

# DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 320

(3 June 2005)



## General Situation during May 2005 Forecast until mid-July 2005

Small-scale breeding commenced in central Niger during May and control operations were initiated against small hopper bands that started to form by the end of the month. Several immature swarms associated with the Southern Circuit migration moved across southern Niger, through northern Nigeria, Cameroon and Chad and eventually reached western Darfur in Sudan. Some of these swarms could reach eastern Sudan and western Eritrea and may eventually breed. Locust infestations continued to decline in the spring breeding areas in Morocco and Algeria where limited control operations were conducted. Although swarms are unlikely to invade the Sahel this year, intensive survey operations should nevertheless be immediately launched in Mali, Niger and Chad and continue in Mauritania.

**Western Region.** During May, several immature swarms moved east between 13N and 15N along the Inter-Tropical Convergence Zone from western Niger to eastern Chad. This movement is commonly referred to as the Southern Circuit migration. Some of these swarms passed through northern Cameroon and probably northern Nigeria. Groups of mature adults and a few small swarms, mainly from residual populations in Niger near the Air Mountains and in the Sahara region, appeared in central Niger and laid eggs in a relatively limited area where unusually heavy rains fell in early May. By the end of the month, hatching had occurred and small hopper bands were forming. Although control operations were underway, breeding may have taken place in other areas where

good rains fell such as near Tahoua. The situation is less clear in northern Mali where small-scale breeding may be in progress in parts of the north. No locusts were reported in Mauritania or Senegal. Spring breeding has come to an end in Northwest Africa where locust numbers continued to decline in northeast Morocco and northeast Algeria. In the latter, control operations including a bio-pesticide trial were undertaken against small infestations of hopper bands. Small-scale breeding was reported in southern Algeria. During the forecast period, breeding will continue in Niger and is likely to commence in Mali and Mauritania.

**Central Region.** Several Southern Circuit swarms arrived in western Darfur, Sudan during the last week of May and continued to move eastwards because although the rains had just started ecological conditions were still dry. These swarms are likely to move to Northern Kordofan and could cross the Nile River and reach eastern Sudan and the western lowlands in Eritrea and eventually mature and may breed. They may be supplemented by adults arriving from southern Egypt where small-scale breeding occurred during May and perhaps by any locusts that escaped control operations that were carried out against hopper bands on the Red Sea coast north of Jeddah, Saudi Arabia. By the end of the forecast period, small hopper groups and bands could form in Sudan and perhaps Eritrea. Solitary locusts were present in a few places in southern Yemen and northern Somalia where limited breeding could take place in the coming weeks if conditions are favourable. No locusts were reported elsewhere in the region.

**Eastern Region.** No locusts were reported in the region and dry conditions prevailed except in parts of Rajasthan, India where good rains fell. No significant developments are likely during the forecast period.

The FAO Desert Bulletin is issued monthly, supplemented by Updates during periods of increased Desert Locust activity, and is distributed by e-mail, FAO pouch and airmail by the Locusts and Other Migratory Pests Group, AGP Division, FAO, 00100 Rome, Italy. It is also available on the Internet.

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### Weather & Ecological Conditions in May 2005

**Seasonal rains commenced in a few places in the summer breeding areas in the Sahel in West Africa and Sudan and ecological conditions improved during May. Rainfall was heaviest in central Niger where breeding eventually occurred. General dry conditions prevailed elsewhere in the recession area.**

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) continued its seasonal progression towards the north in May, oscillating around 15N and occasionally reaching as far north as 20N over western Mauritania and 22N over northern Mali and Chad. When the ITCZ surged northwards, rain fell in parts of the summer breeding area, mainly in central Niger near Tahoua and Tanout on 1-2 May, in the Air Mountains on the 8<sup>th</sup>, and on the 27-29<sup>th</sup> in northern Mali along the border with Algeria as well as in eastern Chad near the Sudanese border. Rainfall was heaviest in Niger near Zinder (123 mm) and Tanout (31 mm). By mid-month ecological conditions had become favourable for breeding in these areas and vegetation in the Air Mountains was turning green again from the recent rains. Light rain fell in a few parts of Inchiri in northwest Mauritania and in local areas within Assaba, Brakna and Hodh El Gharbi in the south where ecological conditions were dry. In northern Mali, light rain fell sporadically during the first week of May and perhaps again towards the end of the month. A few small patches of green vegetation were present in the Timetrine and on the western side of the Adrar des Iforas. No significant rain fell in the spring breeding areas along the southern side of the Atlas Mountains in Northwest Africa or in western Libya. Consequently, vegetation was drying out or already dry in most areas and ecological conditions were not favourable for further breeding.

