

warning level: **THREAT**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 423



**General Situation during December 2013
Forecast until mid-February 2014**

(3 Jan 2014)

The Desert Locust situation remained critical along both sides of the Red Sea in December. Hopper and adult groups, hopper bands, and swarms formed in Yemen, Saudi Arabia and Eritrea. Smaller infestations were present in Sudan. Control operations were carried out in all countries. As ecological conditions remain favourable, a second generation of breeding will cause locust numbers to increase further and more bands and swarms are expected to form. The outbreak in northwest Mauritania has nearly come to an end as a result of intensive control efforts. Nevertheless, small-scale breeding is likely to occur in those areas that remain favourable in the coming months. A number of locust reports in northern Somalia are in the process of being confirmed. Heavy rains associated with a cyclone fell over much of the territory in November.

Western Region. Ground control operations continued during December against hopper groups, bands, and adult groups in northwest Mauritania, treating nearly 15,000 ha. This caused locust infestations to decline by the end of the month. Nevertheless, another generation of breeding is likely to occur but on a small and limited scale in those areas that remain favourable. Breeding may also occur in north and northeast Mauritania where good rains fell at mid-month. Low numbers of solitary adults were maturing in parts of **Western Sahara**

where small-scale breeding is expected during the forecast period. In **Niger**, hopper groups and adults were present in the Ténéré Desert while isolated solitary adults persisted in parts of the summer breeding areas. No locusts were reported elsewhere in the Region.

Central Region. Locust infestations continued to increase during December along the Red Sea coastal plains in **Yemen, Saudi Arabia and Eritrea** where a second generation of breeding was underway, causing numerous groups of hoppers and adults as well as hopper bands to form. Swarms formed in Yemen and Saudi Arabia. One swarm reportedly crossed the border from Eritrea to **Sudan** while others moved from Yemen to Saudi Arabia. Control operations treated some 80,000 ha in the four countries, including aerial operations in Saudi Arabia, Eritrea and Sudan. As ecological conditions remain favourable, second generation breeding will continue, causing more hopper bands and swarms to form during the forecast period. Elsewhere, there were numerous reports of locust infestations in northern **Somalia** that could not be confirmed yet. Nevertheless, groups of adults and perhaps a small swarm are thought to have laid eggs on the northeast coast.

Eastern Region. No locusts were reported and the situation remained calm during December.

The FAO Desert Locust Bulletin is issued every month by the Desert Locust Information Service, AGP Division (Rome, Italy). It is supplemented by Alerts and Updates during periods of increased Desert Locust activity. All products are distributed by e-mail and are available on the Internet.

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Weather & Ecological Conditions in December 2013

Ecological conditions remained favourable for breeding in northwest Mauritania and in the winter breeding areas along both sides of the Red Sea except for Egypt. Conditions improved in Western Sahara and northern Somalia.

In the **Western Region**, good rains fell in parts of Northwest Africa mainly during the first half of December. In Mauritania, light to moderate rains fell in the north and northeast (Tiris-Zemmour) at mid-month that should give rise to favourable breeding conditions. Ecological conditions remained favourable in the northwest but annual vegetation started to dry out after mid-month in some places. Light rain fell at times during the first two decades in central areas of Western Sahara, and in southwest Libya. Ecological conditions were favourable for breeding in parts of the Adrar Settouf region in Western Sahara. In Algeria, light rain fell at times in parts of the western and central Sahara. Green vegetation was present near Tindouf, Bechar and Illizi. Dry conditions prevailed in the northern Sahel of West Africa.

In the **Central Region**, good rains fell along parts of the coastal plains on both sides of the Red Sea in December that will allow ecological conditions to remain favourable for breeding. In Eritrea, breeding conditions remained favourable along the Red Sea coast from Tio to Karora in areas of recent rainfall and runoff. In Sudan, moderate rains fell on the Red Sea coast from Tokar Delta to the Eritrean border at times during the second half of December, and conditions were favourable for breeding. In Yemen, light to moderate rain fell on the northern coast of the Red Sea near Abs and on the Gulf of Aden coastal plains at mid-month. Moderate rains fell again in the last week of the month on the Gulf of Aden coast. In Saudi Arabia, moderate rains fell in most of the breeding areas on the central and southern coastal plains of the Red Sea. Consequently, ecological conditions remained favourable for breeding from Lith, Saudi Arabia to Al Zuhrah, Yemen but were starting to dry out on the central Tihama of Yemen. Dry conditions prevailed in southeast Egypt and in adjacent areas

of northeast Sudan. In Oman, light rains fell at times on the central coast between Duqm and Marmul but dry conditions prevailed. In northern Somalia, ecological conditions were favourable for breeding on the northwest coast and in parts of the escarpment and plateau where heavy rains fell in November from Tropical Cyclone 03A.

