



FAO



EMERGENCY CENTRE FOR LOCUST OPERATIONS

DESERT LOCUST BULLETIN No. 197



The locust situation remains extremely serious in two primary areas: the Red Sea Trench and North-West Africa. Survey and control operations are in progress primarily in Saudi Arabia and Mauritania and to a lesser extent in adjacent areas of Morocco, Algeria, Egypt and Sudan. Nevertheless, those swarms and hopper bands that escape detection and control will continue to mature and are expected to move into traditional spring breeding areas along the Moroccan/Algerian border and in the northern interior of Saudi Arabia.

In northern Mauritania, maturing swarms continued to move further north during January reaching the Moroccan and Algerian borders. Swarms were present over a wide and very remote area and only limited ground control operations could be undertaken. Many were seen laying in areas in which locusts have not been previously reported. As temperatures increase after about mid February, those swarms escaping detection and control are expected to move towards the southern side of the Atlas Mountains of Morocco and Algeria and to start lay in areas that receive rainfall.

In the Red Sea Trench, swarms were seen along the Sudanese / Egyptian border and additional reports were received of swarms landing on the coastal plains of Saudi Arabia and laying where hoppers have already hatched and formed bands. Ground and aerial control operations are in progress within an estimated area of 8,500 sq. km on the Saudi Arabian coastal plains. However, new swarm formation is expected to occur during the forecast period and these swarms are likely to move towards the northern interior of Saudi Arabia.

There were reports of locusts in the Western Desert of Egypt and in adjacent areas of south-eastern Libya. The exact origin of these adults is uncertain; they may have originated from previous breeding in north-eastern Chad or northern Sudan.

Elsewhere no significant infestations of locusts were reported.

The FAO Desert Locust Bulletin is issued monthly, supplemented by Updates during periods of increased Desert Locust activity, and is distributed by fax, telex, e-mail, FAO pouch and airmail by the Emergency Centre for Locust Operations, AGP Division, FAO, 00100 Rome, Italy.

Telephone: (39-6) 522-52420 or -54578 (7 days/week, 24 hr)

Facsimile: (39-6) 522-55271

E-Mail: Abderrahmane.Hafraoui@fao.org (via Internet)

Telex: 610181 FAO I



WEATHER & ECOLOGICAL CONDITIONS DURING JANAUARY 1995

Based on field reports, METEOSAT and ARTEMIS satellite imagery, and Météo-France synoptic and rain data. Rainfall terms: light = less than 20 mm of rain; moderate = 20 - 50 mm; heavy = more than 50 mm.

During most of first half of January, a high pressure system was present over the Atlantic off the western coasts of Europe and Morocco. Further east, a low pressure system oscillated between the northern-central and north-eastern Mediterranean. Further south, there was a high pressure system over the Hoggar Mountains of Algeria during the first days of the month. As a result of these systems, strong cold north-easterly winds prevailed over Morocco, Mauritania, Mali, Niger and southern Algeria up to the 13th. By mid-month, an additional series of depressions from the Atlantic Ocean moved across the Mediterranean but further north as a result of a high pressure system located over northern Algeria. Consequently, winds over the infested areas of Mauritania gradually shifted from north-east to east and eventually became southerly winds on the 17-25th. As a result, some additional movement of adults from Mauritania into Morocco may have been occurred during this period. During the rest of the month, another high pressure system was present over the Atlantic Ocean west of Morocco, and north-easterly winds prevailed once again.

No significant rainfall was reported from West Africa and North-West Africa during January. Maximum temperatures varied from 18°C to 25°C in northern Mauritania which may have delayed locust maturation. Green vegetation and moist soil persisted primarily in low-lying places and areas of run-off. Only light rains fell at a few places north of the Hoggar Mountains during the second decade where conditions remain favourable in some places to allow locusts to persist. Breeding conditions are not favourable south of the Atlas Mountains in Morocco and Algeria as well as in most parts of northern Mali, Niger and Chad.

On the Red Sea coastal plains of Sudan and Eritrea, breeding conditions are favourable in most areas from Port Sudan to Masawa as a result of significant rainfall during December and additional showers during January. For example, Port Sudan recorded 38 mm on 7 January and traces on the 17th. Favourable breeding conditions were reported in south-eastern Egypt but conditions were said to be dry in adjacent areas of north-eastern Sudan. Conditions remain favourable along the Tihama of Saudi Arabia from Jeddah to Yanbu and from Lith to Jizan. Remote sensing imagery suggested that substantial green vegetation was present on the plains near Aitarba, Sudan and near Wadi Dawasar in south-western Saudi Arabia.

