

warning level: **THREAT**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations



No. 416



**General Situation during May 2013
Forecast until mid-July 2013**

(3 June 2013)

The Desert Locust situation remained serious as a result of breeding in the northern part of the Central Region and in Northwest Africa during May. In both regions, control operations were carried out against hopper groups and bands. By the end of the month, adults were forming groups in many areas. During June, more groups, including perhaps a few small swarms, are expected to form and move from spring breeding areas in Northwest Africa to the summer breeding areas in the northern Sahel of West Africa, and from the Sinai and Arabian peninsulas to the summer breeding areas in central Sudan. A few adult groups may also appear in the interior of Yemen. Egg-laying will occur with the onset of the seasonal rains in the summer breeding areas. Insecurity in northern Mali and western Sudan as well as in other places is likely to restrict field operations in the summer breeding areas.

Western Region. Hopper groups and bands continued to form during May in the spring breeding areas south of the Atlas Mountains in Morocco and Algeria as well as in parts of southern and southwest Libya. By the end of the month, fledging commenced and immature adults formed a few small groups. Although control operations were carried out in the three countries, adult groups and perhaps a few small swarms are likely to form as vegetation dries out, and move to the summer breeding areas in the northern Sahel of Mauritania, Mali, Niger and Chad in June. In Niger, small-scale breeding occurred during May in the Air Mountains where fledging is expected

after mid-June. There is a slight risk that a few adult groups may also appear in Chad or perhaps Niger from northern Sudan. Breeding will commence in the northern Sahel with the onset of the summer rains but access to some areas will be restricted due to prevailing insecurity.

Central Region. Groups of immature adults and a few small swarms formed during May from hopper groups and bands in northwest Saudi Arabia. Several mature adult groups moved to the interior and laid eggs near irrigated areas that should hatch by early June, causing hopper groups and perhaps a few small bands to form. Hopper groups and bands were present on both sides of the border in Sinai, Egypt and the Negev Desert in Israel where small groups of immature adults formed by the end of May. Locust breeding last occurred in Israel in 1961. Hopper groups were also present near Lake Nasser in Egypt. In northern Sudan, hopper bands and fledglings were reported in the Nile Valley near Egypt but declined during May. Aerial and ground control operations were in progress in Saudi Arabia and Israel, while ground control was carried out in Egypt and Sudan. During the forecast period, adult groups and perhaps a few small swarms are expected to move from the Sinai and Israel to the summer breeding areas in the interior of Sudan, supplemented by similar populations arriving from the Arabian Peninsula. Breeding will commence with the onset of the seasonal rains. There is a moderate risk of adult groups appearing in the interior of Yemen and breeding.

Eastern Region. Small-scale breeding occurred during May in the Jaz Murian Basin in southeast Iran where a few small groups may form in June. Ecological conditions remained favourable for breeding in Baluchistan, Pakistan but only scattered adults were present. Low numbers of adults will appear along the Indo-Pakistan border and breed on a small scale with the onset of the monsoon rains.

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 May 2013

Good rains fell in the spring breeding areas of the Arabian Peninsula where ecological conditions were favourable. Conditions were also favourable in the spring breeding areas in Northwest Africa and Southwest Asia despite limited rainfall in May.

In the **Western Region**, light showers fell at times during May in some of the spring breeding areas in Northwest Africa, primarily in parts of southern and eastern Algeria, and in Libya. However, rainfall during the current spring season has been less than in previous years. Consequently, annual vegetation started to dry out in many places in early May but remained green south of the Atlas Mountains in Morocco, mainly in a few areas of the Draa and Ziz-Ghris valleys, and near irrigated agricultural areas in the Sahara of Algeria and Libya. In West Africa, the Inter-Tropical Convergence Zone (ITCZ) continued its seasonal northward movement but remained south of the summer breeding areas. Its position was generally close to the climatological mean. Nevertheless, showers fell at times in the Air Mountains of Niger where ecological conditions improved and became favourable for breeding in numerous wadis as a result of earlier rains in April. Vegetation also became green in a few pasture areas further south near Tanout. During the last two decades of May, light rain fell at times in southeast Mauritania, in Mali near Tombouctou and Gao, and in Chad, near Mao in the west and Abeche in the east.