In the **Eastern Region**, light rains fell during the last decade of December in parts of the spring breeding areas in the interior of southeast Iran and western Pakistan.



Area Treated

During December, control operations treated nearly 93,000 ha compared to about 86,000 ha in November.

Eritrea	16,200 ha (Nov, revised)
	38,000 ha (December)
Mauritania	14,483 ha (December)
Saudi Arabia	10,990 ha (December)
Sudan	5,894 ha (December)
Yemen	15,989 ha (Nov, revised)
	24,099 ha (December)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During December, ground control operations continued against late instar hopper groups and bands at densities of more than 70 hoppers/m² and groups of mainly immature adults at densities up to 38,000 adults/ha in the northwest near Akjoujt (1945N/1421W), Tasiast (2034N/1531W), and southwest of Bennichab (1932N/1512W). Similar infestations were reported in the *Parc National du Banc d'Arguin* where chemical control was not possible. After mid-month, nearly all of the hoppers had fledged, and infestations and control operations were declining. Ground teams treated 14,483 ha during December. Further north, scattered immature and mature solitary adults were present near Zouerate (2244N/1221W).

• FORECAST

Residual adult populations in the northwest will mature and another generation of breeding, albeit on a smaller scale than previous breeding, is likely to occur in those areas that remain favourable. Small-

scale breeding may also occur near Zouerate and there remains a risk that adults may move further to north and northeast Tiris-Zemmour during periods of warm southerly winds and breed in areas of recent rainfall.

Mali

• SITUATION

During December, no locusts were seen by surveys carried out in the west near Kayes (1426N/1128W) and in central areas between Nara (1510N/0717W) and Gao (1616N/0003W).

• FORECAST

Low numbers of locusts are likely to be present and will persist in parts of the Adrar des Iforas.

Niger

• SITUATION

During December, isolated mature solitary adults persisted in the Tamesna between Arlit (1843N/0721E) and Tassara (1650N/0550E), while mature solitary and *transiens* adults were seen south of Agadez (1658N/0759E) in the Tadress area. No locusts were seen south of Tassara. A few solitary hoppers and immature adults were reported between Arlit and the Tazerzait Plateau. Locust numbers increased after mid-month in the Ténéré Desert where groups of mainly second and third instar hoppers at densities of up to 8 hoppers/m² and maturing solitary and *transiens* adults at densities up to 1,000 adults/ha were present northwest of Fachi (1806N/1134E).

• FORECAST

Scattered adults are likely to move from the Ténéré to the southeastern Air Mountains where they will persist during the forecast period.

Chad

• SITUATION

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

• FORECAST

No significant developments are likely.

Senegal

• SITUATION

No reports were received during 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

During December, no locusts were seen during surveys carried out near Adrar (2753N/0017W) and west of Tamanrasset (2250N/0528E).

• FORECAST

Scattered adults may be present and breeding on a small scale in irrigated areas near Adrar. Low numbers of adults may appear near Tindouf and Illizi where small-scale breeding may occur once temperatures increase after January.

Morocco

• SITUATION

During December, isolated immature solitary adults were seen at a few places in the Adrar Settouf region of Western Sahara near Ma'Tallah (2223N/1502W) and Aousserd (2233N/1419W) while mature adults were present in the north near Smara (2644N/1140W). No locusts were seen south of the Atlas Mountains near Guelmim (2859N/1003W).

• FORECAST

Adults and a few small groups may appear in southern areas of the Western Sahara. Small-scale breeding will occur in areas that receive rainfall.

Libya

• SITUATION

No locusts were reported during December.

• FORECAST

Low numbers of adults are likely to appear in the southwest near Ghat and breed on a small scale if rainfall occurs.

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, groups of immature and mature adults persisted in the summer breeding areas of the interior near the Nile Valley southwest of Atbara and southeast of Abu Hamed. Similar infestations mixed with solitary hoppers were also present on



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the western side of the Red Sea Hills north of Haiya. Control operations treated 2,240 ha of which 800 ha were by air. No further control was carried out after 17 December.