In Oman, light rains fell on the north-eastern coast during the first decade of the month. On the 15th, 33 mm of rain was reported from Sur.

Light rainfall was reported during the first fortnight at several locations in Rajasthan and Gujarat of India and near Bahawalpur in Pakistan. In Karachi, 89 mm fell on the 14th.



AREA TREATED IN JANUARY 1995

Algeria	152 ha	(1-20 January)
Egypt	3,700 ha	(18-24 January)
Mauritania	6,547 ha	(21-31 December)
	6,702 ha	(1-20 January)
Niger	100 ha	(2 December)
Saudi Arabia	13,192 ha	(December)



See the last section of this Bulletin for a definition of terms used in reporting the current locust situation.

WEST AFRICA

MAURITANIA

During the last decade of December, control operations were concentrated against late instar hoppers mixed with young immature adults in the north near Ouadane (2056N/1137W) and to a lesser extent near Zouerate where some swarms were treated for the first time. A few hectares of hoppers and immature adults persisted near Atar and limited ground control was undertaken. A few scattered third instar hoppers and adults were present north of Nouakchott in the Tijjrit region where control operations were undertaken earlier in the month. During this decade, 3,400 ha were treated by air and 3,147 ha by ground.

During the first decade of January, hopper infestations continued to mature near Ouadane and to a lesser extent south of Atar. Several immature swarms were reported from these areas and aerial control operations were undertaken on 1,058 ha. However, some swarms moved north towards Zouerate and continued on a larger scale towards the El Hank region in the extreme north-east. Most of the swarms were reported to be mature and in the process of copulating in El Hank to Chaga (2525N/0557W) near the Algerian border and in the Oued El Ma area (ca. 24430N/0830W). A few other swarms reached as far north as Ain Ben Tili (2535N/1052W) near the Moroccan border. Only limited ground control operations could be carried out in these areas, treating a total of 2,074 ha, because the infestations were dispersed over a wide and very remote area.

During the second decade of January, a total of 42 small swarms, ranging in size from 14 to 600 ha at densities up to 100 per sq. m. were reported primarily in El Hank and Oued El Ma areas. A few of these were seen laying in Oued El Ma. Other swarms were seen near Ouadane where there were indications that migration was continuing towards the north-east, and, to a lesser extent towards the north in the Zouerate area. Some swarms may have been observed several times at different locations. Control operations continued against late instar hoppers and maturing swarms near Ouadane, and against swarms in the El Hank and Oued El Ma areas. Elsewhere, scattered adults persisted primarily in western Inchiri and Adrar. During the decade, 3,570 ha were treated by ground teams.

NIGER

A late report stated that infestations of gregarious and transiens adults, at densities up to 10,000 per ha, were seen on 2 December in the Tamesna within 5,000 ha in Wadi Anou Makarene (1806N/0732E), of which 100 ha were treated by ground teams. Scattered adults were reported along the track between Arlit (1845N/0723E) and the Algerian border on 6 December, and mixed infestations of solitary and transiens second to fifth instar hoppers and adults were seen near In Abangharit (1802N/0600E) on the 7-8th.

No locust information was received from other countries in the region up to 31 January.

NORTH-WEST AFRICA

ALGERIA

During the last decade of December, adult infestations were reported primarily in the Mouydir and Asedjrad regions and south-west of the Hoggar mountains. These consisted primarily in scattered immature adults, although 30 ha of adults at a maximum density of 10 per sq. m. were treated in Oued Ahtes (2513N/0326E). Some scattered adults and isolated hoppers were reported from a few places in the Tindouf (2741N/0809W) area during the same period.

During the first decade of January, most of the infestations consisted of low density adults in a few places north of the Assedjrad Mountains where only one area of 61 ha could be found for control. Scattered yellow adults were reported from only one place in the Tindouf area, Djebilet (2646N/0740W) on the 10th.

During the second decade, scattered adults persisted primarily in Adrar Ahenet, and to a much lesser extent at a few places south-west of Tamanrasset and within irrigated crops near Adrar. Maximum densities were up to 10,000 per ha and limited control operations were undertaken on 91 ha.

There was an unconfirmed report of locusts in the western border area with Morocco.

