. The winds in the northern part of the region were variable during the passage of the depressions; daytime temperatures ranged between 15-22C. In the southern part, the winds were generally from the south, with daytime temperatures between 23-30C. The vegetation is reported to be green along the west coast of Morocco between Laayoune and Agadir and in the Oued Draa.

In **West Africa**, the ITCZ was generally located between 6-13N with prevailing winds from the east to north-east close to the convergence zone over most of the region. Winds near the coast of Mauritania were southerly when depressions influenced the weather. Temperatures generally ranged from 22-30C during the day and between 6-16C during the night. During the second half of the month, two depressions coming from the Atlantic coast moved east, penetrated into the northern part of Mali, Niger and north-western Chad, and produced light rains (Bir Mogrein: 13 mm, Zinder: 6 mm, N'Guigmi: 22 mm). The soil is reported to be dry and the vegetation green in parts of northern Mauritania. In areas where it has rained the ecological situation is expected to improve.

In **East Africa**, winds over the interior of Sudan were generally from the north and the country stayed dry, except for Port Sudan on the coast in the beginning of the month (40 mm). On most days, the coastal plains of the Red Sea in Ethiopia, Eritrea and Djibouti had winds from the sea and a low cloud cover which produced little or no rain. Convective clouds over southern Ethiopia resulting from a convergent area may have produced localised rains. In the last dekad of the month, some cold clouds extending north-eastward to the Central Region produced light rain in Ethiopia (Dire Dawa: 5 mm) and probably in Djibouti and north-western Somalia but no reports were received from the latter countries. The daytime temperatures in the region were in the high twenties. In Sudan, the vegetation is reported to be green in the Tokar Delta while further south in Eritrea, vegetation and soil are dry.

In the **Near East**, prevailing winds over the southern Red Sea coast of Egypt were from the sea and daytime temperatures were between 20-25C. Some rain may have fallen in this area from cold clouds although none was reported. The vegetation in south-east Egypt is reported to be green. Cold clouds passing eastward, associated with depressions in the upper air, produced



above average rainfall over the Arabian Peninsula and the Persian Gulf on the 5th and in the last half of the month (Rafha: 30 mm, Wejh: 42 mm, Dhahran: 61 mm, Dubai: 63 mm, Abu Dhabi: 81 mm, Khassab: 68 mm and Thumrait: 60 mm). Daytime temperatures along the southern Arabian coast were in the low twenties and winds were north-easterly along the coast, veering to south-east over the southern interior. The vegetation along the Red Sea coastal plains of Saudi Arabia between Yanbu and Al-Lith is green and the soil is wet. The vegetation and soil along the Red Sea coastal plains and the Gulf of Aden in Yemen are reported to be dry.

Winds over **South-West Asia** were variable with temperatures ranging from 14 to 21C during the day, and 10-15C during the night near the coast of Baluchistan and 1-5C in the interior. A number of upper-air troughs passing over the region produced light to moderate rainfall (Bandar Abbas: 20 mm, Gwadar: 52 mm, Pasni: 14 mm, Panjgur 32 mm). Consequently, vegetation is expected to be greening in the above areas.

Area Treated

Morocco	31,827 ha	(16-31 December)
	7,423 ha	(1-15 January)

Desert Locust Situation and Forecast

WEST AFRICA

Mauritania

• **SITUATION**

Reports continued to be received of several immature swarms moving towards the north and north-west from south-western Adrar region in late December and in early January. However most of the infestations present during January were small and insignificant, consisting of isolated and scattered immature and maturing solitary adults. These were primarily concentrated south of Atar (2031N/1303W) in south-western Adrar region and some were also present further north in the Tiris Zemmour region near Zouerate (2244N/1221W) and in the El Hank area. Nomads reported seeing an immature swarm on the coast south of Nouakchott in early January, another one near Magta Lahjar (1730N/1308W) on the 12th, and a few more in south-western Adrar flying north on 17-22nd. No control operations were required during January.