In the winter breeding areas, more hopper bands formed in the northeast along W. Oko near Tomala (2002N/3551E) and scattered adults were present. In the Tokar Delta (1827N/3741E), solitary hoppers of all instars formed groups and groups of adults were present and maturing. Local breeding also occurred further south along the Eritrean border near Karora (1745N/3820E) where solitary hoppers and adults were present. The adults were maturing and forming groups. Limited egg laying was seen in both areas. On the 23rd, a medium density immature swarm reportedly crossed the border from Eritrea. Control operations treated 3,654 ha of which 2,600 were by air.

• FORECAST

A second generation of breeding will cause locust numbers to increase in the Tokar Delta and on the southern coastal plains. Further breeding may also occur in Wadi Oko. Hatching will occur during January and small hopper groups and perhaps a few bands may form.

Eritrea

• SITUATION

During December, small late instar hopper groups continued to form on the central Red Sea coastal plains, mainly in crops between Wekiro (1548N/3918E) and Mersa Cuba. Fledging occurred and immature adults formed small groups. Early instar hopper bands were present south of Massawa (1537N/3928E) to Mersa Fatma (1454N/4018E) and on the northern coast near Karora (1745N/3820E) and the Sudanese border. By the end of the month, groups of adults were maturing and laying eggs in several areas. Control operations treated 44,160 ha of which 7,400 ha were by air from 23 November to 22 December.

• FORECAST

Hoppers will continue to form groups and small bands on the Red Sea coast between Tio and Karora that could lead to the formation of adult groups and a few small swarms. Another generation of breeding will cause locust numbers to increase further with egg-laying and hatching during January.

Ethiopia

• SITUATION

During December, isolated immature solitary adults were seen at two places near Ayasha (1045N/4234E) and the border of northern Somalia. No locusts were seen near Dire Dawa (0935N/4150E) and Jijiga (0922N/4250E).

• FORECAST

No significant developments are likely.

Djibouti

• SITUATION

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

• FORECAST

Scattered adults may be present and could breed on the coastal plains east of Djibouti town.

Somalia

• SITUATION

During the first week of December, there were unconfirmed reports of hopper bands on the northwest coast near Gerisa (1036N/4325E) but subsequent surveys only found isolated mature solitary adults nearby. Scattered late instar solitary hoppers, fledglings, and immature adults were present on the escarpment northeast of Burao (0931N/4533E), including one hectare of scattered late instar gregarious hoppers. Locals reported locusts on the coast near Las Koreh (1110N/4812E) at Ceel Xasan (1117N/4847E) on 1 December. There were also unconfirmed reports of at least two mature swarms moving southwest towards the Golis Mountains during the first week. Television footage showed groups of solitary and *transiens* adults copulating, and egg-laying was reported by locals. More unconfirmed reports were received at the end of the month from the northwest coast.

• FORECAST

Breeding is likely to be in progress in some coastal, escarpment and plateau areas as far east as Las Koreh. If so, locust numbers will increase, and hopper and adults may form small groups.

Egypt

• SITUATION

During December, no locusts were seen during surveys carried out on the Red Sea coast and subcoastal areas between Berenice (2359N/3524E) and the Sudan border, along both sides of Lake Nasser in the Allaqi and Garf Husein (2317N/3252E) areas, and in the northwest near Siwa (2912N/2531E) and Salum (3131N/2509E).

• **FORECAST**

Adults and perhaps a few small groups may appear along the Red Sea coast south of Shalatyn and breed on a small scale if rainfall occurs.

Saudi Arabia

• **SITUATION**

During December, a second generation of breeding continued on the central Red Sea coastal plains between Lith (2008N/4016E) and Qunfidah (1909N/4107E) and on the southern plains near Jizan (1656N/4233E) where groups of mature adults and swarms formed and laid eggs, and hoppers formed groups and bands of all instars. Some of the infestations extended into the Asir Mountains near Al Baha (2001N/4129E) and Abha (1813N/4230E). Swarms were reported coming from adjacent coastal areas of Yemen, and a few crossed the Asir Mountains, reaching the Najran (1729N/4408E) area. Aerial and ground control operations treated 10,990 ha during December.

• **FORECAST**

Locust numbers will increase further along the Red Sea coastal plains as second-generation hatching and band formation continues between Lith and Qunfidah and near Jizan. New groups and small swarms of immature adults are likely to form from early January onwards.

