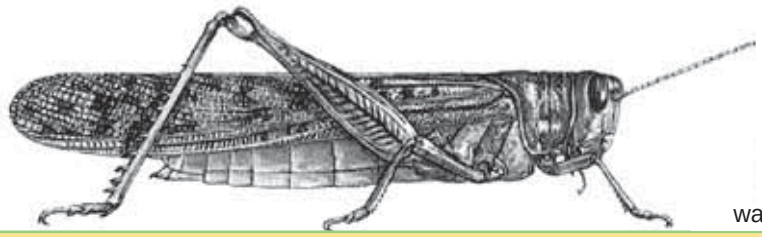

warning level: **CAUTION**

DESERT LOCUST BULLETIN

FAO Emergency Centre for Locust Operations **No. 391**

(3 May 2011)

General Situation during April 2011 Forecast until mid-June 2011

Desert Locust infestations persisted during April in northwest Mauritania and on the Red Sea coast in Saudi Arabia but declined in Egypt and Sudan. Ground and aerial control operations were undertaken in Saudi Arabia against another generation of breeding while smaller ground operations were conducted in Mauritania, Egypt, southern Morocco and Algeria. Small-scale breeding occurred in western Pakistan and southeast Iran. During the forecast period, if the remaining infestations in Saudi Arabia are not controlled, new adult groups and small swarms could form on the coast and move into the interior during May and perhaps across the Red Sea to Sudan in June. Any adults remaining in northwest Mauritania will move to the summer breeding areas in the south of the country in June. Therefore, all efforts should be made to control current infestations in order to reduce migration to the spring and summer breeding areas.

Western Region. Groups of hoppers and adults formed in northwest **Mauritania** and adjacent areas of southern Western Sahara in **Morocco** during April. Ground teams treated more than 8,000 ha in Mauritania and 300 ha in Morocco. Low numbers of adults persisted along the southern side of the Atlas Mountains in Morocco. In **Algeria**, hatching near irrigated crops in the central Sahara caused locusts to increase and form small groups of hoppers and adults that were treated (440 ha). No locusts were reported in the northern Sahel of West Africa where dry conditions prevailed. During the forecast period, adult numbers will increase in northwest Mauritania in May but decline during June as adults move towards the summer breeding areas in the south of the country. This year, somewhat higher than normal numbers are expected to appear prior to the onset of the summer rains.

Central Region. Another generation of hatching occurred on the central Red Sea coastal plains in **Saudi Arabia**, causing locust numbers to increase during April. Aerial and ground control operations treated more than 13,000 ha of hopper bands and groups of hoppers and adults. Locust infestations continued to decline on the Red Sea coast in **Sudan** and **Egypt**. Ground teams treated 2,150 ha in Egypt. No locusts were reported elsewhere in the Region. During the forecast period, more hopper bands and adult groups will form on the Red Sea coast in Saudi Arabia. As vegetation dries out, adult groups and perhaps a few small swarms are likely to move into the spring breeding areas of the central interior in May while in June they are more likely to cross the Red Sea to northeast Africa. If adults arrive in the interior of Saudi Arabia, small-scale breeding will occur in areas of recent rainfall.

Eastern Region. Small-scale breeding occurred in the spring breeding areas of Baluchistan in **Pakistan** and, to a lesser extent, in **Iran** during April. Locust numbers will increase slightly in May but then decline during June as low numbers of adults move towards the summer breeding areas along the Indo-Pakistan border.

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 made available on the Internet.
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DLIS: www.fao.org/ag/locusts

No. 391

DESERT LOCUST BULLETIN

Weather & Ecological Conditions in April 2011

Vegetation continued to dry out in the winter breeding areas along both sides of the Red Sea and in northwest Africa due to poor rains during April. Ecological conditions improved in the spring breeding areas in western Pakistan and southeast Iran.

In the **Western Region**, no significant rain fell during April. Vegetation remained green in parts of northwest Mauritania and in adjacent southern areas of Western Sahara from rains that occurred six months ago. Elsewhere in northwest and northern Mauritania, vegetation was drying out or already dry. In the spring breeding areas of Northwest Africa, vegetation was drying out along the southern side of the Atlas Mountains in Morocco, except near Guelmim, in parts of the Draa Valley and in the northeast near Figuig. In Algeria, dry conditions prevailed except in irrigated areas near Bechar and Adrar. In the northern Sahel, mainly dry conditions persisted, except in parts of the Adrar des Iforas in northern Mali and the Air Mountains in northern Niger where small areas of green vegetation may be present in some of the larger wadis. Light rains may have fallen in parts of the Timetrine in northern Mali and the Tenere Desert in northeast Niger.

