



FAO



EMERGENCY CENTRE FOR LOCUST OPERATIONS

DESERT LOCUST BULLETIN No. 179



From early July onwards there was a major extension of the current upsurge with moderate to large scale swarm migration from the south-western Arabian Peninsula eastwards towards Oman, Pakistan and India. The reports of invading swarms from Oman, Pakistan and India indicate that this migration was on a major scale and moderate to large scale breeding has occurred in Pakistan and India. Most swarms reported invading Oman are believed to have moved eastwards towards Pakistan and India as ecological conditions in Oman are generally unfavourable for breeding. This development, together with a continuing westward movement of swarms across the Sahel of West Africa, has resulted in a very serious situation in which swarm populations have now been reported in all traditional summer breeding areas. The major risk during the forecast period is of swarm formation on a substantial scale and early migration from the Indo-Pakistan summer breeding area towards the west. However, there is also a risk that current ecological conditions will remain favourable for a second generation in India and Pakistan.

The westward movement of swarms from the Red Sea coastal areas and interior of Arabia towards the traditional summer breeding areas of the Sahel, which commenced in early June, continued during July. Swarms were reported from Chad, Niger and Mali and eventually reached parts of Mauritania by late July. It is believed that many of the swarms were moving north of the ITCZ over generally dry areas and therefore continued to move until suitable breeding areas were reached in the Adrar des Iforas of Mali and in southern Mauritania. However, the scale of the swarm migration and subsequent breeding in the Sahel is at present difficult to assess and must await further information from ground and aerial surveys before it can be assessed accurately. At this stage based on current available information, it is not believed that breeding will be on a major scale.

In Eastern Africa, the overall situation appears to have eased although the potential for further breeding continues in western and central Sudan and perhaps on the north-eastern coast of Somalia.

In the Near East, no significant developments are expected during the forecast period following the migration of swarms that were present during June and July.

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WEATHER AND ECOLOGICAL CONDITIONS

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 July, the ITCZ was located between 15-20°N in West Africa and Sudan, with extreme northerly movements to 23°N on the 27th over Mauritania and extreme southerly movements to 15°N on the 19th. Throughout the month, several small Saharan depressions were associated with the ITCZ and located over Mauritania, southern Algeria, Chad and central Sudan.

Satellite imagery indicated that the northern limit of cold clouds extended from southern Mauritania to Tombouctou and the northern Adrar des Iforas in Mali to the south-west Tamesna of Niger to central Chad to Northern Darfur and Northern Kordofan of Sudan. Cold clouds were also present over some parts of the south-western Arabian Peninsula, however, these are probably restricted to mountain areas.

Consequently, seasonal rains commenced and continued during the month in many Sahelian areas, primarily in southern Mauritania, the Adrar des Iforas of Mali, the southern Tamesna of Mali and Niger, the Biltine region of Chad and in Northern Darfur and Northern Kordofan of Sudan. For example, Aioun El Atrouss in southern Mauritania reported 103 mm during the last two decades of July; widespread rains occurred from Air in Niger to south-western Tamesna in Mali on the 13th and again on the 25th. Widespread rains were also reported in Northern Kordofan on the 16th and in southern Mauritania on the 29th.

As a result of these rains, breeding conditions are expected to be favourable in southern Mauritania, the Adrar des Iforas of Mali, from south-west Tamesna in Mali to the southern Air in Niger, in central and eastern Chad continuing into western and central Sudan.

In South-West Asia, unusually heavy monsoon rains fell throughout the month over a wide area from Tharparkar in Pakistan to Rajasthan and Gujajrat in India. For example, Barmer received 300 mm, Jaisalmer 225 mm and Jodhpur 189 mm during July. As a result, breeding conditions are assessed as being extremely favourable.

In the Arabian Peninsula, breeding conditions are generally unfavourable due to hot and dry weather during the month. Conditions may be improving in a few areas along the Tihama of Saudi Arabia and Yemen in areas of recent rainfall.