Yemen

• **SITUATION**

During the first half of December, several hundred late instar hopper groups and bands continued to be present on the northern coast of the Red Sea between Al Zuhrah (1541N/4300E) and Midi (1619N/4248E) and, to a lesser extent, on the central coast near Hodeidah (1450N/4258E). As hoppers fledged, there was an increasing number of immature adult groups and at least a dozen swarms formed and matured during the remainder of the month. Some of the swarms moved north to the Saudi Arabia border and the foothills west of Sada'a (1656N/4345E). Egg-laying occurred on the northern coast during the second week by several mature adult groups and on the 22nd by a mature swarm. Ground teams treated 24,099 ha during December. On the Gulf of Aden coast, a few third to fifth instar hopper groups and bands as well as scattered immature and mature solitary adults persisted during the first week near Am Rija (1302N/4434E). An immature swarm was seen on the 5th in the nearby foothills. Field operations were limited due to insecurity and beekeeping.

• **FORECAST**

First-generation adult groups and swarms will continue to form on the northern Tihama during January, mature and lay eggs. Locust numbers will

increase as second-generation hatching and band formation occur from early January onwards. New groups and swarms are likely to form in February. Locust numbers will also increase on the Gulf of Aden coast west of Aden where a second generation of breeding will take place, giving rise to hopper groups and bands.

Oman

• **SITUATION**

No locusts were seen during surveys carried out in December in the northern interior southwest of Ibri (2314N/5630E), between Adam (2223N/5731E) and Ibra (2243N/5831E), on the Batinah coast near Jamma (2333N/5733E), and on the Musandam Peninsula.

• **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 southeastern coastal plains near Jask (2540N/5746E) and Chabahar (2517N/6036E) in December.

• **FORECAST**

Low numbers of adults may appear in areas of recent rainfall along the southeast coast at the end of the forecast period.

Pakistan

• **SITUATION**

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

• **FORECAST**

Low numbers of adults may appear in areas of recent rainfall along the Baluchistan coast at the end of the forecast period.



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India

• SITUATION

No locusts were seen during surveys carried out in December in Rajasthan and Gujarat.

• FORECAST

No significant developments are likely.

Afghanistan

• SITUATION

No reports received.

• FORECAST

No significant developments are likely.



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 (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 tools and resources. FAO has developed a number of tools that National locust information officers and other interested individuals can use for Desert Locust early warning and management:

- **MODIS.** Vegetation imagery every 16 days (http://iridl.Ideo.columbia.edu/maproom/.Food_Security/Locusts/.Regional/.MODIS/index.html)
- **MODIS.** Daily rainfall imagery in real time (http://iridl.Ideo.columbia.edu/maproom/.Food_Security/Locusts/index.html)
- **RFE.** Rainfall estimates every day, decade and month (http://iridl.Ideo.columbia.edu/maproom/.Food_Security/Locusts/index.html)
- **Greenness maps.** Dynamic maps of green vegetation evolution every decade (http://iridl.Ideo.columbia.edu/maproom/Food_Security/Locusts/Regional/greenness.html)
- **FAODLIS Google site.** A platform for sharing problems, solutions, tips and files for eLocust2, eLocust2Mapper, RAMSES and remote sensing (<https://sites.google.com/site/faodlis>)
- **FAOLOLUST Twitter.** The very latest updates are posted on Twitter (<http://www.twitter.com/faolocust>)
- **FAOLocust Facebook.** A social means of information exchange using Facebook (<http://www.facebook.com/faolocust>)
- **Slideshare.** Locust presentations and photos available for viewing and download (<http://www.slideshare.net/faolocust>)
- **eLERT.** A dynamic and interactive online database of resources for locust emergencies (<http://sites.google.com/site/elertsite>)

New information on Locust Watch. Recent additions to the web site (www.fao.org/ag/locusts) are:

- **Current threats.** Information section
- **Yemen outbreak.** Archives – Outbreaks 2013 section

eLocust3. A demonstration version is available for viewing and downloading at Slideshare in:

English: <http://www.slideshare.net/FAOLocust/elocust3-apreviewenglishversion>

French: <http://www.slideshare.net/FAOLocust/elocust3-a-preview-french-version>

Arabic: <http://www.slideshare.net/FAOLocust/elocust3-apreview-arabicversion>

Greenness maps. Dynamic maps of green vegetation evolution every decade can now be downloaded from Columbia University's IRI (USA) website: http://iridl.Ideo.columbia.edu/maproom/Food_Security/Locusts/Regional/greenness.html