In the **Central Region**, good rains fell over the Arabian Peninsula during the first decade of May. Rainfall was heaviest in the Empty Quarter from south of Riyadh, Saudi Arabia to Hazar, Yemen. Lighter showers fell in the interior of Yemen and in northern Oman. As a result, vegetation was becoming green in several wadis in the Hadhramaut and Shabwah regions in Yemen and in Sharqiya, Oman. Good rains fell over the southern Sinai Peninsula where small areas of green vegetation were present in some wadis. Good rains fell at times in the Eritrean highlands, eastern Ethiopia, Djibouti and adjacent areas of northern Somalia. Vegetation became green over large areas of the Somali plateau and adjacent

areas of the Somali region in eastern Ethiopia. In northern Sudan, ecological conditions remained dry and unfavourable for breeding except in or near cultivated areas along the Nile Valley between the Atbara River and the Egyptian border. Good rains fell during the last decade in the summer breeding areas in West Darfur (Geneina), North Kordofan (El Obeid-Ed Dueim), and Khartoum but vegetation remained dry. At the end of the month, heavy showers fell in the southern highlands of Yemen, extending to the southern coastal plains of the Red Sea. Heavy rains also fell on the eastern coast of Oman near Duqm.

In the **Eastern Region**, ecological conditions remained favourable in parts of the spring breeding area in the Jaz Murian Basin in southeast Iran and in coastal and interior areas of western Pakistan. In the summer breeding area along both sides of the Indo-Pakistan border, pre-monsoon showers fell in parts of Rajasthan, India and in adjacent areas of Rahimyar Khan and Cholistan, Pakistan. As a result, ecological conditions may start to improve slightly for locust survival and breeding.



Area Treated

Algeria	6,864 ha (May)
Egypt	1,184 ha (May)
Israel	14,400 ha (2 March-2 April, updated) 14,100 ha (15 April - 19 May)
Libya	765 ha (12-20 May)
Morocco	450 ha (April) 1,932 ha (May)
Saudi Arabia	13,712 ha (April)
Sudan	1,415 ha (May)



Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• SITUATION

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

• FORECAST

Low to moderate numbers of adults and perhaps a few groups or small swarms are likely to appear in the south and breed once the seasonal rains commence.

Mali

• SITUATION

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

• FORECAST

Low to moderate numbers of adults and perhaps a few groups or small swarms may appear from the north in the Adrar des Iforas, Tilemsi Valley and Tamesna, and breed once the seasonal rains commence.

Niger

• SITUATION

During May, small-scale breeding occurred in the Air Mountains to the east and south of Timia (1809N/0846E) where low numbers of first and second instar solitary hoppers were present mixed with isolated mature solitary adults. Isolated immature solitary adults were seen in the northern Air near Iferouane (1905N/0824E).

• FORECAST

Locust numbers will increase slightly in the Air Mountains as small-scale breeding continues. Fledging will commence in mid-June. Groups of adults and perhaps a few small swarms could arrive in the Air and Tamesna from the north and perhaps the east. A second generation of breeding will occur once the seasonal rains commence in Tamesna and the pasture areas between Tahoua and Tanout.

Chad

• SITUATION

No reports were received in May.

• FORECAST

There is a low risk that groups of adults and perhaps a few small swarms could appear from northern Sudan or Libya. Small-scale breeding will occur in the centre and northeast once the seasonal rains commence.

Senegal

• SITUATION

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

• 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 May, third to fifth instar hopper groups and

small bands continued to form in the northwestern Sahara near the Moroccan border between Bechar (3135N/0217W) and Ain Sefra (3245N/0035W), and near irrigated crops in the Adrar (2753N/0017W) area of the central Sahara as a result of breeding in April. By the end of May, fledging commenced and immature adults formed a few small groups near Adrar. Immature and mature solitary adults were also present in all of these areas. No locusts were seen near Tindouf (2741N/0811W), Tamanrasset (2250N/0528E), Djanet (2434N/0930E) and Illizi (2630N/0825E). Ground teams treated 6,864 ha in May.

• FORECAST

As vegetation dries out, an increasing number of adult groups and perhaps a few small swarms are likely to form and move south to the northern Sahel in West Africa.