AREA TREATED IN JULY 1993

Egypt	5,200 ha (27 June - 20 July)
Eritrea	8,070 ha (26 June-9 July)
Ethiopia	800 ha (1-15 July)
India	12,527 ha
Mauritania	200 ha
Oman	8,000 ha
Pakistan	no details available
Saudi Arabia	no details available
Sudan	8,000 ha (June up to 19th of July)
Yemen	96,650 ha (25 May - 27 July)



DESERT LOCUST SITUATION

WEST AFRICA

MAURITANIA

During the second decade of July, maturing swarms were first reported to be invading from the east in northern Assaba at Goudia and in western Tagant at Tidjikja on 20 July. Groups of adults were reported in eastern Tagant at Tichit and near Tidjikja at Rachid (1847N/1141W) and Ederroum (1820N/1134W). There were also reports of some localised copulating and laying near Tidjikja.

On 22 July adults at a density of 4-5 per sq. m were observed breeding over 200 ha near N'Beika (1710N/1143E) where ground control was carried out. Four swarms were reported near Boumdeid in northern Assaba on the 25-27th where breeding was in progress. Additional swarms were observed between 26-31 July in Tagant near Tidjikja moving northwards and in Assaba near Kiffa. Other swarms arrived in the Tichit area.

In Hodh El Gharbi, small swarms were seen near Sava and isolated adults were reported near Aioun el Atrouss on the 26th.

Hatching commenced on 28 July in Tagant with hopper bands reported at Goudia.

MALI

On 5 July, a maturing swarm was reported in the Adrar des Iforas in Wadi Eleonej (1927N/0050E). Five additional swarms were reported north of the ITCZ, moving in a westerly and south-westerly direction over the Adrar des Iforas near Aguelhok between 8-10 July. During the second decade, a maturing swarm was reported at Almoustarat (1722N/0008E). By the end of the month, breeding had commenced at 4 locations west of Aguelhok where scattered adults were reported to be laying on 27-28 July.

In the Gourma region, scattered adults of mixed maturity were reported between Hombori, Gossi and Gourma-Rharous up to 26 July.

NIGER

Several swarms were first reported on 29-30 June in the eastern region between Dirkou (1900N/1254E) and Bilma flying towards Aïr. On 4-6 July, swarms were reported between Arlit and Agadez; some of these swarms were reported to be moving south-west while others persisted in Aïr. Isolated adults were reported north of Diffa (1319N/1237E) during the two last decades of the month.

CHAD

An immature swarm was first reported in the eastern regions of Ennedi on 26 June at Fada (1712N/2136E) and in Biltine at Guereda (1431N/2205). A small swarm was observed flying towards the north-west on 28 June and another swarm was seen near Kalait (1550N/2054E).

Further swarms were reported in Biltine near Iriba (1508N/2215E) on 4 July, in northern Kanem at Chicha (1654N/1831E) on 11 July, and in Biltine at Am Zoer (1413N/2133E) on 17-18 July and a mature swarm between Wadi Fama (1529E/2038) and Wadi Ouagat (2040N/1529E) on 22 July.

By late July, intensive ground surveys found only scattered maturing adults remaining in Ennedi near Fada, in Biltine near Kalait and Guereda, in north-eastern Kanem, in southern Borkou and in Tibesti near Zouar and Bardaï.

SENEGAL

No Desert Locust were reported up to 10 July.

No locust information had been received from other countries in the region up to 31 July.

NORTH-WEST AFRICA

MOROCCO

No locust activity was reported from 1 June to 20 July.

In late July, there was one unconfirmed report of a swarm in the extreme south-west; no further details were available.

ALGERIA

No locust activity was reported up to 14 July.

TUNISIA

No locust activity was reported during June.

No locust information had been received from other countries in the region up to 31 July.

EASTERN AFRICA

SUDAN

In late June and the first half of July, a number of swarms many of which were mature were reported in the northern and western regions as well as on the Red Sea coast. Two small maturing swarms were seen in the Bayuda Desert about 100 km east of Atbara at 1810N/3359 and treated on 28 June. Four medium density swarms of mixed maturity were reported in Northern Darfur near El Fasher on 29 June. On the Red Sea coast, one mature medium density swarm was reported at Suakin on 2 July together with small scale infestations of hoppers and fledglings. Between 26 June and 10 July, a total of 13 maturing swarms were reported from the El Wuz - Sodiri - Umm Sayala area of Northern Kordofan.