2014 events. The following activities are scheduled or planned:

- **DLCC.** Desert Locust Control Financing System meeting, FAO Rome (11-13 March)

- **CLCPRO/EMPRES-RO.** Western Region Locust information officers workshop, Agadir, Morocco (24-28 March)
- **CRC/SWAC.** Inter-regional Locust information officers workshop, Cairo, Egypt (6-10 April)



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 km² • band: 1 - 25 m²

SMALL

- swarm: 1 - 10 km² • band: 25 - 2,500 m²

MEDIUM

- swarm: 10 - 100 km² • band: 2,500 m² - 10 ha

LARGE

- swarm: 100 - 500 km² • band: 10 - 50 ha

VERY LARGE

- swarm: 500+ km² • 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.



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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

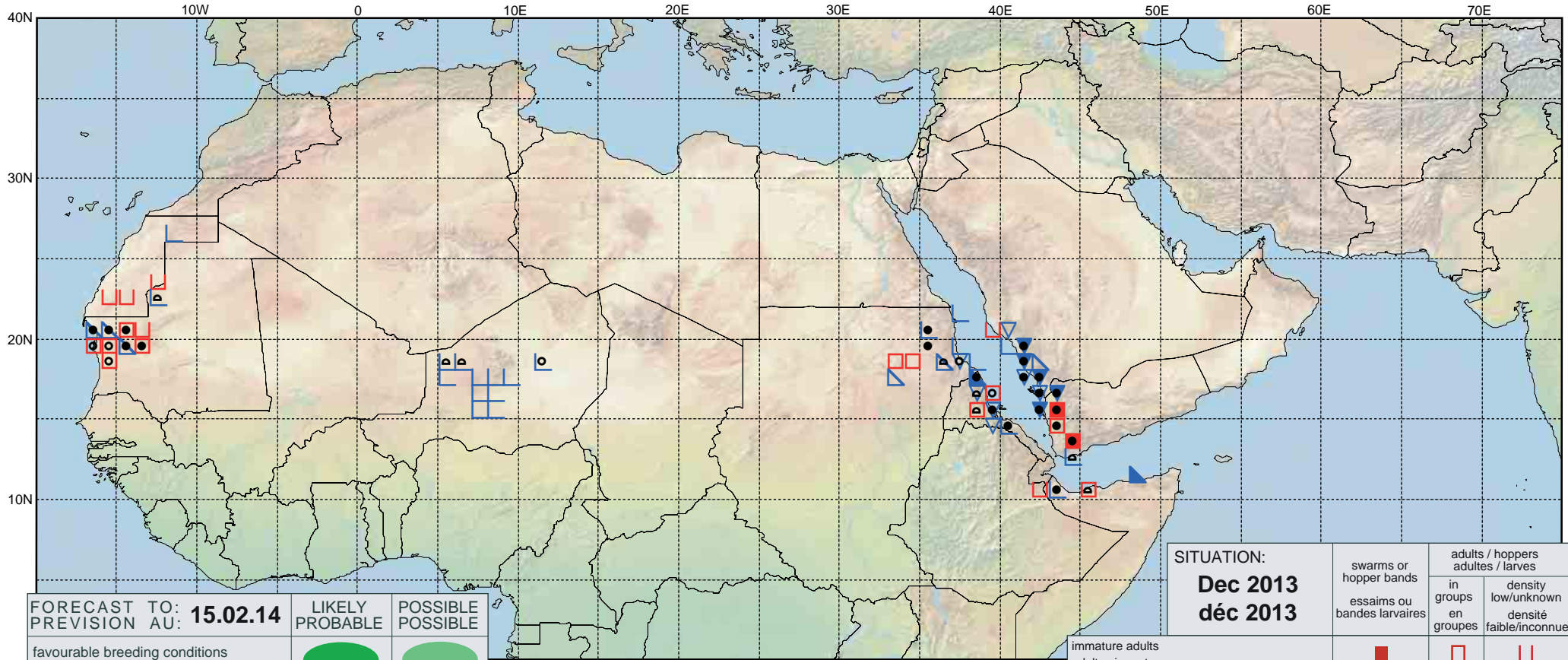
- locust-affected countries in South-West Asia: Afghanistan, India, Iran and Pakistan.



Desert Locust Summary

Criquet pèlerin - Situation résumée

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FORECAST TO:
PREVISION AU: **15.02.14**

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:

Dec 2013
déc 2013

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)