MOROCCO

During the first two decades of January, some small immature and loose swarms were reported primarily along the Mauritanian border in the Bir Guendouz area (2137N/1628W). Two similar swarms were seen south of Gelta Zemmour (2508N/1224W) and scattered adults were present in several locations of the Laayoune (2707N/1312W) area. By the end of the month, scattered adults had reached as far north as the Guelmime area (2833N/1055W) on the 24th and a small immature loose swarm was reported at Al Farcia (2653N/0941W) on the 30th. No control operations were required.

LIBYA

Isolated adults were reported from the extreme south-eastern desert in the Jebel Arknu area (2220N/2440E) on 31 January.

No locust information was received from other countries in the region up to 31 January.

EASTERN AFRICA

SUDAN

Scattered adults were reported at only one location, Khor Balatat (1756N/3823E) during a survey carried out near the Eritrean border on 17 December. Adult and hopper infestations reported in the previous Bulletin (no. 196) in the Wadi Oko/Diib area were forming groups in Wadi Habaiet (2010N/3604E) on the 18th. There were no further reports of locusts from the northern Red Sea up to 27 January, although travellers reported hopper bands near the Egyptian border during the second half of January.

On the southern Red Sea coastal plains, scattered mature adults were present and copulating between Suakin and Tokar and within cropping areas of Tokar Delta from mid December to mid January. On the coastal plains south of Tokar Delta, a swarm was reported at Sibat (1809N/3754E) on 26 December and there was another report of a medium density swarm at Khor Lui (1749N/3729E) on 3 January. Small patches of first and second instar hoppers were present in a few areas along the plains in early January; control teams treated one area of 100 ha.

ERITREA

Mature adults and first to second instar hoppers, mixed with Migratory Locust, were found grouping in several locations within a total of 3,000 ha during a survey carried out on the Red Sea coast in the Erafalle (3918N/1505E) area on 28-31 December.

SOMALIA

There were unconfirmed reports of locusts on the north-western coast.

No locust information was received from other countries in the region up to 31 January.

NEAR EAST

SAUDI ARABIA

In addition to information reported in the previous Bulletin (no. 196), a total of 43 reports of mature swarms in three waves were seen coming from the west on 29 November to 31 December and landing along the Tihama north of Jeddah from south of Rabigh (2248N/3902E) to Rayyis (2334N/3837E) and extending to a lesser extent northwards to the Badr (2344N/3846E) area. Although control operations were immediately undertaken, swarm laying occurred upon arrival and hoppers hatched and formed bands throughout the month. A total of 8,964 ha of swarms and 4,228 ha of bands were treated by air and by ground in December. On the southern Tihama, scattered adults and hoppers, some of them in groups, were present between Lith (2009N/4017E) and Qunfudah (1908N/4105E).

During January, similar infestations continued to be present within the same areas. There were about 50 new reports of small swarms, as well as hopper patches and bands of all instars between Rabigh and Rayyis. By the end of the month, there were three additional reports of swarms at Rayyis, one up to 12 sq. km in size with a density up to 170 adults per sq. m. High densities of hoppers, fledglings and mature adults, up to 20 per sq. m, were reported within a 10 sq. km area along the coastal plains of Qunfudah on the 27-28th. Control operations are in progress.

EGYPT

On 26 December, scattered copulating adults were reported from several places along the south-eastern coast south in the Halaib (2213N/3635) area, near Mersa Alam (2504N/3452E) and in adjacent areas of the interior, as well as one location (2218N/3142E) near the Nile River.

During the second half of January, four mature swarms of moderate density, three of them copulating, were reported within the same area on the 18-24th. Gregarizing adults were reported in the Western Desert at Shark Ouinat (2240N/2845E) on the 22nd; however no locusts were found during a survey on the four days later. Ground control operations were undertaken over 3,700 ha in the Red Sea area.

YEMEN

During December, no locusts were reported from the coastal plains east of Aden at Khabt Al-Bagar (1255N/4422E) on the 12th and in the Shabwah region between Al Hadenh (1428N/4735E) and Bayhan al Qasab (1448N/4543E) on the 6-14th.

IRAQ

No locusts were reported up to 16 January.

No locust information was received from other countries in the region up to 31 January.

SOUTH-WEST ASIA

IRAN

No locusts were reported during surveys near the south-eastern coast of Baluchistan in ten locations of the Chah Bahar area (2525N/6045E) on 20-22 December.

PAKISTAN

No locust activity was reported during the first half of January.

INDIA

No locust activity was reported during the first half of January.

No locust information was received from other countries in the region up to 31 January.