During the second half of July, swarms continued to be reported from the El Fasher area and also from Northern Kordofan. One mature swarm was also seen in Wad Medani on 18 July. Ground control operations were in progress, with approximately 1,500 ha treated by mid July, of an infestation of early instar hopper bands in the Sodiri, Bara and El Wuz north of El Obeid in northern Kordofan. A large swarm was also reported from Umm Sayala on 21 July.

ERITREA

Late instar hopper groups and bands comprising both African Migratory Locust and Desert Locust together with mature and immature swarmlets of both species were controlled over a total of 8,070 ha on the Red Sea coast in the Agbanazuf plain near Shieb and Shelshea between 26 June and 8 July. In mid-July, two swarmlets were seen near Wadelo and Shieb over a total of 800 ha. Low densities adults persisted throughout the coastal and subcoastal plains.

ETHIOPIA

During the first half of July, a number of swarms were controlled in the Erer (0932N/4142E), Gedeni, Arabi and Dire Dawa areas over a total of approximately 800 ha. Control operations, presumably also against swarms, were reported to be in progress in Tigray, but no details were available. It is believed that all control operations were against African Migratory Locust, not Desert Locust; however, confirmation is awaited.

SOMALIA

During the first half of July, extensive ground surveys in northern Somalia found a total of 11 swarms of African Migratory Locust covering a total area of about 40-50 sq. km in the Borama (0957N/4311E), Arrad (1005N/4303E), Hacial (1018N/4545E), Halaya (0930N/4418E), Gabiley (0949N/4341E) and Agabar (0952N/4336E) areas. Late instar hopper bands of African Migratory Locust were also seen in the Arrad area. No Desert Locust populations were observed during the survey.

During the last decade of July, one mature swarm of Desert Locust was reported in north-eastern Sanaag at Marie (ca. 1100N/4835E) on 25 July and scattered adults were seen at two locations nearby.

DJIBOUTI

On 16 July, there was a report of a swarm passing over Djibouti but no details, particularly species, were available.

KENYA, TANZANIA and UGANDA

No locust activity was reported during July.

NEAR EAST**SAUDI ARABIA**

From late June to mid July, substantial ground and aerial control operations were undertaken against approximately 70 immature swarms in the southern Asir Mountains, near Najran (1730N/4410E) and south-west of Dawasir (2039N/4509E). Swarm size varied between 1 and 3 sq. km. Groups of immature adults were also reported in the Sharawrah (1715N/4707E) area during the same period. Control operations were completed on 15 July and no further locust activity has been reported. Aerial and ground control surveys are continuing as a precautionary measure.

OMAN

From early July onwards immature swarms invaded Oman from the south on a substantial scale. Swarms were reported passing near Salalah on 6, 16 and 28 July respectively. Field observations indicate that most invading swarms moved in a general north-easterly direction along a relatively narrow strip (ca. 30 km) of the Oman coast with subsequent reports indicating a concentration of swarms between Sur (2235N/5930E) and Ras Al Hadd (2232N/5950E) in the second half of July. Aerial and ground control were carried out mainly in the Sur area with approximately 8,000 ha treated by late July.

EGYPT

Moderate densities of solitary adults were controlled within a general area of 33 sq. km at four locations in the south-eastern desert in the vicinity of Wadi Garara (2340N/3435E) between 27 June and 4 July.

Numerous early and late instar hopper bands and 4 immature swarms, up to 6 sq. km in size, were treated over a total of 19 sq. km on the Nile near Garf Hussein (2315N/3250E) between 9-19 July.

YEMEN

Large scale fledging and swarm formation occurred during the first half of July between Wadi Al Jawf and Shabwah. A large number of swarms formed varying in size from 1-40 sq. km and many migrated in an easterly direction from early July onwards. Aerial control operations commenced in early July to supplement the continuing ground efforts.

