

warning level: **CAUTION** (Yemen)

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 421



**General Situation during October 2013
Forecast until mid-December 2013**

(4 Nov 2013)

Locust numbers increased and small hopper bands formed in several countries during October. The situation remained the most serious in Yemen as swarms formed in the interior where control operations were not possible, moved to the Red Sea and Gulf of Aden coastal plains, and laid eggs that hatched and hoppers formed groups and small bands. Some infestations extended to adjacent areas of Saudi Arabia. An outbreak developed in Mauritania where hopper and adult groups and small bands formed in the west and northwest. Locusts were concentrating in Niger and formed groups and bands in the interior of Sudan. Control operations were undertaken in all of the affected countries. During the forecast period, locusts will concentrate and could form a few small groups in northern Mali, Niger and Chad as vegetation dries out. Locust numbers will increase further in west and northwest Mauritania and in the winter breeding areas along both sides of the Red Sea where hopper groups and bands are likely to form. A few small swarmlets may form in Yemen and Mauritania.

Western Region. An outbreak developed within an area of about 120,000 km² in west and northwest Mauritania where adults arrived from summer breeding areas in the south, concentrated, matured, and formed groups. Good rains allowed egg laying to continue from September. Hatching occurred during October and hoppers formed small groups and bands. Ground teams treated nearly 3,000 ha. As breeding

continues, locust numbers are expected to increase further, leading to the formation of groups, bands and perhaps a few small swarmlets. There is a high possibility that infestations may extend into southern parts of **Western Sahara**. In **Niger**, small-scale breeding continued mainly on the Tamesna Plains and, by the end of October, adults were concentrating and becoming *transiens* as vegetation started to dry out. In **Chad**, small-scale breeding caused an increase in adult numbers and a few small groups could form as vegetation dries out in November.

Central Region. Locust populations shifted from the summer to the winter breeding areas during October. The situation deteriorated further in **Yemen** as swarms formed in the interior and moved to the coastal plains of the Red Sea and Gulf of Aden and laid eggs in areas where hopper groups and bands had already formed from September breeding. Only limited control operations could be carried out. In **Saudi Arabia**, hopper and adult groups were treated in the interior along the Yemen border, and small-scale breeding occurred on the central Red Sea coast. In late October, adult groups arrived on the southern coastal plains near Jizan from Yemen. In **Sudan**, there may be early signs that an outbreak is developing in the summer breeding areas of the interior where hopper and adult groups and a few hopper bands formed. Adult groups moved to the northeast where breeding was already in progress and to the Red Sea coast. Good rains fell in late October in northeast Sudan and southeast **Egypt**. Locust numbers will continue to increase along both sides of the Red Sea with hatching in November that will lead to the formation of groups and small hopper bands. A few small swarmlets could form in Yemen in December. Elsewhere, local breeding occurred in eastern **Ethiopia** where good rains fell, and isolated adults were present in northern **Oman**.

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.

Telephone: +39 06 570 52420 (7 days/week, 24 hr)

Facsimile: +39 06 570 55271

E-mail: eclo@fao.org

Internet: www.fao.org/ag/locusts

Facebook: www.facebook.com/faolocust

Twitter: twitter.com/faolocust



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Eastern Region. The situation remained calm during October. Locust numbers continued to decline as vegetation dried out in the summer breeding areas along both sides of the Indo-Pakistan border. No significant developments are likely during the forecast period.



Weather & Ecological Conditions in October 2013

Summer rains ended in the Sahel of West Africa and Sudan. Good rains fell in western Mauritania, along the Red Sea coast and in the Horn of Africa. Ecological conditions remained favourable for breeding in Mauritania and Yemen and were improving in the winter breeding areas of Sudan and Egypt.

In the **Western Region**, the Inter-Tropical Convergence Zone (ITCZ) continued its southerly retreat over the Sahel in West Africa during October and was well south of the summer breeding area by mid-month. Consequently, only light showers fell in the extreme south of Mauritania and in Lac and southern Kanem provinces of western Chad. Light rain also fell during the second decade in western Mauritania and central areas of Western Sahara. Ecological conditions remained favourable for breeding in west and northwest Mauritania and in the Tamesna and Air Mountains in northern Niger. Vegetation was drying out in Chad and, at the end of the month, started to dry out in a few places of Tamesna in Niger. In Northwest Africa, ecological conditions were favourable for breeding in southern Algeria to the west of Tamanrasset and near irrigated perimeters in the Adrar area of the central Sahara.