In the **Central Region**, very little rain fell during April in the winter breeding areas along both sides of the Red Sea. Light to moderate rains may have fallen during the second decade on the Red Sea coastal plains near the Sudanese/Eritrean between Mehimet, Eritrea and Aiterba, Sudan. Light rain may have also fallen at times on the central Red Sea coast in Eritrea. In the spring breeding areas, light to moderate rains fell in the interior of Saudi Arabia, and light rains fell on the northern coast of Oman between Sohar and the Musandam Peninsula, in the northern interior of Oman between Ibri and Sharqiya, and on the escarpment in northern Somalia between Hargeisa and Berbera. During the last decade, light rains may have fallen in the summer breeding areas of the interior of Yemen between Marib and Thamud. Vegetation was drying out on the Red Sea coastal plains in Yemen and from Egypt to Eritrea except for the Tokar Delta in Sudan. Vegetation remained green along parts of the coast in Saudi Arabia.

In the **Eastern Region**, light to moderate rainfall occurred at times during April in parts of the spring breeding areas in western Pakistan and southeast Iran. Most of the rain fell in Iran on the southeastern coastal plains and in the Jaz Murian Basin. In Pakistan, good rains fell at the end of the month in central (Shooli Valley to Panjgur) and northern (Kharan Valley and Nushki) Baluchistan. Consequently, ecological conditions were favourable for breeding in these areas.

Area Treated

Algeria	440 ha (April)
Egypt	2,150 ha (1-27 April)
Mauritania	8,053 ha (1-20 April)
Morocco	329 ha (April)
Saudi Arabia	13,124 ha (April)

Desert Locust Situation and Forecast

(see also the summary on page 1)

WESTERN REGION

Mauritania

• **SITUATION**

During April, groups of late instar solitarious and *transiens* hoppers and immature and mature adults persisted in the northwest region of Inchiri, mainly near Tasiast (2034N/1531W), and to a lesser extent in southwest Adrar between Akjoujt (1945N/1421W) and Atar (2032N/1308W). As vegetation dried out in the Tasiast area, locust densities increased to 60 hoppers/m^2 and 13,000 adults/ha while lower densities (25 hoppers/m^2 and 1,800 adults/ha) were present in other areas. A few adults were seen copulating and laying eggs in both areas during April. Ground teams treated 8,053 ha on 1-20 April. In the north, scattered mature solitarious adults were present between Zouerate (2244N/1221W) and Bir Moghrein (2510N/1135W). No locusts were seen in northeastern Tiris Zemmour.

• **FORECAST**

Adult numbers will increase in Inchiri as fledging occurs during May. Although limited hatching is likely to take place in some areas, breeding will come to an end. As vegetation continues to dry out, locusts will concentrate and form small groups. Locust numbers in the northwest will decline during June as adults move towards the summer breeding areas in the south

where somewhat higher than normal numbers are expected to appear at the end of the forecast period.

Mali

• **Situation**

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

• **Forecast**

Low numbers of adults may be present and will persist in parts of the Adrar des Iforas.

Niger

• **Situation**

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

• Forecast

Isolated adults may be present and will persist in parts of the Air Mountains.

Chad

• **Situation**

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

• **Forecast**

No significant developments are likely.

Senegal

• **Situation**

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

• **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 April, locust numbers increased slightly in the central Sahara near irrigated crops in the Adrar (2753N/0017W) area. Hatching started during the first week, giving rise to groups of solitarious hoppers at densities up to 40 hoppers/m^2. A few groups of immature and mature solitarious and *transiens* adults were present at densities up to 1,100 adults/ha. Limited breeding also occurred west of Tamanrasset (2250N/0528E) where mature solitarious adults were present. Scattered mature adults were present near Tindouf (2741N/0811W) and Beni Abbes (3011N/0214W). Ground teams treated 440 ha mainly near Adrar.

• **Forecast**

Small-scale breeding will continue near Adrar where hatching is likely to take place during the first half of May and fledging will occur from mid-May to mid-June. Locusts are expected to concentrate and form small groups. Limited breeding may occur in areas of recent rainfall near Tindouf.

Morocco

• **Situation**

During April, isolated mature solitarious adults persisted near Guelmim (2859N/1003W) and in the northeast between Erfoud (3128N/0410W) and Figuig (3207N/0113W). No locusts were seen in the Draa Valley.

In the Western Sahara, mainly late instar groups of *transiens* hoppers at densities up to 25 hoppers/m^2 were present on the Mauritanian border near Iknioun (2120N/1523W). Immature and mature solitarious adults densities increased during the month to 6,000 adults/ha. Ground teams treated 329 ha in April. A few mature adults were present northwest of Aousserd (2233N/1419W).