During the second half of July, aerial control operations continued against immature swarms in the northern highlands in Sadah area and in the desert areas of Wadi Jawf, Marib and Shabwah. Some late instar hopper bands were reported near Sana'a on 26 July; there were also some adults mixed with heavy infestations of African Migratory Locust on the Tihama during the last decade. There was an unconfirmed report of a large swarm on the Red Sea coast at Hodeidah on 21 July.

However, as a result of substantial swarm migration during July, infestations decreased and control operations ceased by the end of July. In late July, only low density scattered adults were found during aerial surveys along the Tihama and coastal plains east of Aden.

KUWAIT

No locust activity was reported during May and June.

No locust information had been received from other countries in the region up to 31 July.

SOUTH-WEST ASIA

PAKISTAN

During the second half of June, low densities of solitarious adults were reported in northern Baluchistan from 12 locations of Quetta district, with a maximum density of 4000 adults per sq. km within an area of 3 sq. km near Nushki at Talshpo (2938N/6555E).

However, as a result of a significant migration from the southern Arabian Peninsula from early July onwards, incoming swarms and swarmlets ranging in size from 1-2 sq. km, invaded the Tharparkar and Cholistan deserts; other swarms were reported near Khuzdar within 40 sq. km and near Baghbara (2755N/6627E) within a 50 sq. km area on 15 July. Although most of these were mature or copulating, no breeding has however been reported. Ground and aerial control operations were immediately undertaken and are continuing.

Elsewhere during the first half of July, low to moderate densities of solitarious adults were reported from 57 locations in Karachi, Sukkur and Bahawalpur districts, with a maximum density of 15,450 adults per sq. km in Sukkur district at Gabbar (2734N/6947E) on 10 July.

During the second half of July, large scale breeding occurred in the Tharparkar Desert. A late unconfirmed report in early August indicated that substantial infestations of early instar hopper bands in the Tharparkar Desert in the general areas of 2610N/6945E and 2515N/7030E. Swarms and swarmlets were also reported in the area of 2815N/7100E. Control operations were in progress.

INDIA

During the second half of June, a total of 66 locations in Rajasthan and Gujarat reported scattered adults at densities up to 6,000 per sq. km. The majority of the reports were from Bikaner and Ganganagar.

During the first half of July, a total of 12 incoming maturing swarms, up to 6 sq. km in size, invaded Barmer, Jodhpur and Jaisalmer of Rajasthan as a result of a significant swarm migration from the southern Arabian Peninsula from early July onwards.

During the second half of July, swarms were reported from a total of 636 locations in Jaisalmer, Jodhpur, Jalore and Barmer districts of Rajasthan, and Banaskantha and Kutch Bhuj districts of Gujrayat. Hatching occurred on a substantial scale and there were 336 reports of hopper bands from the above locations, most of these were concentrated between Jaisalmer and Barmer. Ground control operations continued and were supplemented by aerial control, treating a total of 12,000 ha.



WEST AFRICA

MAURITANIA

Laying by incoming swarms has almost certainly occurred in Tagant and northern Assaba and hopper bands will result in the first half of August. It is very difficult to assess the scale of breeding; however, this is unlikely to be on an extensive or major scale based on information available to date. Swarms are likely to form by the end of the forecast period. Small scale breeding is likely to be in progress in the two Hodhs and Assaba in areas of earlier rains.

MALI

Swarms reported in the Adrar des Iforas and adjacent areas are likely to have laid and hopper bands will form early in the forecast period with small scale swarm formation at the end of the forecast period. The scale of this breeding is difficult to assess based on current available information, but it is not believed it will be on a major scale.

NIGER

It is possible that small hopper bands and a few swarms may form in Tamesna and Air during the forecast period as a result of any breeding by incoming swarms in July. The scale of hopper band and swarm formation is not expected to be major.

CHAD

It is believed that most of the swarms reported from Chad in July moved further west due to the absence of suitable ecological conditions. However, small scale breeding may have occurred in parts of Tibesti, Kanem, BET and Biltine where rain has fallen recently.

