



warning level: **CAUTION (Mauritania)**

# DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 363

(31 December 2008)



## General Situation during December 2008 Forecast until mid-February 2009

In early December, there was a sharp increase in locust activity in northwest Mauritania where hoppers and adults formed small groups in a limited but remote area of sand dunes. National teams were immediately mobilized and treated more than 14,000 ha which brought the situation under control by the end of the month. Nevertheless, there is a moderate risk that low numbers of residual adults will move to northern Mauritania and adjacent areas of Western Sahara, Morocco and western Algeria. Therefore, surveys in these areas should be intensified. Elsewhere, the Desert Locust situation remained calm as little rain fell in the recession area for the second consecutive month. Consequently, only a few locusts were present in the winter breeding areas along both sides of the Red Sea, and breeding was reported in Eritrea and Saudi Arabia. During the forecast period, small-scale breeding is expected to occur on both sides of the Red Sea and on the northwest coast of Somalia. Although locust numbers may increase slightly, no significant developments are expected.

**Western Region.** As vegetation began to dry out in northwest Mauritania in early December, solitary hoppers concentrated and increased in density, fledged and formed small groups of adults. The infestations, which originated from local breeding during the autumn, were confined to a relatively small area east of Nouakchott. In order to prevent further grouping and the possibility of swarm formation, ground teams treated most of the infestations. As

a precaution, surveys were increased in **Western Sahara** and **Morocco**, especially in those areas that received unusually heavy rains in September, but no locusts were found. Nevertheless, regular surveys should be maintained in order to detect any adult movement and breeding that could occur during the forecast period. No surveys were carried out and no locusts were reported elsewhere in the Region although low numbers of adults may be present and could persist in northern **Mali**, **Niger** and southern **Algeria**.

**Central Region.** Low numbers of solitary adults were present and breeding during December in the winter breeding areas along the Red Sea coast in **Saudi Arabia** and **Eritrea**. A similar situation is likely in **Yemen**. Scattered adults were present on the coast in **Sudan**. Ecological conditions were more favourable along the northern Eritrean coast than in the other countries. At the end of the month, there were unconfirmed reports of locusts near the Sudanese border. Unless additional rains fall, only limited breeding is expected to occur during the forecast period along the Red Sea coast. Small-scale breeding is also likely to take place on the northwest coast in northern **Somalia** where ecological conditions improved during December. Consequently, the situation is expected to remain calm in the Region.

**Eastern Region.** The locust situation remained calm in the Region during December as generally dry conditions prevailed and no locusts were reported. A few adults could appear by the end of the forecast period in coastal areas of Baluchistan in southeast **Iran** and western **Pakistan**. Early breeding may occur if rains fall and temperatures remain warm.

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, 00153 Rome, Italy. It is also available on the Internet.

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### Weather & Ecological Conditions in December 2008

**Very little rain fell in the recession area during December for the second consecutive month. As a result, ecological conditions were favourable for breeding in only a few places along both sides of the Red Sea, in northwest Somalia and in northwest Africa.**

In the **Western Region**, very little rain fell during December except for light showers in northwest Libya and northern parts of Western Sahara. Consequently, vegetation remained green in the northeast of Western Sahara east of Smara but was starting to dry out in some places further south between Tichla and Bir Anzarane. In northwest Mauritania, vegetation was green in Inchiri, northeast Trarza, southeast Adrar and in western Tiris Zemmour but by mid-month, it was drying out in the Zgueimir and Aouker areas south of Akjoujt. In the spring breeding areas, vegetation was green south of the Atlas Mountains in Morocco along the Algerian border south of Tata, and was becoming green in the northeast between Erfoud and Figuig. Elsewhere, green vegetation persisted in a few wadis in the Adrar des Iforas in northern Mali and in the Air Mountains in Niger.