• **Forecast**

As vegetation dries out in the Western Sahara, locusts are likely to concentrate and form small groups near the Mauritanian border. Locust numbers will decline during June as any remaining adults move towards the summer breeding areas in southern Mauritania.

Libyan Arab Jamahiriya

• **Situation**

No reports were received during April.

• **Forecast**

A few solitarious adults may be present and could persist near Ghat. No significant developments are likely.

Tunisia

• **Situation**

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

• **Forecast**

No significant developments are likely.

CENTRAL REGION

Sudan

• **Situation**

During April, locust infestations continued to decline on the Red Sea coast. During the first

decade, small hopper bands of all instars were seen in Wadi Oko north of Tomala (2002N/3551E), and residual populations of scattered solitarious hoppers and mature adults were present on the coast from Port Sudan (1938N/3713E) to south of Suakin (1906N/3719E). During the second decade, surveys were undertaken in Tokar Delta and on the southern coastal plains but no locusts were seen.

• **Forecast**

Locust numbers will decline on the Red Sea coast and no significant developments are expected. Scattered adults and perhaps a few small groups are likely to appear in a few areas along the Nile and Atbara rivers between Khartoum and Dongola. This could be supplemented by a few groups or swarmlets from the eastern side of the Red Sea in June.

Eritrea

• **Situation**

No locusts were seen during a survey on the central Red Sea coast between Massawa (1537N/3928E) and Tio (1441N/4057E) on 16-20 April.

• **Forecast**

Isolated adults may be present in a few places along the Red Sea coastal plains between Massawa and Karora but numbers will decline as vegetation dries out. No significant developments are likely.

Ethiopia

• **Situation**

No locusts were seen during a survey carried out near Dire Dawa (0935N/4150E) on 27-28 April.

• **Forecast**

No significant developments are likely.

Djibouti

• **Situation**

No reports were received during April.

• **Forecast**

No significant developments are likely.

Somalia

• **Situation**

No reports were received during April.

• **Forecast**

Isolated adults may appear in areas of recent rainfall on the escarpment between Hargeisa and Berbera. No significant developments are likely.

Egypt

• **Situation**

During the first half of April, late instar *transiens* and gregarious hopper groups and bands mixed with groups of *transiens* and gregarious fledglings and immature adults persisted on the Red Sea coast between Shalatein (2308N/3535E) and Abu Ramad (2224N/3624E). During the second half of the month, locust numbers declined and only scattered solitarious and *transiens* hoppers where present with a few small groups of immature adults. Isolated mature solitarious adults were seen in the Allaqi area east of Lake Nasser suggesting that adults were starting to leave the coastal plains. Ground teams treated 2,150 ha in April.

• **Forecast**

Locust numbers will decline on the Red Sea coast as scattered adults move towards the Western Desert where they are likely to appear near Lake Nasser, Sh. Oweinat and perhaps Jebel Uweinat. This could be supplemented by a few groups or swarmlets from the eastern side of the Red Sea in June.

Saudi Arabia

• **Situation**

During April, aerial and ground control operations declined on the Red Sea coast between Lith (2008N/4016E) and Umm Lajj (2501N/3716E) against mainly early instar hopper groups and bands, and groups of mature solitarious, *transiens* and gregarious adults. The hopper bands and groups were mostly medium density and less than one hectare in size. Adults were seen copulating and laying eggs during the first two decades of the month, and another generation of hatching occurred during the second half of April. Ground and aerial teams treated 13,124 ha in April, mainly in the Lith area. No locusts were reported in the spring breeding areas of the interior.

• **Forecast**

Hatching will continue on the Red Sea coast between Qunfidah and Yenbo in early May, and hoppers will form groups and bands. Fledging will continue throughout the forecast period, causing small groups of adults and swarms to form. As vegetation dries out, adults are likely to move into the spring breeding areas of the central interior in May while in June they are more likely to cross the Red Sea to northeast Africa. If adults arrive in the interior, small-scale breeding will occur in areas of recent rainfall.

Yemen

• **Situation**

No locusts were seen during surveys carried out on the Red Sea coast from south of Hodeidah (1450N/4258E) to Suq Abs (1600N/4312E) and on the

Gulf of Aden coast west of Aden (1250N/4503E) on 25-27 April.

• **Forecast**

Scattered adults may appear in the interior between Marib and Thamud at the end of the forecast period. No significant developments are likely on the Red Sea and Gulf of Aden coasts.