In the **Central Region**, seasonal rains began to fall in parts of the summer breeding areas in Sudan during the third decade of May. Light to moderate rain was reported in Western Darfur (Geneina 30 mm), Northern Darfur (El Fasher 23 mm), Northern Kordofan (En Nahud 41 mm, El Obeid 18 mm), Khartoum (34 mm) and Kassala (42 mm). By the end

of the month, vegetation in some of these areas was starting to become green. Light rain fell in northern Sudan near Atbara. Light rain also fell in the Red Sea Hills and perhaps on the nearby coastal plains in northeast Sudan and southeast Egypt. Although some rain fell in the highlands and the western lowlands of Eritrea at mid-month, ecological conditions were dry. Moderate rain fell in southern Yemen near Lahij at mid-month and on the central and northern Red Sea coastal plains during the last week of the month. In northern Somalia, ecological conditions were generally unfavourable for breeding even though rain fell at times in parts of the northwest and central coastal plains and on the escarpment near Hargeisa.

In the **Eastern Region**, dry conditions prevailed in the spring breeding areas in eastern Iran and western Pakistan. Moderate to heavy rains that fell in the summer breeding areas in Rajasthan, India between Jodhpur and Jaisalmer in early May caused ecological conditions to improve in many areas. During the last decade of the month, the southwesterly winds that eventually bring rain associated with the monsoon to the summer breeding areas along the Indo-Pakistan border became established over the Horn of Africa. Nevertheless, monsoon rains are not expected to start until later in June.



### Area Treated

Nearly 8,300 ha were treated in May compared to more than 1 million ha in May 2004, bringing the total area treated since the beginning of the upsurge (October 2003) to 12.8 million ha.

Algeria	1,570 ha (1-31 May)
Egypt	557 ha (1-30 May)
Morocco	47 ha (1-29 May)
Niger	938 ha (1-26 May)
Saudi Arabia	757 ha (19-30 April)
	5,155 ha (1-25 May)

*Note: Reporting delays and discrepancies may affect the accuracy of these figures.*



### Desert Locust Situation and Forecast

( see also the summary on page 1 )

#### WESTERN REGION

##### **Mauritania**

##### • SITUATION

No locusts were seen during surveys carried out in the northwest, centre and south during May.

- **FORECAST**

*Low numbers of adults are expected to start to appear in parts of the centre and south and eventually breed on a small scale in those areas that recent rainfall.*

### **Mali**

- **SITUATION**

No locusts were reported during May.

- **FORECAST**

*Low numbers of adults are likely to be present and breeding in parts of the Adrar des Iforas, the Tilemsi Valley and in the Timetrine. As the current situation is not very clear and as there is a low risk that a few small adult groups could appear in the north from Northwest Africa after mid-June, intensive surveys should immediately commence in all of the above-mentioned areas.*

### **Niger**

- **SITUATION**

In late April and early May, several medium-density immature swarms associated with the Southern Circuit migration moved eastwards through the south of the country. On 27 April, a swarm was reported near the Benin border at Gaya (1152N/0328E). Swarms were also reported several days later near Tillabéri (1428N/0127E) and Niamey. Several swarms moved east and reached Maradi (1329N/0710E) and the Zinder (1346N/0858E) area on the 3<sup>rd</sup> and Diffa (1318N/1236E) on the 7<sup>th</sup>. One swarm was estimated to be about 38 km<sup>2</sup> in size while another was reportedly 72 km<sup>2</sup>. Most of these swarms are thought to have continued to Chad.

About 120 km north of Zinder where the Southern Circuit swarms passed, groups of transiens and gregarious mature adults at densities of 1,000-3,000/ha and a few small swarms, mainly less than 1 km<sup>2</sup> in size, were seen laying eggs near Tanout (1505N/0850E) on 14 May. These locusts probably originated from local infestations that have persisted in the Air Mountains and parts of the Sahara during the past six months. Hatching commenced on the 22<sup>nd</sup> and first instar hoppers formed small groups and bands at densities up to 60 hoppers/m<sup>2</sup>. Copulating, laying and hatching were still in progress at the end of the month in the Tanout area. Ground control operations treated 938 ha from 1 to 26 May.