Forecasting terms used in this section to indicate the chances of a particular event happening are indicated below; every term is arranged within each category from most to least probable:

high probability	will, probably, almost certain, likely, expected
medium probability	may, might
low probability	possibly, perhaps, unlikely

WEST AFRICA

MAURITANIA

Swarms will persist in the north while slowly maturing and laying could occur in those areas that remain favourable from Atar to El Hank. Hatching as a result of earlier laying is expected to commence and bands should form during the period. Swarm movements further north will increase as temperatures warm up.

MALI

Small infestations of adults are expected to be present and persist in those areas that remain green along the Tilemsi Valley and in northern Adrar des Iforas and slowly mature.

NIGER

Small infestations of adults are expected to persist in those areas that remain green in Tamesna and slowly mature.

CHAD

Limited infestations of adults are expected to be present and persist in Ennedi near Fada and perhaps in parts of Tibesti near Zouar.

BURKINA FASO, CAMEROON, CAPE VERDE, GAMBIA, GUINEA BISSAU, GUINEA CONAKRY and SENEGAL

No significant developments are likely.

NORTH-WEST AFRICA**ALGERIA**

Current infestations are expected to persist in areas of runoff south and west of the Hoggar Mountains where adults will slowly mature during the period. As temperatures increase, adults and several swarms are expected to appear near the Moroccan border areas south of the Atlas Mountains from mid February onwards and start to lay in areas that receive rainfall.

MOROCCO

Current infestations are expected to persist in coastal and interior areas of the south-west. As temperatures increase, adults and swarms are expected to appear on a moderate scale in the Oued Draa area and along the southern side of the Atlas Mountains near the Algerian border from mid February onwards and start to lay in areas that receive rainfall.

LIBYA and TUNISIA

No significant developments are likely.

EASTERN AFRICA**SUDAN**

Hopper band and swarm formation on a small to moderate scale is expected to occur along the coastal plains from Tokar Delta to the Eritrean border, and to a lesser extent between Tokar and Port Sudan. Additional laying may occur in those areas that remain favourable especially south of Tokar Delta. The situation in the north remains unclear but the possibility of a few swarms in Wadi Oko/Diib cannot be excluded.

ERITREA

Infestations similar to those in Sudan are likely to be present along the coastal plains south of Karora. Hopper band and swarm formation are expected to occur in these areas on a small scale. Lower numbers of hoppers and adults will persist on the coastal plains near Massawa where they may concentrate in areas of favourable vegetation.

SOMALIA

The current situation remains unclear. Conditions are expected to be favourable over large areas of the northern coast. Consequently small to moderate scale breeding could be in progress or occur during the forecast period which could lead to a significant population build-up.

DJIBOUTI

Isolated adults may be present and breeding in areas of recent rainfall.

ETHIOPIA, KENYA, TANZANIA and UGANDA

No significant developments are likely.

NEAR EAST

SAUDI ARABIA

Hopper band and swarm formation are expected to occur along the Tihama plains north of Jeddah and extend inland towards Medinah. These may be augmented by a few swarms appearing from the west. Lower numbers of adults and perhaps some hoppers may be present along the coastal plains between Lith and Jizan. Adults and swarms are expected to move along the coast north and east towards the northern interior in early March and start to lay. Consequently, numbers on the coast may start to decline by the end of the forecast period especially if conditions become unfavourable.

YEMEN

Adult numbers are likely to increase along the northern Tihama where breeding is expected to occur during the forecast period. Infestations will probably remain on a small scale. A few isolated adults may be present along the coastal plains of Aden.

EGYPT

Hopper band and swarm formation is expected to occur on a small scale in some areas along the southern coastal plains and interior near the Sudanese border. Breeding will continue as long as conditions remain favourable.

IRAQ

There is a slight possibility of locusts appearing in the extreme south at the end of the forecast period.

BAHRAIN, ISRAEL, JORDAN, KUWAIT, LEBANON, OMAN, QATAR, SYRIA, TURKEY and UAE

No significant developments are likely during the forecast period.

SOUTH-WEST ASIA

IRAN

Scattered adults are expected to persist along the south-eastern coast of Baluchistan near Chah Bahar.

PAKISTAN

Scattered adults are likely to be present and will persist in some parts of Baluchistan along the coast and in interior areas.

INDIA

Isolated adults may be present and will persist in some parts of Rajasthan.

AFGHANISTAN

No significant developments are likely during the forecast period.