In the **Central Region**, the Inter-Tropical Convergence Zone (ITCZ) continued its seasonal southward movement over Sudan during October and was well south of the summer breeding area. Nevertheless, light showers fell in West Kordofan, North Kordofan (south of El Obeid), and near Kassala. Vegetation remained green north of Khartoum in the Baiyuda Desert and between the Nile and Atbara rivers. Vegetation dried out in the summer breeding

areas in the interior of Yemen. In the winter breeding areas, good rains fell during the first decade along the Red Sea coastal plains from Qunfidah, Saudi Arabia to Bab El Mandeb in Yemen, extending to the western parts of the Gulf of Aden coast. Rains also fell in the Asir Mountains near Mecca. During the last decade of October, good rains fell in northeast Sudan (Wadi Oko/Diib and the Red Sea coast) and in adjacent coastal and subcoastal areas of southeast Egypt south of Shalatyn. Consequently, ecological conditions remained favourable for breeding on the eastern side of the Red Sea and were improving on the western side. In the Horn of Africa, good rains that fell in eastern Ethiopia and northern Somalia, primarily during the first decade of October, should allow breeding conditions to improve.

In the **Eastern Region**, very little rain fell during October in the summer breeding areas along both sides of the Indo-Pakistan border. Light rain fell in parts of Barmer district in India during the first decade of the month.



Area Treated

Mauritania	2,990 ha (1-28 October)
Niger	110 ha (October)
Saudi Arabia	210 ha (October)
Sudan	240 ha (October)
Yemen	1,400 ha (27 Sep – 8 Oct)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

During October, an outbreak developed in the west and northwest where locust numbers increased and concentrated due to the arrival of adults from the summer breeding areas in the south, and from breeding that continued since September. Solitarious and *transiens* adults at densities up to 40,000 adults/ha formed groups, matured and laid eggs within an area of about 400 km by 300 km between Nouakchott (1809N/1558W), Tidjikja (1833N/1126W), Atar (2032N/1308W) and Tasiast (2034N/1531W). Hatching occurred and hoppers formed small groups and bands at densities up to 200 hoppers/m². Ground teams treated 2,990 ha from 1 to 28 October.

• **FORECAST**

Locust numbers will increase further in Inchiri, Trarza, Adrar, western Tagant west, and northern Brakna as breeding continues, more hatching occurs, and locusts concentrate to form groups, small bands, and perhaps a few small swarmlets.

Mali

• **SITUATION**

During October, no locusts were seen by surveys carried out in western and central areas between Niore (1512N/0935W) and Mopti (1430N/0415W).

• **FORECAST**

Small-scale breeding will come to an end as conditions become unfavourable in the Adrar des Iforas, Tilemsi Valley and Tamesna. Low numbers of locusts are expected to persist and could concentrate and form a few small groups in areas that remain green.

Niger

• **SITUATION**

During October, small-scale breeding occurred mainly near Arlit (1843N/0721E) and In Abangharit (1754N/0559E) where scattered solitary hoppers of all instars were present. Fledging from earlier breeding occurred after mid-month. Scattered immature and mature solitary adults persisted in these areas as well as in the northern Air Mountains and on the Tamesna Plains between Arlit, Agadez (1658N/0759E), In Gall (1651N/0701E) and In Abangharit. By the end of the month, some adults were concentrating and becoming *transiens* in Tamesna. Elsewhere, isolated adults were seen on the western edge of the Ténéré Desert and local breeding occurred in the southeast where isolated third instar hoppers and immature adults were seen northeast of Diffa (1318N/1236E). Ground teams treated 110 ha of hoppers in Tamesna during October.

• **FORECAST**

Small-scale breeding will come to an end as conditions become unfavourable in the Air Mountains and the Tamesna Plains. Low numbers of locusts are expected to persist and could concentrate and form a few small groups in areas that remain green.