Morocco

• SITUATION

During the first half of May, egg-laying continued south of the Atlas Mountains near Guelmim (2859N/1003W). An increasing number of small hopper groups and bands formed at densities of less than 20 hoppers/m² near Guelmim, in parts of the Draa Valley near the Algerian border southeast of Tata (2944N/0758W), and in the Ziz-Ghris Valley southwest of Erfoud (3128N/0410W). By mid-month, fledging had commenced. In the northeast, isolated mature adults persisted from east of Erfoud to Figuig (3207N/0113W). Control teams treated 1,932 ha in May.

• FORECAST

As vegetation dries out, an increasing number of immature adult groups and perhaps a few small swarms are expected to form in breeding areas along the southern side of the Atlas Mountains near Guelmim and in the Draa and Ziz-Ghris valleys. Infestations will decline as adults move south to the northern Sahel in West Africa.

Libya

• SITUATION

During May, groups and small bands of second to fourth instar hoppers as well as fledglings formed in the southwest near Ghat (2459N/1011E) and in the south-central area near Marzuq (2555N/1355E) from undetected egg-laying and hatching in April.



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The infestations were concentrated mainly near irrigated agricultural areas of Tahala (2526N/1022E), Majdol (2550N/1500E), Zawilah (2609N/1507E), and Tmassah (2623N/1547E). Ground teams treated 765 ha from 12 to 20 May.

- **FORECAST**

Groups of immature adults and perhaps a few small swarms are likely to form in the southwest and centre from early June onwards, and then move to the northern Sahel in West Africa.

Tunisia

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

CENTRAL REGION

Sudan

- **SITUATION**

During May, late instar hopper bands and fledglings were present in cropping areas along the Nile Valley near Wadi Halfa (2147N/3122E) and the Egyptian border. Low densities of immature and mature solitarious and gregarious adults were also seen near Wadi Halfa and at a few places in the River Nile State near Abu Hamed (1932N/3320E). Locust infestations declined during the month. Ground teams treated 1,415 ha in May.

- **FORECAST**

There remains a low to moderate risk that a few groups and perhaps small swarms may form in the Nile Valley from undetected infestations. Adult groups and perhaps a few small swarms from northern Sudan, Egypt and Saudi Arabia may appear in the summer breeding areas where they will disperse between Darfur and Kassala and breed with the onset of the seasonal rains.

Eritrea

- **SITUATION**

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

- **FORECAST**

Low numbers of adults are likely to appear in the western lowlands and breed on a small scale with the onset of the seasonal rains.

Ethiopia

- **SITUATION**

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

- **FORECAST**

Scattered adults may be present in areas of recent rainfall in parts of the Somali region.

Djibouti

- **SITUATION**

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

- **FORECAST**

No significant developments are likely.

Somalia

- **SITUATION**

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

- **FORECAST**

Low numbers of locusts may be present and breeding on a small scale in areas of recent rainfall on the plateau between Boroma and Erigavo.

Egypt

- **SITUATION**

During May, hoppers formed groups in the Sinai in the northeast between El Arish (3108N/3348E) and Jebel Al Halal, in the west along the Gulf of Suez coastal plains, and in the southern interior between St. Catherine (2833N/3358E) and Nuweiba (2902N/3440E) on the Gulf of Aqaba coast. Some areas could not be surveyed due to insecurity. Breeding also occurred in the Nile Valley near Qena (2609N/3243E) and along Lake Nasser between Garf Husein (2317N/3252E) and Tushka (2247N/3126E) where hopper groups were present. Fledging occurred in all areas during the last week of the month, and immature adults formed small medium-density groups in the Sinai. Ground teams treated 1,184 ha in May. Elsewhere, no locusts were seen on the Red Sea coast or subcoastal areas of El Shazly and Abraq.

- **FORECAST**

Groups of immature adults and a few small swarms will form in the Sinai, especially in the northeast along the Israeli border in early June. Thereafter, infestations are expected to decline as adults move south to the summer breeding areas in Sudan. A few adult groups may also form near Lake Nasser that will also move south.