• **FORECAST**

Low numbers of adults will persist and slowly mature in parts of Adrar, Inchiri and Tiris-Zemmour. Some of these could start to lay eggs by the end of the forecast period in areas where rainfall occurs.

Mali

• **FORECAST**

Isolated adults may be present and will persist in some parts of the Adrar des Iforas.

Niger

• **FORECAST**

Isolated adults may be present and will persist in a few areas of central Tamesna and perhaps in Air.

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

• **FORECAST**

No significant developments are likely.

NORTH-WEST AFRICA

Morocco

• **SITUATION**

During the second half of December, there was as an increase in aerial and ground control operations against locust infestations south of the Atlas Mountains. The infestations were concentrated in the Goulimime (2856N/1004W) and Tata (2944N/0756W) areas and consisted of low density immature swarms, at densities of 2-10 adults per sq. metre, and varying in size from 20-3,000 ha. A total of 31,827 ha were treated during the period.

During the first half of January, control operations continued but on a reduced scale as infestations declined in the above areas. Many of the swarms had dispersed and infested areas were smaller, varying from one to 1,500 ha at densities of up to 9 adults per sq. m. A total of 7,423 ha were treated by air and ground. No locusts were reported during the second half of the month indicating that infestations have declined and probably dispersed along the southern side of the Atlas Mountains.

• **FORECAST**

Low numbers of swarms are expected to persist in the Goulimime - Tata area while others could move further east and north-east along the southern side of the Atlas Mountains towards the Algerian border as

temperatures increase. Adults will mature and, by the end of the forecast period, small scale laying and hatching could occur in areas of recent rainfall.

Algeria

• **SITUATION**

A late report stated that nomads saw a group of immature adults flying near Tindouf at 2847N/0641W on 29 December.

During the first half of January, scattered solitary and transiens adults, at densities up to 30 per ha, continued to be reported from a few locations west of the Hoggar Mountains in the Ahnet-Mouydir area of the central Sahara. Infested areas were very small and not considered to be of significance. A few individual gregarious immature adults were seen near Tindouf (2742N/0810W) and in the Ahnet-Mouydir area. Similar infestations were reported during the second half of the month, but at much lower densities.

• **FORECAST**

There is a moderate risk of immature adults and a few small swarms appearing south of the Moroccan border between Tindouf and Bechar. Similar populations may also appear south of Tindouf from adjacent areas in northern Mauritania but on a smaller scale. Low numbers of adults are expected to persist in a few places of the central and southern Sahara. Adults will mature and, by the end of the forecast period, small scale laying and hatching could occur in the above areas if rains fall.

Tunisia

• **FORECAST**

Scattered adults may be present in a few places of the south where they could breed in areas of recent rainfall.

Libya

• **FORECAST**

Scattered adults may be present in a few places of the west and north-west where they could breed in areas of recent rainfall.

EASTERN AFRICA

Sudan

• **SITUATION**

A late report stated that solitary first to third instar hoppers mixed with *Locusta* were present at densities of 2-3 hoppers per bush within an area of 210 ha in the Bahrera Basin (1816N/3738E) of Tokar Delta on 17 December. A few solitary mature adults were seen on the coastal plains between Tokar Delta and Suakin during the last dekad of the month. No locusts were seen during surveys on the northern coast at mid month.

In January, no locusts were seen during surveys in the Tokar Delta up to the 14th.

• **FORECAST**

Low numbers of adults will persist in the Tokar Delta and in a few places along the Red Sea coastal plains south to Karora and north to Suakin. Breeding could continue during the forecast period in areas of recent rainfall on the central coast. Isolated adults may be present further north towards the Egyptian border and in adjacent interior areas of Wadi Oko/Diib.

Eritrea

• **SITUATION**

No locusts were reported on the Red Sea coastal plains up to 20 January.

• **FORECAST**

Isolated adults may be present in a few places along the Red Sea coastal plains between Massawa and Karora. Breeding conditions are dry and laying is not likely unless additional rainfall occurs during the forecast period.