In the **Central Region**, very little rain fell in December except for light showers on the Red Sea coast in Saudi Arabia between Jizan and Qunfidah, and on the eastern coast of central Oman between Marmul and Duqm. Nevertheless, ecological conditions improved in parts of the winter breeding areas along both sides of the Red Sea from November rains, mainly between Massawa (Eritrea) and Aqiq (Sudan), in the Tokar Delta, from Bayt Al Faqih to Al Zurah in Yemen, and between Jizan and Qunfidah in Saudi Arabia. Vegetation became green in northeast Sudan in Wadi Diib west of Sufiya but was dry further north in Egypt except on the coast between Abu Ramad and Halaib. Green vegetation developed along the Gulf of Aden coast in northwest Somalia between Lughaye and Djibouti, and in the interior of Yemen in Wadi Hadhramaut and the smaller wadis to the west up to Shabwah and north towards Minwakh. In Oman, vegetation was drying out in the Musandam and Dhofar regions.



### Area Treated

Mauritania 925 ha (21-30 November)  
14,027 ha (1-27 December)



### Desert Locust Situation and Forecast

( see also the summary on page 1 )

#### WESTERN REGION

##### **Mauritania**

##### • SITUATION

Nomads reported increased locust activity at the end of the first week of December when late instar hoppers formed numerous small patches and groups as vegetation dried out in the Zgueimir area east of Nouakchott between Aguilal Faye (1827N/1444W) and Akjoujt (1945N/1421W). The infestations were located between sand dunes within an area of about 50 km by 40 km. By the 10<sup>th</sup>, most of the hoppers had fledged and 90% of the population consisted of immature solitary adults in small groups at densities up to 8,000 adults/ha and, in a few cases, 20 adults/m<sup>2</sup>. Scattered solitary hoppers and immature and mature adults were also present south of Aguilal Faye and Oujeft (2003N/1301W), and near Guelb er Richat (2107N/1124W), and scattered mature solitary adults were seen in parts of Inchiri and near Zouerate (2244N/1221W). From the second decade onwards, an increasing number of isolated immature adults were seen west of Akjoujt, near Zouerate and close to Bir Moghreïn (2510N/1135W). Ground teams treated 14,027 ha on 1-27 December, and the situation had calmed down by the end of the month.

##### • FORECAST

*Some of the residual populations in the Zgueimir area are likely to persist while others will move north to Inchiri and Tiris Zemmour. In both cases, the immature adults will slowly mature due to low temperatures. Those adults that are already mature could lay eggs in areas where conditions are favourable, but subsequent hatching is expected to be limited. Surveys should be maintained in all areas to monitor the situation on a regular basis.*

## Mali

### • SITUATION

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

### • FORECAST

*Scattered locusts are likely to be present and are expected to persist in the main wadis of the Adrar des Iforas. Breeding is unlikely to occur unless there is rainfall during the forecast period.*

## Niger

### • SITUATION

No reports were received in December.

### • FORECAST

*Scattered locusts are likely to be present and are expected to persist in parts of the Air Mountains and breed on a small-scale if rains fall during the forecast period.*

## Chad

### • SITUATION

No reports were received in December.

### • FORECAST

*Low numbers of adults are likely to concentrate and persist in areas that remain green.*

## Senegal

### • SITUATION

No reports were received in December.

### • FORECAST

*No significant developments are likely.*

**Benin, Burkina Faso, Cameroon, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Nigeria, Sierra Leone and Togo**

### • FORECAST

*No significant developments are likely.*

## Algeria

### • SITUATION

No reports received.

### • FORECAST

*Low numbers of solitary adults are likely to be present and will persist in the extreme south along the Malian border between Bir Bou Mokhtar and Tin Zaouatene. Locust numbers could appear near Tindouf from adjacent areas in Mauritania.*

## Morocco

### • SITUATION

No locusts were seen during surveys carried out in December along the Algerian border in the northeast between Bouanane (3202N/0303W) and Figuig (3207N/0113W) and south of Tata (2944N/0758W) as well as in the southern portion of the Western Sahara between Tichla (2137N/1453W) and Bir Anzarane

(2353N/1431W).