In the Air Mountains, isolated immature and mature adults were seen in a few places during surveys on 14-20 May.

- **FORECAST**

*Locust numbers will increase in the Tanout area as hatching and band formation continue during June. Fledging is expected to commence during the second half of June and groups and perhaps a few small*

*swarms could form by early July. Additional breeding may be in progress in the Tahoua area where good rains fell during May. There is a low risk that a few small adult groups could appear in Tamesna and Air from Northwest Africa after mid-June as well as any new generation adults from the Tanout area.*

### **Chad**

- **SITUATION**

On 9-11 May, a swarm with a density of 50 adults/m<sup>2</sup> was seen near Lake Chad at Bol (1327N/1440E). This swarm is thought to be part of the Southern Circuit migration.

- **FORECAST**

*A few small Southern Circuit swarms could still be present and moving east along the ITCZ through the centre of the country. Unless good rains fall, these swarms are expected to continue to Sudan.*

### **Cameroon**

- **SITUATION**

On 8 May, a swarm of transiens and gregarious immature adults reportedly arrived in the Goulfey region (ca. 1206N/1445E) in the extreme north from adjacent areas in Chad near the Logone River. The swarm moved south and reached Bogo (1044N/1436E) on the 10<sup>th</sup> and Yagoua (1020N/1514E) on the following day. On the 13<sup>th</sup>, it was seen moving east back to Chad. This swarm was probably part of the Southern Circuit migration.

- **FORECAST**

*No significant developments are likely.*

### **Nigeria**

- **SITUATION**

There was an unconfirmed report of aerial control being carried out against swarms in about mid-May in the province of Maiduguri (ca. 1153N/1316E) in the extreme north near the border with Niger, Chad and Cameroon.

- **FORECAST**

*No significant developments are likely.*

### **Senegal**

- **SITUATION**

No locusts were reported during the second decade of May.

- **FORECAST**

*No significant developments are likely.*



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### **Benin, Burkina Faso, Cape Verde, Cote d'Ivoire, Gambia, Ghana, Guinea Bissau, Guinea, Liberia, Sierra Leone and Togo**

#### • FORECAST

*No significant developments are likely.*

### **Algeria**

#### • SITUATION

During May, small infestations of late instar hopper groups and bands were present in the northeastern Sahara between El Oued (3323N/0649E) and Biskra (3448N/0549E) and, to a lesser extent, north of Ghardaia (3225N/0337E) and south of Khenchla (3526N/0706E). During the last decade of the month, most of the hoppers were fledging and forming small groups of immature adults. Ground operations treated 1,570 ha during May, most of which were fledglings in the last week of May. In the southern Sahara, local breeding occurred west of Tamanrasset in W. Amded (2250N/0427E) where fifth and sixth instar solitary hoppers, fledglings and immature adults were present during the last week of May. Similar breeding also occurred in one location about 150 km north of Tamanrasset.

#### • FORECAST

*Locust numbers will decline in the spring breeding areas as immature adult groups move south towards the Sahel. Consequently, no further developments are expected in the spring breeding areas. Additional breeding may have occurred during May in parts of the southern and central Sahara that was difficult to detect. If so, any resulting adults and perhaps a few small groups that could form are expected to move towards the Sahel.*

### **Morocco**

#### • SITUATION

During May, small residual patches of gregarious hoppers persisted in the northeast near the Algerian border and south of Oujda in a limited area between Touissit (3429N/0146W) and Guenfouda (3428N/0159W). By the end of the month, the hoppers had reached the fourth and fifth instar. Ground control operations treated 47 ha during May.

#### • FORECAST

*Locust numbers will decline in the spring breeding areas as conditions become dry. No significant developments are likely.*

### **Libyan Arab Jamahiriya**

#### • SITUATION

During May, scattered solitary adults were present in the southeast at the Agricultural Project in Kufra (2411N/2315E). No locusts were seen during surveys carried out in the northwest along the border with Tunisia near Ghadames, Nalut and in the Al-Hamada Al-Hamra.

#### • FORECAST

*No significant developments are likely.*

### **Tunisia**

#### • SITUATION

No reports were received during May.