Ethiopia

• **SITUATION**

No locusts were seen during surveys carried out in the eastern and south-eastern regions from 29 December to 6 January.

• **FORECAST**

No significant developments are likely.

Somalia

• **FORECAST**

Isolated adults are expected to persist along some parts of the north-west coastal plains and adjacent areas of the interior.

Djibouti, Kenya, Tanzania and Uganda

• **FORECAST**

No significant developments are likely.

NEAR EAST

Saudi Arabia

• **SITUATION**

Isolated maturing solitary adults were seen during January at several places along the Red Sea coastal plains between Al Lith (2010N/4020E) and Badr Hunayn (2343N/3850E). Most of the infestations were concentrated near Jeddah. Small scale breeding was reported in a few of these places near Badr Hunayn and

Al Lith where third to fifth instar hoppers and fledglings were present in late January.

• **Forecast**

Small scale breeding will continue along the central Red Sea coast. As a result, low numbers of solitary hoppers and new adults will appear throughout the forecast period. Similar populations may be present on the northern coastal plains near Al-Wajh and on the southern plains near Jizan.

Yemen

• **Situation**

No locusts were seen during surveys carried out on the southern coastal plains east and west of Aden and on the Red Sea coastal plains north and south of Hodeidah from 6-23 January.

• **Forecast**

Isolated adults are likely to be present in a few places along the coastal plains of the Red Sea and Gulf of Aden. Breeding may occur in areas of recent rainfall and, as a result, scattered hoppers may appear during the forecast period.

Egypt

• **Situation**

Isolated adults, up to 10 per location, were present in a few places in the south-east along the Red Sea coastal plains and in several wadis between Halaib (2212N/3635E) and Shalatein (2308N/3536E) during the first half of January. No locusts were seen during surveys in the Nile River Valley.

• **Forecast**

Low numbers of adults are expected to persist and breed on the southern Red Sea coastal plains and in adjacent interior areas. As a result, scattered hoppers are likely appear during the forecast period.

Oman

• **Forecast**

Low numbers of adults may be present in some areas of the Batinah coast between Seeb and Sohar, and perhaps in Sharkiya and in the Musandam Peninsula. These may start to lay eggs by the end of the forecast period in areas of recent rainfall.

UAE

• **Forecast**

Low numbers of adults may be present in some areas of the Fujayrah coast. These may start to lay eggs by the end of the forecast period in areas of recent rainfall.

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

• **Forecast**

No significant developments are likely.

SOUTH-WEST ASIA

Pakistan

• **Situation**

No locusts were reported during January.

• **Forecast**

Low numbers of adults may be present in coastal and interior areas of Baluchistan. Scattered hoppers may appear in some places as a result of laying and hatching during the forecast period.

India

• **Situation**

No locusts were seen during surveys carried out in January.

• **Forecast**

Low numbers of solitary adults may persist in a few places of Rajasthan.

Iran

• **Forecast**

Low numbers of adults may be present in coastal and interior areas of Baluchistan. Scattered hoppers may appear during the forecast period as a result of laying and hatching in areas of recent rainfall.

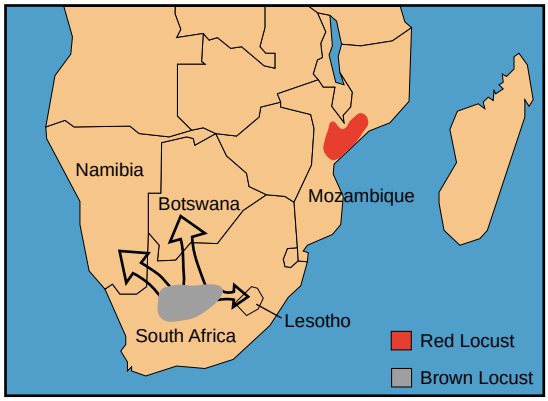
Afghanistan

• **Forecast**

No significant developments are likely.