Oman

• **Situation**

During April, no locusts were seen at one location in the Musandam Peninsula, and no locusts were reported elsewhere in the country.

• **Forecast**

Low numbers of adults may be present in areas of recent rainfall on the northern Batinah coast between Sohar and the Musandam Peninsula and in the interior between Ibri and Sharqiya. Small-scale breeding could occur in some of these areas during May.

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**

During April, solitarious adults were copulating at three places in the Jaz Murian Basin in the southeastern interior southeast of Kahnuj (2757N/5742E), and isolated solitarious hoppers and adults were seen between Dalgan (2728N/5926E) and Bampur (2711N/6028E). Isolated solitarious adults were seen on the southeastern coastal plains west of Jask (2540N/5746E) and east of Chabahar (2517N/6036E).

• **Forecast**

Small-scale breeding is likely to occur along parts of the southeastern coast and in the Jaz Murian Basin, causing locust numbers to increase slightly but remain below threatening levels. Limited fledgling will occur in late May in the Jaz Murian Basin. Locust numbers will start to decline at the end of the forecast period as vegetation dries out.

Pakistan

• **Situation**

During April, locust numbers increased in northern Baluchistan where scattered mature solitarious adults were present and laying eggs in the Kharan Valley (2832N/6526E). Hatching started during the first week, giving rise to low numbers of solitarious hoppers. Limited breeding occurred near Nushki (2933N/6601E) and mature adults were also present near Dalbandin (2856N/6430E) and Panjgur (2658N/6406E). No locusts were seen on the coast.

• Forecast

Locust numbers will increase slightly as hatching continues in the Kharan Valley during the first half of May. Fledging is expected to commence in mid-May. Small-scale breeding is likely to extend to other coastal and interior areas of Baluchistan during May. Locust numbers will start to decline at the end of the forecast period as vegetation dries out.

India

• **Situation**

No locusts were seen during surveys in Rajasthan and Gujarat in April.

• **Forecast**

Scattered adults may start to appear in parts of Rajasthan and Gujarat at the end of the forecast period.

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.

Google site. FAO DLIS has created a Google site (https://sites.google.com/site/faodlis) for national locust information officers to share problems, solutions and tips in using new technologies (eLocust2, eLocust2Mapper, RAMSES, remote sensing) and to make available the latest files for downloading. The site replaces the FAODLIS Google group, which will no longer be maintained. Interested users should contact Keith Cressman (keith.cressman@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.ldeo.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).

Greenness map. Geo-referenced dynamic greenness maps that show the evolution of green vegetation in the Desert Locust recession area for three months can be downloaded every ten days from DevCoCast (http://www.devcocast.eu/user/images/dl/Form.do). The new product was developed by the Université catholique de Louvain and the Flemish Institute for Technical Research in Belgium and funded by the Belgium Science Policy Office. The maps can be used in a GIS to help guide survey teams and in locust analysis and forecasting.

Twitter. FAO DLIS has started to disseminate updates on the Desert Locust situation via Twitter, a social media service. Twitter can be accessed via the Internet or, in some countries, by mobile phone. Interested users should sign up for a free account at http://twitter.com. Current Twitter users can access locust updates at http://twitter.com/faolocust.

eLERT. The Locust Group has created a dynamic and interactive online reference database that can be used to respond to assistance needs in a fast evolving locust emergency. It provides information on pesticides, equipment, suppliers, environmental monitoring, contracts, and contacts. The *e*LERT should help agencies to act more effectively in coping with locust threats. Visit eLert at 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
- **Greenness maps.** Activities Section – DLIS
- **Twitter.** Home page
- **eLERT.** Information Section
- **DLCC working papers.** Publications Section – Reports

2011 events. The following activities are scheduled or planned:

- **SWAC.** Desert Locust joint survey in the spring breeding areas of Pakistan and Iran (17 Apr - 10 May)
- **CRC/SWAC.** Desert Locust Information Officer workshop, Cairo, Egypt (17-19 May)
- **DLCC.** 40th session, Cairo, Egypt (September, to be confirmed)

Glossary of terms

The following special terms are used in the Desert Locust Bulletin when reporting locusts:

NON-GREGARIOUS ADULTS AND HOPPERS

ISOLATED (FEW)

- very few present and no mutual reaction occurring;
- 0 - 1 adult/400 m foot transect (or less than 25/ha).

SCATTERED (SOME, LOW NUMBERS)

- enough present for mutual reaction to be possible but no ground or basking groups seen;
- 1 - 20 adults/400 m foot transect (or 25 - 500/ha).

GROUP

- forming ground or basking groups;
- 20+ adults/400 m foot transect (or 500+/ha).