SENEGAL

It is considered unlikely that there will be any significant locust developments within the forecast period. However, surveys are recommended, particularly in northern border areas, from early September onwards.

BURKINA FASO, CAMEROON, GAMBIA, GUINEA BISSAU and GUINEA CONAKRY

No significant developments are likely during the forecast period.

NORTH-WEST AFRICA**ALGERIA**

Some adults, possibly groups, may be present in the extreme south and small scale localised breeding may occur in areas where ecological conditions are suitable. At this stage the risk of any significant swarm movement into southern Algeria is considered low but surveys in the south are recommended during September as a precautionary measure.

MOROCCO

At this stage it is considered that there is a low risk of any significant swarm movement into southern Morocco during the forecast period. However, as a precautionary measure, it is recommended that surveys be undertaken in the south from early September onwards.

TUNISIA and LIBYA

No significant locust developments are likely to occur during the forecast period.

EASTERN AFRICA**SUDAN**

Fledging of hopper bands likely to be present in Northern Kordofan near El Obeid will commence in mid-August with swarm formation occurring in late August. Breeding may have occurred in Northern Darfur during July and hopper bands are likely to be present. The scale of breeding and resulting hopper bands are difficult to forecast, however this is unlikely to be on an extensive or major scale.

ERITREA

Some localised adult infestations are likely to persist on the coastal areas north of Massawa; however, small numbers of adults are expected to persist and breed on a small scale during the forecast period.

ETHIOPIA

The situation is not clear as it is uncertain whether the recent reports pertain to Desert Locust or African Migratory Locust. However, it is possible that populations of Desert Locust may be present in the Ogaden where conditions are suitable for breeding. If such populations are present, it is possible that small scale hopper band and subsequent swarm formation may occur during the forecast period.

SOMALIA

Breeding on a scale sufficient to produce hopper bands may occur on the northern coastal plains east of Las Koreh.

DJIBOUTI

Isolated adults may be present at places along the northern coast; however, no significant developments are likely during the forecast period.

KENYA, TANZANIA and UGANDA

No significant developments are likely during the forecast period.

NEAR EAST

SAUDI ARABIA

Survivors from recent control campaigns may have migrated onto the southern Tihama where small scale and localised breeding may occur if ecological conditions improve.

YEMEN

Survivors from recent control campaigns may persist in areas of recent rains in Shabwah and others may have migrated onto the Tihama where small scale and localised breeding may occur if ecological conditions improve.

OMAN

There is a low probability of further swarms entering from the south in the first half of August. As ecological conditions are unsuitable for breeding, swarms are expected to continue to move further north-east. There is a low to moderate risk of early migration from the Indo-Pakistan summer breeding areas late in the forecast period, and therefore surveys should be undertaken from early September onwards in the Musandam Peninsula and on the Batinah as a precautionary measure.

UAE

There is a low to moderate risk of early migration from the Indo-Pakistan summer breeding areas late in the forecast period, and it is therefore recommended that surveys be undertaken from early September onwards on the Fujayrah coast as a precautionary measure.

BAHRAIN, EGYPT, IRAQ, ISRAEL, JORDAN, KUWAIT, LEBANON, QATAR, SYRIA and TURKEY

No significant developments are likely during the forecast period.

SOUTH-WEST ASIA

PAKISTAN

Large scale breeding will continue primarily in Tharparkar and perhaps Cholistan; as a result, numerous hopper bands will be present during August and swarms will commence to form on a moderate, possibly large, scale in the these areas by the end of August where further breeding may occur if conditions remain favourable. Current populations may be augmented by additional swarms from the south-west during the first half of August. There is a low to moderate risk of westward movement by swarms at the end of the forecast period, especially if vegetation conditions start to dry out.

INDIA

Large scale breeding will continue primarily in Rajasthan and Gujarat; as a result, numerous hopper bands will be present during August and swarms on a moderate, possibly large, scale will commence to form in the these areas by the end of August where further breeding may occur if conditions remain favourable. Current populations may be augmented by additional swarms from the south-west during the first half of August. There is a low to moderate risk of westward and eastward movement at the end of the forecast period, especially if vegetation conditions start to dry out.