Chad

• **SITUATION**

During October, an increasing number of immature and mature solitary adults were seen at densities up to 1,200 adults/ha, mainly in the northeast between Arada (1501N/2040E) and Fada (1714N/2132E), in parts of Batha province, and in the west between Lake Chad and Nokou (1435N/1446E) in Kanem and Lac provinces. Late instar hoppers were present early in the month near Fada and later in the month in Lac.

• **FORECAST**

Small-scale breeding will end as conditions become unfavourable in the centre and northeast. Low numbers of locusts are expected to persist and could concentrate and form a few small groups in areas that remain green.

Senegal

• **SITUATION**

On 30 September, an individual solitary adult was reported in Dakar (1442N/1728W). No reports were received during October.

• **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 October, no locusts were seen in the southern Sahara west of Tamanrasset (2250N/0528E) and in the central Sahara near crops south of Adrar (2753N/0017W).

• **FORECAST**

Low numbers of solitary adults may appear in areas of green vegetation near Tamanrasset and in irrigated areas near Adrar, and breed on a small scale.

Morocco

• **SITUATION**

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

• **FORECAST**

Low to moderate numbers of solitary adults and perhaps a few small groups are likely to appear in southern areas of the Western Sahara. Small-scale breeding will occur in areas that receive rainfall and could cause small groups to form.

Libya

• **SITUATION**

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



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- **FORECAST**

No significant developments are likely.

Tunisia

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

CENTRAL REGION

Sudan

- **SITUATION**

During October, solitary adults continued to mature in the summer breeding areas in North Kordofan, the Baiyuda Desert northwest of Khartoum, the Nile Valley near Merowe and north of Dongola (1910N/3027E), and east of the Nile between Khartoum, Atbara (1742N/3400E), Kassala (1527N/3623E) and the Red Sea Hills. As vegetation dried out, a few second to fourth instar hopper bands formed along the Atbara River and near Derudeb (1731N/3607E), hopper groups formed near Kassala, and adult groups formed northeast of Khartoum. Control teams treated 215 ha. Locust numbers were declining as adults moved to the winter breeding areas in the northeast and on the Red Sea coast.

In the winter breeding areas, adult groups laid eggs in Wadi Oko/Diib in the northeast and in the Tokar Delta (1827N/3741E) on the coast. Scattered immature and mature solitary adults were also present in both areas. Late instar hoppers from September laying formed a few small groups in W. Oko near Tomala (2002N/3551E) where control teams treated 25 ha.

- **FORECAST**

Locust numbers will continue to decline in the summer breeding areas in the interior where a few adult groups and perhaps small swarmlets may form and move into cropping areas along the Nile or continue to the Red Sea coast. In the winter breeding areas, small-scale breeding will cause locusts to increase in the northeast and along the Red Sea coast. Hatching in Wadi Oko/Diib and Tokar will commence in early November and small hopper groups may form that will start to fledge in early December.

Eritrea

- **SITUATION**

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

- **FORECAST**

Low numbers of solitary adults are expected to appear on the Red Sea coast between Massawa and Karora. Small-scale breeding in areas of runoff and rainfall will cause locust numbers to increase, especially near Sheib and Mehimet. Regular surveys are recommended.

Ethiopia

- **SITUATION**

During October, local breeding occurred north of Dire Dawa where a few third and fourth instar solitary hoppers mixed with scattered mature solitary adults were present at mid-month.

- **FORECAST**

No significant developments are likely.

Djibouti

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

Somalia

- **SITUATION**

No reports were received during October.

- **FORECAST**

Low numbers of adults may appear on the northwest coastal plains and breed on a small scale in areas of recent rainfall. There is a low risk that a few small groups or swarmlets may arrive from Yemen in November.

Egypt

- **SITUATION**

During October, no locusts were seen during surveys carried out on the Red Sea coast between Berenice (2359N/3524E) and Halaib (2213N/3638E), along both sides of Lake Nasser in the Allaqi area and near Abu Simbel (2219N/3138E), Tushka (2247N/3126E), and Aswan (2405N/3256E); and, in the northwest near Siwa (2912N/2531E) and Salum (3131N/2509E).