We wish to announce with deep regret the death of Mr. John Przybyszewski on 5 January, who was working as a locust emergency coordinator for the USAID mission in Madagascar. FAO expresses its 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	very few present and no mutual reaction occurring; 0 - 1 adult per 400 m foot transect (or less than 25 per ha). Other terms: a few.
scattered	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). other terms: some, low numbers.
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 sq. km	band: 1 - 25 sq. m.
small	swarm: 1 - 10 sq. km	band: 25 - 2,500 sq. m.
medium	swarm: 10 - 100 sq. km	band: 2,500 sq. m - 10 ha
large	swarm: 100 - 500 sq. km	band: 10 - 50 ha
very large	swarm: more than 500 sq. km	band: more than 50 ha

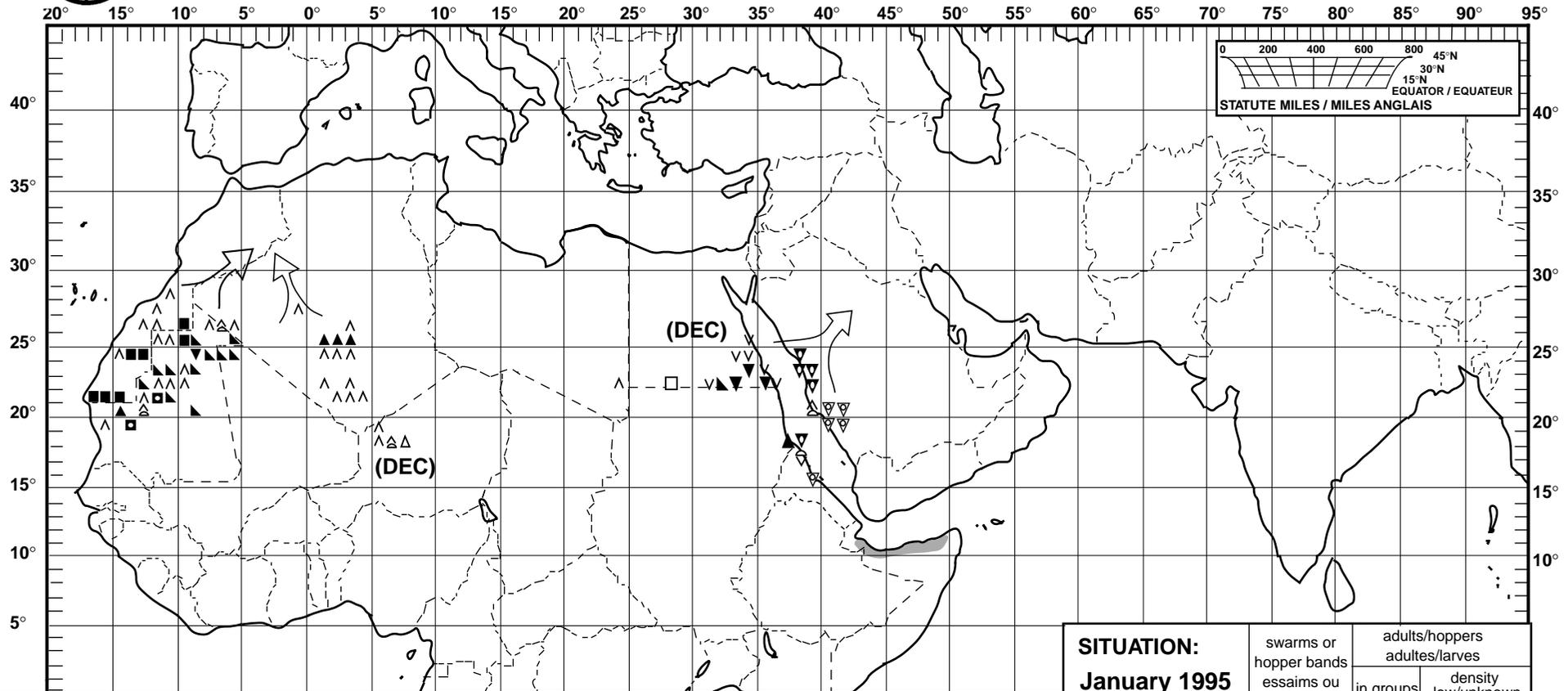
Other reporting terms

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 No. 197

Criquet pèlerin: situation résumée



FORECAST TO: PREVISION AU: 15.3.95	LIKELY PROBABLE	POSSIBLE POSSIBLE
current undetected breeding reproduction en cours et non détectée		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: January 1995 janvier 1995	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)			