IRAN

It is considered unlikely that there will be any significant change in the locust situation during the forecast period. However, there is a low to moderate risk of early migration from the Indo-Pakistan summer breeding areas late in the forecast period, and therefore surveys in the south-eastern coastal plains are recommended from early September as a precautionary measure.

AFGHANISTAN

No significant developments are likely during the forecast period.

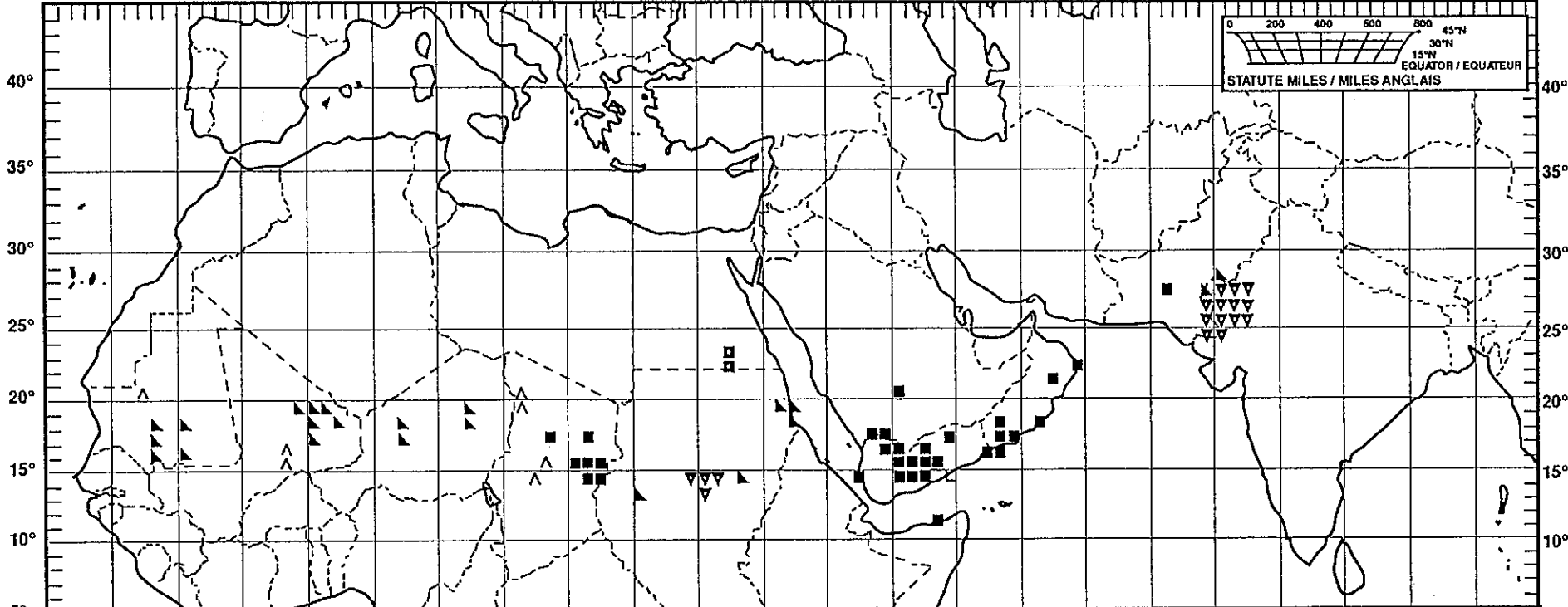


Desert Locust: summary Criquet pèlerin: situation résumée

No. 179



20° 15° 10° 5° 0° 5° 10° 15° 20° 25° 30° 35° 40° 45° 50° 55° 60° 65° 70° 75° 80° 85° 90° 95°



FORECAST TO: PREVISION AU: 15.9.93	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: July 1993 juillet 1993	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)			

15° 20° 25° 30° 35° 40° 45°