#### • FORECAST

*Small-scale breeding that may have occurred during May could give rise to a few groups of adults in the southwest near Tozeur. If so, these groups are expected to move towards the Sahel.*

## **CENTRAL REGION**

### **Sudan**

#### • SITUATION

On 25 May, an immature swarm was reported in western Darfur near Geneina (1327N/2230E) coming from the west. There were several more reports of immature swarms in the Geneina area between the 25<sup>th</sup> and 30<sup>th</sup> of May. The swarms were of medium density and varied in size from less than 1 km<sup>2</sup> to nearly 7 km<sup>2</sup>. They appeared from the west, suggesting that they were probably the same swarms reported earlier in the month in Niger and Chad that were moving along the Southern Circuit in association with ITCZ. The swarms continued to move further east towards Northern Kordofan. Gregarious immature adults at densities of up to 200 adults/ha seen near Geneina at the same time were probably from the swarms.

#### • FORECAST

*Although it is unlikely that large numbers of additional swarms will appear from the west in Darfur, there is a low risk that a few more small swarms could arrive up to about mid-June. The majority of the swarms that are currently present are expected to move further east to Northern Kordofan and some could cross the Nile River and reach the Kassala area. Any late-arriving swarms from the west could remain in Darfur. In any case, the swarms are likely to mature and may eventually lay eggs in areas where rainfall occurs. If so, hatching and band formation could commence by the end of the forecast period. Small groups of adults from southern Egypt may also appear in Northern Kordofan and along the Nile between Khartoum and Dongola and eventually breed. Intensive surveys should immediately commence in all of the above-mentioned areas.*

## Eritrea

### • SITUATION

No locusts were seen during surveys carried out between Asmara and Barentu (1508N/3736E) in the western lowlands on 16-17 May.

### • FORECAST

*There is a low to moderate risk that a few Southern Circuit swarms coming from the west could reach the western lowlands in June. If so, they are likely to mature and may lay eggs in areas where conditions are favourable. If so, hatching and band formation could start by the end of the forecast period.*

## Somalia

### • SITUATION

During the second week of May, scattered solitary mature adults were present at a few places on the plains east of Burao (0931N/4533E) and on the coast near Maydh (1058N/4705E). No trace could be found of the unconfirmed locusts reported in April near Las Koreh.

### • FORECAST

*If rains fall, small-scale breeding may occur in a few places along the northern central coast near Maydh.*

## Ethiopia

### • SITUATION

No surveys were carried out and no locusts were reported during May.

### • FORECAST

*No significant developments are likely.*

## Djibouti

### • SITUATION

A single solitary adult was seen near Lake Abhé (1115N/4149E) on 12 April. No locusts were reported during May.

### • FORECAST

*No significant developments are likely.*

## Egypt

### • SITUATION

During May, scattered immature transiens adults were present on the southern coastal plains of the Red Sea near Shalatyn (2308N/3535E) and in adjacent areas of the Red Sea Hills near Wadi Abraq. Similar infestations mixed with maturing solitary adults were seen along Lake Nasser. Small-scale breeding occurred in agricultural areas west of Lake Nasser at Sh. Oweinat (2219N/2845E) where late instar hoppers and adults groups were present in crops. During the last decade of the month, breeding also occurred near Aswan in the Nokra Valley where solitary and gregarious first and second instar hoppers were present at densities of 5-35 hoppers/m<sup>2</sup>. Ground control operations treated 557 ha during May

near Sh. Oweinat and Aswan.

### • FORECAST

*Small-scale breeding will continue near Aswan and Sh. Oweinat and a limited number of small adult groups could form. Some of these could eventually move south towards the summer breeding areas in the interior of Sudan.*

## Saudi Arabia

### • SITUATION

During the second half of April and throughout May, control operations continued in one area north of Jeddah on the central Red Sea coastal plains against hopper groups and bands, some at high densities, near Masturah (2309N/3851E). By mid-May, many of the hoppers had fledged. Operations treated about 5,900 ha during the period. No locusts were seen elsewhere on the coast or in the interior during surveys carried out in May.

### • FORECAST

*Any locusts that escaped survey and control operations on the Red Sea coast are likely to move across the Red Sea towards Sudan.*

## Yemen

### • SITUATION

During the first week of May, isolated breeding occurred on the Gulf of Aden coastal plains south of Ataq (1435N/4649E) where a single third instar hopper was seen. Scattered adults at densities of about 80/ha were seen copulating at one location in the interior northeast of Ataq near Shabwah (1522N/4700E). Isolated mature adults were also present on the coast near Aden (1250N/4503E). No locusts were seen during surveys carried out along the Red Sea coastal plains in May.