- **FORECAST**

Adults and perhaps a few small groups are expected to appear along the Red Sea coast in the southeast. Small-scale breeding will cause locust numbers to increase between Berenice and Halaib where hatching will occur and hoppers may form small groups.

Saudi Arabia

• SITUATION

During October, scattered immature and mature adults were present on the central Red Sea coastal plains near Lith (2008N/4016E) and Qunfidah (1909N/4107E). Small-scale breeding was in progress near Lith where solitary and *transiens* hoppers of all instars were seen. Early in the month, groups of very small late instar hoppers and mature adults were present in the interior about 100 km east of Najran (1729N/4408E) near farms on the edge of the Empty Quarter and the Yemen border. At the end of the month, local breeding was reported on the southern coast near Jizan (1656N/4233E) and the Yemen border. On the 27th, adult groups were seen arriving near Jizan from Yemen. No locusts were seen on the northern coast between Rabigh (2247N/3901E) and Bader (2346N/3847E). Control teams treated 210 ha.

• FORECAST

Locust numbers will continue to increase along the Red Sea coastal plains from small-scale breeding in areas of recent rainfall, mainly between Jizan and Lith. Hoppers and adults may form small groups.

Yemen

• SITUATION

In the summer breeding area of the interior, only limited control operations were carried out in early October on farms near Marib (1527N/4519E) and in Shabwah province. On the 9th, several immature swarms were seen in Wadi Hadhramaut near Shebam (1553N/4838E), Tarim (1603N/4859E) and Wadi Henen (1551N/4814E). The swarms probably came from wadis in the plateau area to the north where locals reported infestations in September. Control was not possible due to insecurity and beekeeping. On the 22nd, an immature swarm was reported in the highlands north of Sana'a.

In the winter breeding areas, control operations continued in early October on the northern Red Sea coast against groups of hoppers and adults and small hopper bands, treating 1,400 ha from 27 September to 8 October. By the end of the month, there were reports of adult groups and at least four small swarms laying eggs between Al Zuhrah (1541N/4300E) and Midi (1619N/4248E), and hatching and fledging were in progress. Scattered adults were present on the central coast east of Hodeidah (1450N/4258E). On the Gulf of Aden coast, hoppers and adults were reported east of Zinjibar (1306N/4523E) in early October. An immature swarm and hoppers were seen west of Aden near Am Rija (1302N/4434E) on the 29th.

• FORECAST

Locust numbers will increase as breeding continues along the Red Sea and Gulf of Aden coastal plains. Hatching will occur from early November onwards,

and groups, small bands and perhaps a limited number of small swarms will form.

Oman

• SITUATION

During October, isolated immature solitary adults were seen in the northern interior in crops to the southwest of Nizwa (2255N/5731E). No locusts were seen in Sharqiya and in the south near Maziuna (1750N/5239E) and the Yemen border.

• 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 reports were received during October.

• FORECAST

No significant developments are likely.

Pakistan

• SITUATION

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

• FORECAST

Locust numbers will decline in the summer breeding areas of Cholistan and Tharparkar. No significant developments are likely.

India

• SITUATION

During October, scattered immature solitary adults persisted in Rajasthan along the Pakistan border west of Bikaner (2801N/7322E) as well as north of Bikaner, while mature adults persisted west of Jaisalmer (2652N/7055E). Fledglings were reported at three places and laying at one location.

• FORECAST

Locust numbers will continue to decline in Rajasthan as vegetation dries out. No significant developments are likely.