### • FORECAST

*Locust numbers will increase slightly in Western Sahara as low numbers of adults are likely to arrive from adjacent areas in northwest Mauritania. Surveys should be maintained to monitor the situation on a regular basis.*

## Libyan Arab Jamahiriya

### • SITUATION

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

### • FORECAST

*No significant developments are likely.*

## Tunisia

### • SITUATION

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

### • FORECAST

*No significant developments are likely.*

## CENTRAL REGION

### Sudan

### • SITUATION

During December, scattered mature solitary adults were present at densities up to 100 adults/ha on the Red Sea coast near Suakin (1906N/3719E) and Aqiq (1813N/3811E) and in subcoastal areas in Wadi Diib near Tomala (2002N/3551E). No locusts were seen in the Tokar Delta or Khor Baraka.

### • Forecast

*Small-scale breeding will occur on the Red Sea coastal plains between Suakin and Karora and in Wadi Diib near Tomala and Sufiya. Breeding may also take place in the Tokar Delta and other areas that receive any rainfall or runoff. Consequently, locust numbers will increase slightly during the forecast period.*

### Eritrea

### • SITUATION

As a result of small-scale breeding in November on the Red Sea coast, isolated second to fourth instar hoppers and mature solitary adults were seen at two places on the edge of the Akbanazouf Plain northeast of Shelshela (1553N/3906E) on 18-21 December. At the end of the month, there were



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unconfirmed reports from travelers and nomads of hopper bands on the coast near the Sudanese border.

- **FORECAST**

*Local breeding will continue on the Red Sea coast near Shelshela where fledging will occur in January. Small-scale breeding is likely to be in progress in other areas between Sheib and Karora and will continue during the forecast period, causing locust numbers to increase slightly.*

### **Ethiopia**

- **SITUATION**

No surveys were carried out and no locusts were reported from 3 November to mid December.

- **FORECAST**

*No significant developments are likely.*

### **Djibouti**

- **SITUATION**

No reports were received in December.

- **FORECAST**

*No significant developments are likely.*

### **Somalia**

- **SITUATION**

No locusts were seen during a survey carried out on 14-20 December along the northwest coast between Djibouti and Berbera (1028N/4502E) as well as on the plateau between Hargeisa (0931N/4402E) and Boroma (0956N/4313E).

- **FORECAST**

*Solitarious adults are expected to appear on the northwest coast west of Lughaye and breed on a small scale in areas of green vegetation.*

### **Egypt**

- **SITUATION**

During December, three ha were infested with mature solitarious adults near Abu Simbel (2219N/3138E). No locusts were seen during surveys in the Allaqi area east of Lake Nasser and on the Red Sea coast and nearby interior areas south of Abu Ramad (2224N/3624E).

- **FORECAST**

*Isolated adults are likely to persist near Lake Nasser. Low numbers of adults could appear on the southern coast of the Red Sea near Abu Ramad and breed if rainfall occurs.*

### **Saudi Arabia**

- **SITUATION**

During December, isolated immature and mature solitarious adults persisted in a few farms on the Red Sea coast north of Jeddah (2130N/3910E). Isolated adults were seen on the coast south of Jeddah near Lith (2008N/4016E) and Qunfidah (1909N/4107E), and a few adults were copulating during the second week near Lith. No locusts were seen elsewhere on the coast or in the interior.

- **FORECAST**

*Limited hatching will occur on the Red Sea coast near Lith early in the forecast period. Small-scale breeding is also likely to take place in areas of recent rainfall, mainly between Jizan and Qunfidah, causing locust numbers to increase slightly.*

### **Yemen**

- **SITUATION**

No reports received.

- **FORECAST**

*Low numbers of adults are likely to be present along the Red Sea coastal plains and on the Gulf of Aden coast near Aden. Small-scale breeding is probably in progress in both areas and is expected to continue during the forecast period, causing locust numbers to increase slightly. There is a low risk that scattered adults could be present in Wadi Hadhramaut and some of the smaller wadis to the west up to Shabwah and north towards Minwakh.*

### **Oman**

- **SITUATION**

No locusts were seen during surveys carried out in the Musandam and Dhofar regions during December.