Israel

- **SITUATION**

During May, numerous small hopper groups and bands formed in the northern Negev Desert between Nitzana (3053N/3425E) and Ze'elim (3112N/3432E)

where hatching had occurred in mid-April. By the end of May, hoppers were fledging and forming small groups of immature adults. Some of the groups were flying back and forth along the Sinai border. Ground and aerial control operations treated 14,100 ha from mid-April to mid-May.

• **FORECAST**

The remaining hopper infestations in the northern Negev Desert will fledge by early June and form groups of immature adults and perhaps a few small swarms. Local movements of similar populations along the Sinai border will also occur. Cropping areas could be threatened prior to a general migration towards the southwest and the summer breeding areas in Sudan.

Saudi Arabia

• **SITUATION**

During May, breeding continued in the extreme north of the Red Sea coast near Al Bad (2830N/3500E) and in adjacent subcoastal areas near Tabuk (2823N/3635E) where hopper groups and bands were present. Fledging commenced at the beginning of May and immature adults formed groups and a few swarms between Tabuk and Khaybar (2542N/3917E). Several mature adult groups moved to irrigated areas in the interior between Hail (2731N/4141E) and Gassim (2621N/4358E) and laid eggs at mid-month. Ground and aerial control operations treated 17,003 ha in May.

• **FORECAST**

Locust infestations will decline on the northern Red Sea coast and adjacent subcoastal areas due to drying vegetation, control operations and migration. Limited hatching may occur in the interior between Hail and Gassim by early June, causing hopper groups and perhaps a few small bands to form that will fledge by the end of the month, giving rise to small immature adult groups. Thereafter, locust numbers will decline as adults move towards summer breeding areas in Yemen and Sudan.

Yemen

• **SITUATION**

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

• **FORECAST**

Small-scale breeding may be in progress in the interior between Marib and Hadhramaut. This could be supplemented by low to moderate numbers of adults and perhaps a few small groups appearing from the north.

Oman

• **SITUATION**

In May, no locusts were seen during surveys carried

out on the Musandam Peninsula, in the northern interior between Ibri (2314N/5630E) and Adam (2223N/5731E), and in the southern interior northwest of Thumrait (1736N/5401E).

• **FORECAST**

No significant developments are likely.

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

• **FORECAST**

No significant developments are likely.

EASTERN REGION

Iran

• **SITUATION**

During May, scattered mature solitary adults laid eggs in the Jaz Murian Basin near Ghale Ganj (2731N/5752E) at mid-month. No locusts were seen during surveys on the southeast coast near Jask (2540N/5746E).

• **FORECAST**

Small-scale hatching should occur at the beginning of June and low numbers of hoppers may be present in the western part of the Jaz Murian Basin. Fledging is expected to occur by the end of the month. As vegetation dries out, a few small groups may form.

Pakistan

• **SITUATION**

During May, scattered mature solitary adults were present in the northern interior of the spring breeding area in Baluchistan near Nushki (2933N/6601E). No locusts were seen elsewhere during surveys conducted in the interior of Baluchistan.

• **Forecast**

Low numbers of adults will appear in Cholistan and Tharparkar, and breed on a small-scale once the monsoon rains commence.

India

• **SITUATION**

No locusts were seen during surveys carried out during May.

• **FORECAST**

Low numbers of adults will appear in Rajasthan, and breed on a small-scale once the monsoon rains commence.



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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.ldeo.columbia.edu/maproom/.Food_Security/Locusts/.Regional/.MODIS/index.html)
- **MODIS.** Daily rainfall imagery in real time (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/Locusts/index.html)
- **RFE.** Rainfall estimates every day, decade and

month (http://iridl.ldeo.columbia.edu/maproom/.Food_Security/.Locusts/index.html)

- **Greenness maps.** Dynamic maps of green vegetation evolution every decade (<http://www.devcoast.eu/user/images/dl/Form.do>)
- **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:

- **Desert Locust situation updates.** Archives Section – Briefs
- **NE Egypt invasion.** Information section
- **Sudan threat.** Information section
- **Iran/Pakistan Joint Survey report.** Publications Section – Reports

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

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

French: <http://www.slideshare.net/FAOLocust/elocust3f-a-preview-french-version>

Arabic: <http://www.slideshare.net/FAOLocust/elocust3-a-preview-arabic-version>

2013 events. The following activities are scheduled or planned:

- **CLCPRO.** Expert meeting to update regional action plan for June to September, Agadir, Morocco (10-11 June)
- **CLCPRO.** 8th Executive Committee, Agadir, Morocco (12-14 June)
- **CLCPRO.** Environmental technical group meeting, Dakar, Senegal (24-28 June)



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.