### • FORECAST

*Low numbers of adults may be present along the Red Sea coastal plains where they could breed in areas of recent rainfall. Low numbers of solitary hoppers are likely to appear in a few places in the interior near Ataq as a result of small-scale breeding in those areas where ecological conditions are favourable.*

## Oman

### • SITUATION

No locusts were seen during surveys carried out in Batinah, Sharqiya, Dhahera, Dakhalia, Dofar and



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Musandam regions in April and May.

- **FORECAST**

*No significant developments are likely.*

**Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Lebanon, Palestine, Qatar, Syria, Tanzania, Turkey, UAE and Uganda**

- **FORECAST**

*No significant developments are likely.*

### **EASTERN REGION**

#### **Iran**

- **SITUATION**

No reports were received during May.

- **FORECAST**

*No significant developments are likely.*

#### **Pakistan**

- **SITUATION**

No locusts were seen in the spring breeding areas during the second half of April and first half of May.

- **FORECAST**

*A few scattered adults may start to appear in the summer breeding areas in Tharparkar and Cholistan from mid-June onwards and eventually breed with the onset of the monsoon rains.*

#### **India**

- **SITUATION**

No locusts were seen during the last week of April and the first half of May.

- **FORECAST**

*A few scattered adults may start to appear in the summer breeding areas in Rajasthan from mid-June onwards and eventually breed with the onset of the monsoon rains.*

#### **Afghanistan**

- **SITUATION**

No reports received.

- **FORECAST**

*No significant developments are likely.*



## Announcements

**Locust reporting.** During locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent twice/week and affected countries are encouraged to prepare decadal bulletins summarizing the situation. During recession periods, countries should report at least once/month. All information should be sent by e-mail to the FAO/ECLO Desert Locust Information Service (eclo@fao.org). Information received by the end of the month will be included in the FAO Desert Locust Bulletin for the current month; otherwise, it will not appear until the following month. Reports should be sent even if no locusts were found or if no surveys were conducted.

**Locust web pages.** The Locust Group will launch an updated version of its web site in English and French on 15 June. The new address will be: [www.fao.org/ag/locusts](http://www.fao.org/ag/locusts).

**Locust archives.** Desert Locust reports received by FAO from affected countries from 1952 to the present are available on a series of four CDs in PDF. Please contact the Locust Group for more details.

**Desert Locust booklet.** FAO has produced a booklet for the general public and donor community entitled *Hunger in their wake: Inside the battle against the Desert Locust*, available for download at: [www.fao.org/news/global/locusts/pubs1.htm](http://www.fao.org/news/global/locusts/pubs1.htm)

**Publications on the Internet.** New FAO publications and meeting reports are available for downloading at [www.fao.org/news/global/locusts/pubslst.htm](http://www.fao.org/news/global/locusts/pubslst.htm):

- 24th session of the FAO Commission for Controlling the Desert Locust in South-West Asia (English)

**Assistance provided.** Details of assistance provided by donors to the current locust campaign are available on the Internet at: [www.fao.org/news/global/locusts/donor/donor.htm](http://www.fao.org/news/global/locusts/donor/donor.htm).

**2005-2006 events.** The following meetings are tentatively scheduled:

- **CLCPRO.** 3rd session, Tripoli (Libya), 12-16 June
- **CRC.** 27th session of the Executive Committee, Khartoum (Sudan), 24-28 July
- **EMPRES/CR.** 6th Consultative Committee, Cairo (Egypt), 13-15 November
- **DLCC.** 39th Session, Rome, 5-9 December
- **EMPRES/CR.** 13th Liaison Officers meeting, Yemen, January 2006

- **EMPRES/WR.** 4th Liaison Officers meeting, Algiers, January/February 2006



## 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<sup>2</sup>      • band: 1 - 25 m<sup>2</sup>

#### **SMALL**

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

#### **MEDIUM**

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

#### **LARGE**

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

#### **VERY LARGE**

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

### **RAINFALL**

#### **LIGHT**

- 1 - 20 mm of rainfall.

#### **MODERATE**

- 21 - 50 mm of rainfall.

#### **HEAVY**

- more than 50 mm of rainfall.

### **OTHER REPORTING TERMS**

#### **BREEDING**

- the process of reproduction from copulation to fledging.