- **FORECAST**

*No significant developments are likely.*

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

- **FORECAST**

*No significant developments are likely.*

## **EASTERN REGION**

### **Iran**

- **SITUATION**

No locusts were seen during surveys carried out on the southeast coast near Jask (2540N/5746E) from 27 November to 8 December.

- **FORECAST**

*Low numbers of adults could appear on the southeast coast between Jask and the Pakistani border and breed on a small-scale if rainfall occurs and temperatures remain warm.*

## Pakistan

### • SITUATION

During the second half of November, locust numbers declined in the Cholistan Desert along the Indian border south of Bahawalpur (2924N/7147E). Immature and mature solitarious adults at densities up to 100 adults/ha were seen at 15 places.

No locust activity was reported in the summer breeding areas during the first half of December.

### • FORECAST

*Low numbers of adults could appear on the Baluchistan coast between Pasni and the Iranian border and breed on a small-scale if rainfall occurs and temperatures remain warm.*

## India

### • SITUATION

No locusts were seen during extensive surveys in Rajasthan and Gujarat in the second half of November and in December.

### • FORECAST

*No significant developments are likely.*

## Afghanistan

### • SITUATION

No reports received.

### • FORECAST

*No significant developments are likely.*

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.

**Google group.** FAO DLIS has established a Google group for national locust information officers to exchange opinions and share experiences regarding data management and analysis, GIS, eLocust2 and satellite imagery. Interested information officers should contact DLIS (ecl@fao.org) for details.

**MODIS imagery.** Columbia University's International Research Institute for Climate and Society (IRI) provides 16-day 250-metre resolution MODIS imagery as well as daily and decadal rainfall imagery for monitoring breeding conditions in the Desert Locust recession area. These products can be downloaded in different formats suitable for GIS at: [http://iridl.ideo.columbia.edu/maproom/.Food\\_Security/.Locusts/index.html](http://iridl.ideo.columbia.edu/maproom/.Food_Security/.Locusts/index.html). The site is available in English and French. Address comments and questions to Pietro Ceccato (pceccato@iri.columbia.edu).

**New information on Locust Watch.** Recent additions to the web site are:

- **Desert Locust Bulletins.** Previous FAO bulletins dating from 1979 to the present (Archives section) Links to the above information can be found in the *Latest Additions* section on Locust Watch.

**2009 events.** The following activities are scheduled:

- **DLCC.** 39<sup>th</sup> Session, Rome (10-13 March)



## Announcements

**Desert Locust warning levels.** A colour-coded scheme indicates the seriousness of the current Desert Locust situation: green for *calm*, yellow for *caution*, orange for *threat* and red for *danger*. The scheme is applied to the Locust Watch web page and to the monthly bulletin's header. The levels indicate the perceived risk or threat of current Desert Locust infestations to crops and appropriate actions are suggested for each level.

**Locust reporting.** During calm (green) periods, countries should report at least once/month and send RAMSES data with a brief interpretation. During caution (yellow), threat (orange) and danger (red) periods, often associated with locust outbreaks, upsurges and plagues, RAMSES output files with a brief interpretation should be sent at least twice/week within 48 hours of the latest survey. Affected countries are also encouraged to prepare decadal bulletins summarizing the situation. All information should be sent by e-mail to the FAO/ECLO Desert Locust Information Service (ecl@fao.org). Information received by the end of the month will be included in



## 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).



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### **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.

### **WARNING LEVELS**

#### **GREEN**

- Calm. No threat to crops. Maintain regular surveys and monitoring.

#### **YELLOW**

- Caution. Potential threat to crops. Increased vigilance is required; control operations may be needed.

#### **ORANGE**

- Threat. Threat to crops. Survey and control operations must be undertaken.

#### **RED**

- Danger. Significant threat to crops. Intensive survey and control operations must be undertaken.

### **REGIONS**

#### **WESTERN**

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

#### **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.



# Desert Locust Summary

## Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU: <b>15.02.09</b>	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: <b>Dec 2008</b> <b>déc 2008</b>	swarms or hopper bands	adults / hoppers	
	essaims ou bandes larvaires	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)			