Other Species & Announcements

Red Locust in Mozambique. As a result of successful breeding during the past year, an outbreak has been slowly developing in the northern region. Ground control operations during December and January have greatly reduced hopper band populations in Manica and Sofala provinces. The small hopper bands that are still present on the Buzi plains will probably fledge and start to form new swarms from late February onwards. The scale of the outbreak this year



is expected to be moderate. Survey and control operations are hampered by standing water and muddy areas as a result of a cyclone in late January.

Brown Locust in South Africa. A major plague is currently developing in the central and western Karoo. So far, control operations have treated 40,000 hopper bands and 2,000 adult swarms produced in the first generation of breeding. There is a high risk of swarms invading Botswana, Namibia and Lesotho if good rainfall occurs in the coming months.

Desert Locust Interactive Mapper. The Locust Group has developed an application on the InterNet which allows the user to select a time period and different types of locust infestations for display on a map that can printed. The data is continuously updated on a regular basis. You can visit this site at: http://193.43.36.11/mapper/

FAO Desert Locust Control Committee (DLCC). The 34th session of the Desert Locust Control Committee will be held at FAO Headquarters on 24-28 February 1997.

FAO Commission for Controlling the Desert Locust in SW Asia. The 3rd session of the Executive Committee will be held at FAO Headquarters on 3-5 March 1997.

Vernon Joyce. We regret to announce the death last month of R.J.V. Joyce, formerly in charge of Desert Locust Survey and Control (now DLCO-EA), and best known for his operational research on ULV spraying. We wish to express our condolences to his family and his government.

Glossary of terms

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

NON-GREGARIOUS ADULTS AND HOPPERS

ISOLATED (FEW)

- very few present and no mutual reaction occurring;
- 0 - 1 adult per 400 m foot transect (or less than 25 per ha).

SCATTERED (SOME, LOW NUMBERS)

- enough present for mutual reaction to be possible but no ground or basking groups seen;
- 1 - 20 adults per 400 m foot transect (or 25 - 500 per ha).

GROUP

- forming ground or basking groups;
- more than 20 adults per 400 m foot transect (or more than 500 per ha).

ADULT SWARM AND HOPPER BAND SIZES

VERY SMALL

- swarm: less than 1 km^2 • band: 1 - 25 m^2

SMALL

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

MEDIUM

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

LARGE

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

VERY LARGE

- swarm: 500+ km^2 • band: 50+ ha

RAINFALL

LIGHT

- 1 - 20 mm of rainfall.

MODERATE

- 21 - 50 mm of rainfall.

HEAVY

- more than 50 mm of rainfall.

OTHER REPORTING TERMS

BREEDING

- the process of reproduction from copulation to fledging.

SUMMER RAINS AND BREEDING

- July - September/October

WINTER RAINS AND BREEDING

- October - January/February

SPRING RAINS AND BREEDING

- February - June/July

DECLINE

- a period characterised by breeding failure and/or successful control leading to the dissociation of swarming populations and the onset of recessions; can be regional or major.

OUTBREAK

- a marked increase in locust numbers due to concentration, multiplication and gregarisation which, unless checked, can lead to the formation of hopper bands and swarms.

PLAGUE

- a period of one or more years of widespread and heavy infestations, the majority of which occur as bands or swarms. A major plague exists when two or more regions are affected simultaneously.

RECESSION

- period without widespread and heavy infestations by swarms.