ADULT SWARM AND HOPPER BAND SIZES

VERY SMALL

- swarm: less than 1 km^2 • band: 1 - 25 m^2

SMALL

- swarm: 1 - 10 km^2 • band: 25 - 2,500 m^2

MEDIUM

- swarm: 10 - 100 km^2 • band: 2,500 m^2 - 10 ha

LARGE

- swarm: 100 - 500 km^2 • band: 10 - 50 ha

VERY LARGE

- swarm: 500+ km^2 • 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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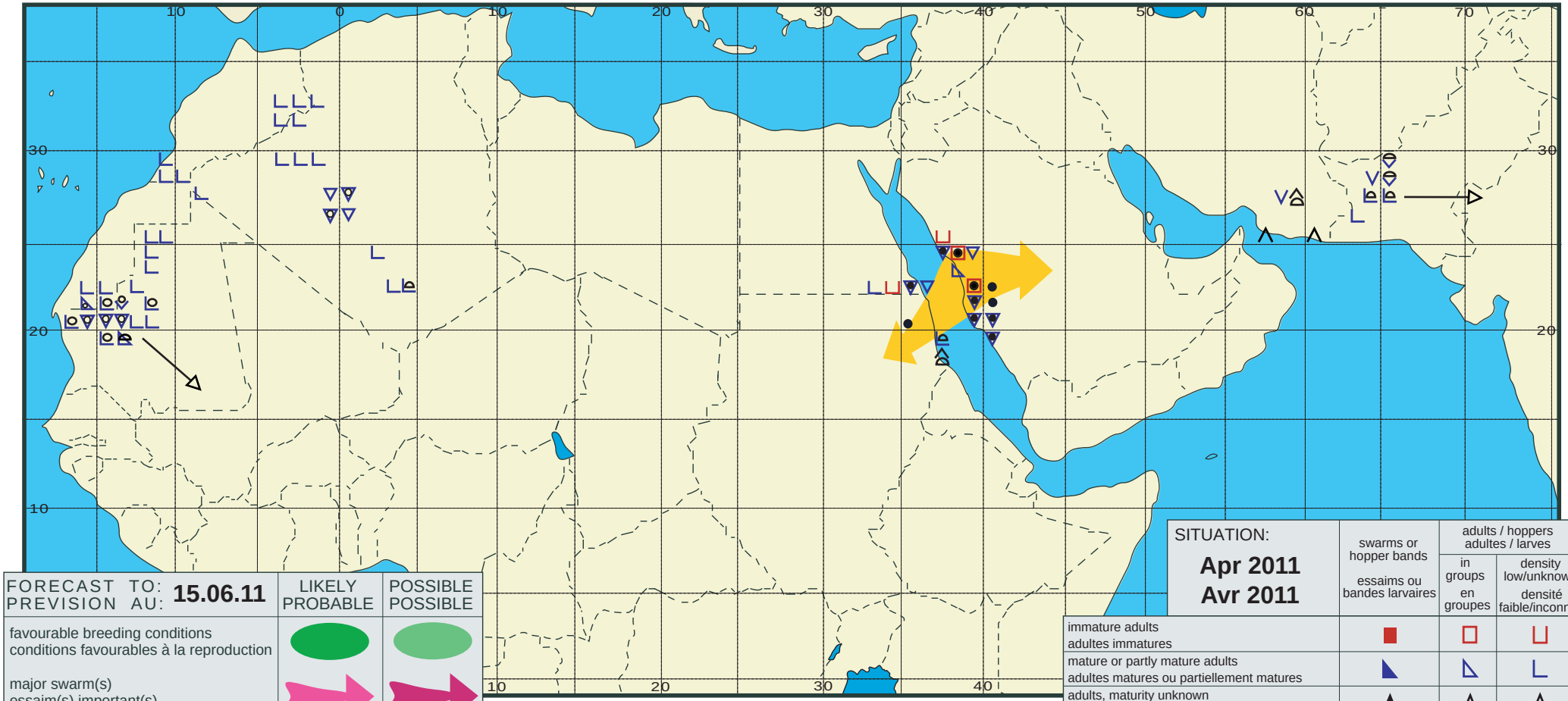

FORECAST TO: / PREVISION AU: **15.06.11**	LIKELY / PROBABLE	POSSIBLE / POSSIBLE
favourable breeding conditions conditions favourables à la reproduction		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

SITUATION: **Apr 2011 / Avr 2011**	swarms or hopper bands essaims ou bandes larvaires	adults / hoppers adultes / larves: in groups en groupes	adults / hoppers adultes / larves: 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)	◘	◙	◒