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



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only: Bahrain, Iraq, Israel, Jordan, Kenya, Kuwait, Qatar, Syria, Tanzania, Turkey, UAE and Uganda.

EASTERN

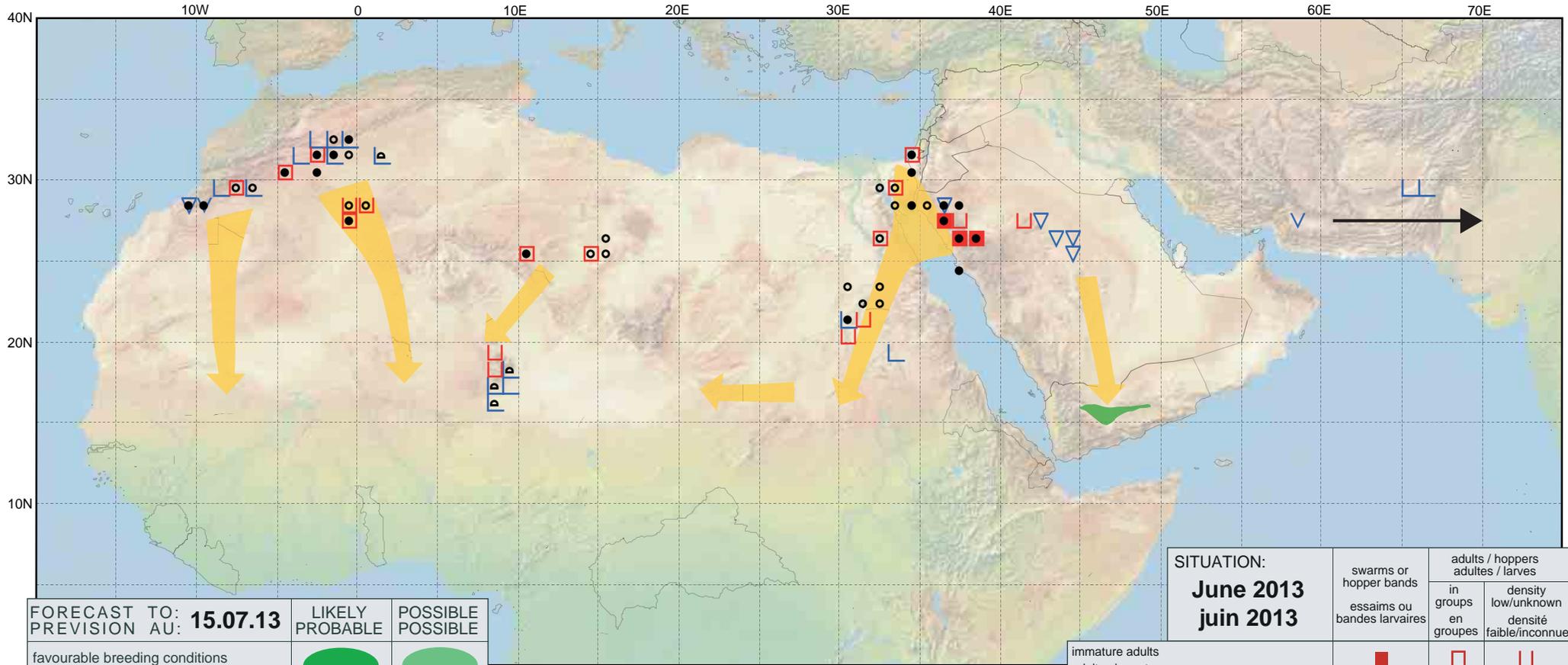
- locust-affected countries in South-West Asia:
Afghanistan, India, Iran and Pakistan.



Desert Locust Summary

Criquet pèlerin - Situation résumée

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FORECAST TO: PREVISION AU: 15.07.13	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: June 2013 juin 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)			