REMISSION

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

UPSURGE

- a period following a recession marked initially by a very large increase in locust numbers and contemporaneous outbreaks followed by the production of two or more successive seasons of transient-to-gregarious breeding in complimentary seasonal breeding areas in the same or neighbouring Desert Locust regions.

issued: 4 February 1997

Desert Locust summary
Criquet pèlerin situation résumée

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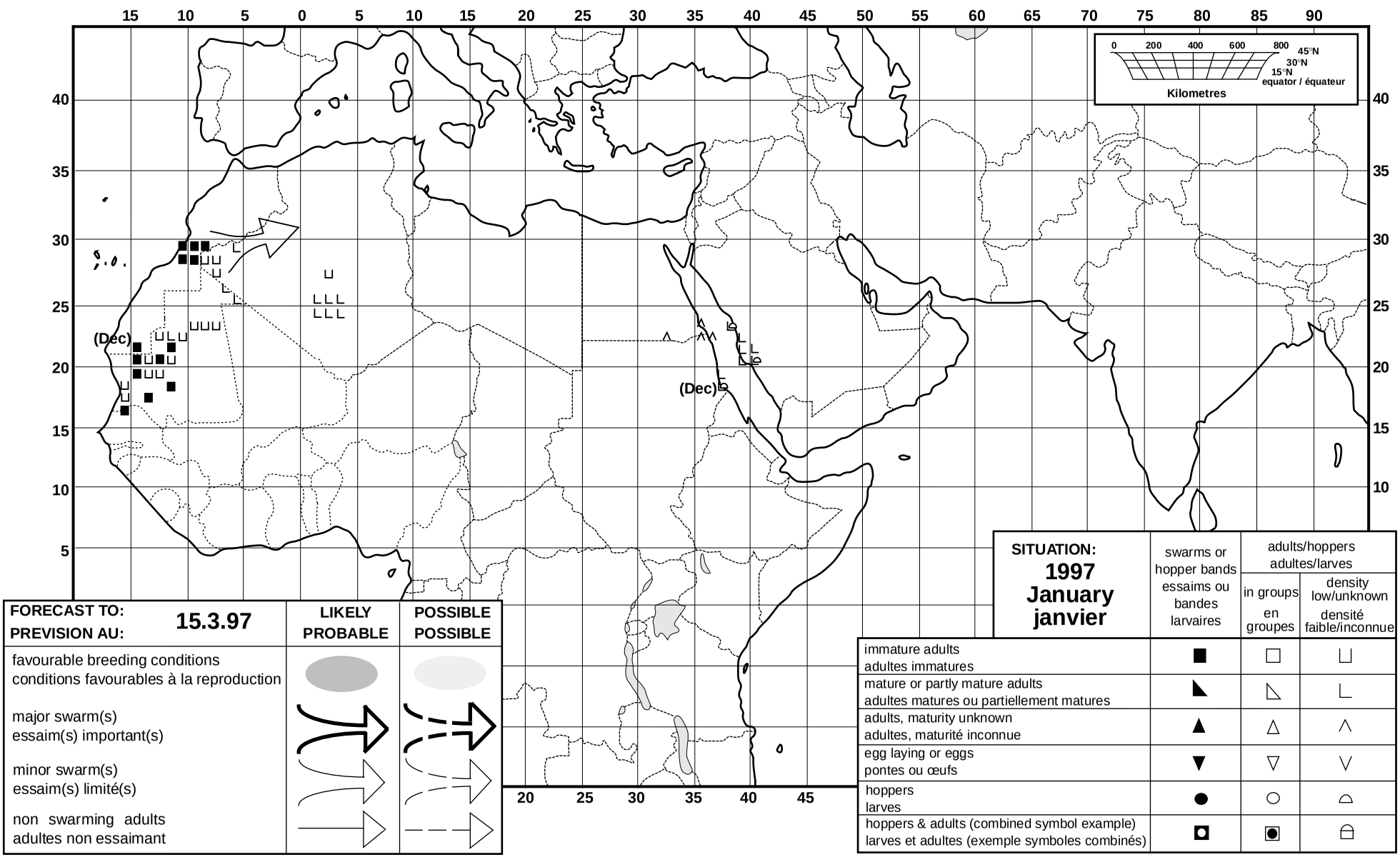

FORECAST TO: / PREVISION AU: 15.3.97	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favourables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: 1997 January janvier	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	▼	▽	V
hoppers larves	●	○	⌓
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)	◘	◙	⌓