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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

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

CRC website. The FAO Commission for Controlling the Desert Locust in the Central Region (CRC) has launched an updated website: <http://crc-empres.org>

2013-14 events. The following activities are scheduled or planned:

- **CRC.** 4th Regional Training Course on Desert Locust Aerial Survey and Control Operations, 17-21 November, Jeddah (Saudi Arabia)
- **EMPRES/WR.** 12th Liaison Officer meeting, 1-4 December, Algiers (Algeria)
- **EMPRES/WR.** 9th Steering Committee meeting, 5 December, Algiers (Algeria)

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

Jean Roy. It is with deep regret that we announce the death of Jean Roy on 3 November. Mr. Roy, a French national, was the locust expert who established and managed a regional anti-locust service in western Africa from 1952 onwards. He became Team Leader of the Operational Research Aerial Unit of the United Nations Special Fund (later UNDP) Desert Locust Project (1961-64) and then Senior Officer of the FAO Locusts, Other Migratory Pests and Emergency Operations Group (from 1975 until his retirement on 31 December 1979). He continued to do a lot of consultancies after his retirement. We would like to express our sincere condolences to his family and government.



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.



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ORANGE

- 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.

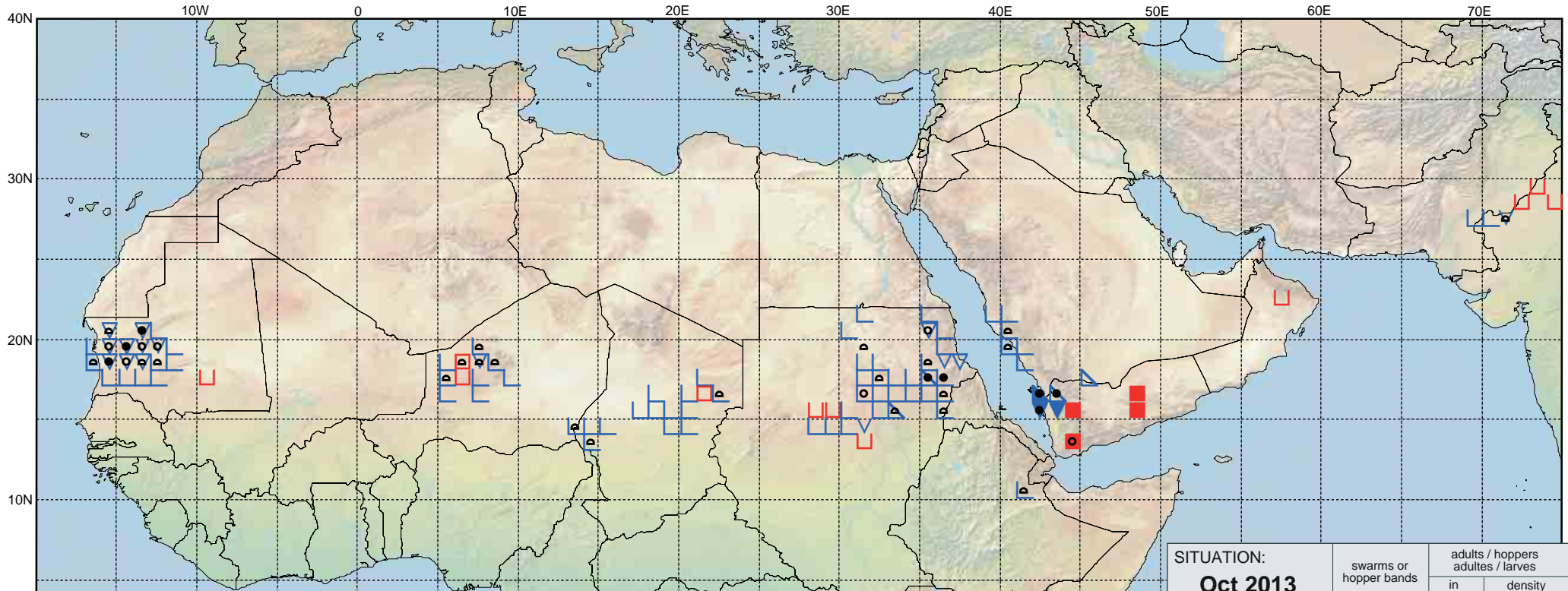
EASTERN

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



Desert Locust Summary

Criquet pèlerin - Situation résumée



FORECAST TO: PREVISION AU: 15.12.13	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: Oct 2013 oct 2013	swarms or hopper bands	adults / hoppers adultes / larves	
	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 hoppers			
larvae larves			
hoppers & adults (combined symbol example) larves et adultes (exemple symboles combinés)			