#### **SUMMER RAINS AND BREEDING**

- July - September/October

#### **WINTER RAINS AND BREEDING**

- October - January/February

#### **SPRING RAINS AND BREEDING**

- February - June/July

#### **DECLINE**

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

#### **OUTBREAK**

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

#### **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.

#### **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.

### **REGIONS**

#### **WESTERN**

- locust-affected countries in West and North-West Africa: Algeria, Chad, Libya, Mali, Mauritania, Morocco, Senegal, Tunisia; during plagues only: Burkino Faso, Cape Verde, Gambia, Guinea Bissau and Guinea Conakry.

#### **CENTRAL**

- locust-affected countries along the Red Sea: Djibouti, Egypt, Eritrea, Ethiopia, Oman, Saudi Arabia, Somalia, Sudan, Yemen; during plagues only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

#### **EASTERN**

- locust-affected countries in South-West Asia: Afghanistan, India, Iran and Pakistan.



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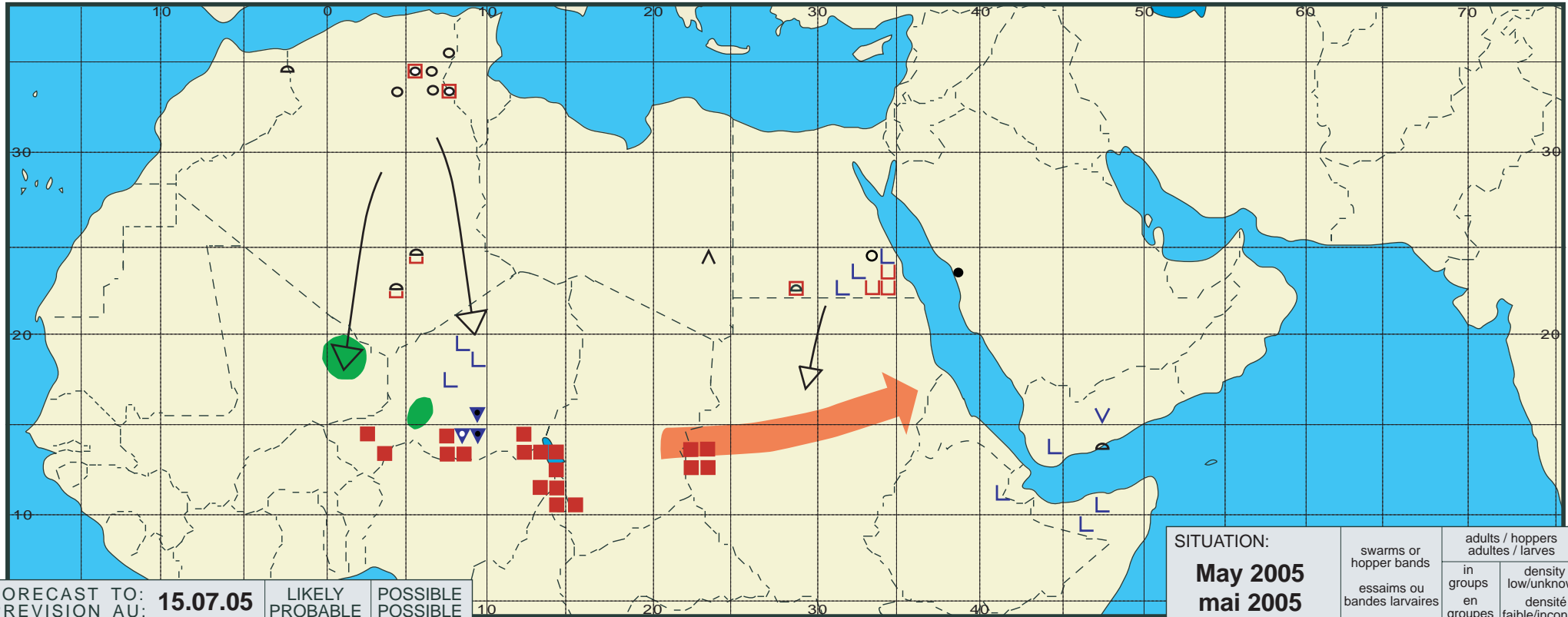




# Desert Locust Summary

## Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU: 15.07.05	LIKELY PROBABLE	POSSIBLE POSSIBLE
favourable breeding conditions conditions favorables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: May 2005 mai 2005	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)			