



FAO



EMERGENCY CENTRE FOR LOCUST OPERATIONS

DESERT LOCUST BULLETIN No. 212



GENERAL SITUATION DURING APRIL 1996 FORECAST UNTIL MID-JUNE 1996

During the second half of March and in early April, locust infestations increased substantially in North-West Africa. In the extreme south of Morocco and in western Algeria, aerial and ground control operations were in progress. In both areas, infestations consisted primarily of late instar hopper patches and bands, and those in Morocco already started to turn into adults. Last minute unconfirmed reports stated that immature swarms have appeared in northern and western Mauritania. They could continue migrating further south. No major developments were reported from other countries.

Additional hopper infestations were reported from areas difficult of access in the extreme south in Morocco and immature adult groups were forming from late March onwards. Aerial control operations were undertaken for the first time this year, totalling more than 32,000 ha (mid-March to mid-April). The situation was reported as improving by mid-April. In western Algeria, gregarious hoppers were reported south of the Atlas Mountains and ground control operations started in April, covering about 2,500 ha. Despite infestations on a smaller scale than in 1995, the situation continues to require careful monitoring in both countries.

In Mauritania, small hopper infestations were present in border areas adjacent to those in Morocco during the second half of March, but little control (13 ha) was required. However, during April, there were unconfirmed reports of swarms crossing the border and reaching as far as 200 km north-east of Nouakchott. If these reports are confirmed, they could represent a threat to irrigated cropping areas in the Senegal River Valley. There were no clear indications to date on size and swarm densities.

In the Red Sea Trench, isolated adults were reported only in the extreme south-east of Egypt, and no locusts were reported from Somalia and Saudi Arabia. A few solitary adults and hoppers were found at two locations on the Batinah coast of Oman.

Small scale breeding occurred on the Makran coast of Pakistan and low numbers of gregarious adults were observed, as well as scattered adults at a few locations in western Baluchistan. No major developments are expected. Isolated adults were seen in the interior of Baluchistan of Iran. Conditions were drying out in most places.

The unconfirmed reports in Mauritania require urgent and careful clarification. Further details are awaited and a special update will be issued within the next few days for the West and North-West Africa countries.

The FAO Desert Locust Bulletin is issued monthly, supplemented by Updates during periods of increased Desert Locust activity, and is distributed by fax, e-mail, FAO pouch and airmail by the Locust, Other Migratory Pests and Emergency Operations Group, AGP Division, FAO, 00100 Rome, Italy. It is also available on the Internet.

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WEATHER & ECOLOGICAL CONDITIONS DURING APRIL 1996

Based on field reports, METEOSAT and NOAA satellite imagery, and Météo-France synoptic and rain data. Rainfall terms: light = less than 20 mm of rain; moderate = 20 - 50 mm; heavy = more than 50 mm.

During April, there were no significant rain events in most of the areas, apart from North-West Africa and the western part of the Arabian Peninsula. In Africa, the ITCZ has gradually started its northwards movement and it was generally located between 10N and 15N, although it reached as far north as 18N over the Air Mountains of Niger on the 8th, and 19N over the Adrar des Iforas of Mali on the 22nd. Nevertheless, cloud patterns began to change with some seasonal dense cumulonimbus building up at times.

Cloud activity did not suggest an occurrence of significant rains over West Africa. In Mauritania, temperatures were unusually high with several sand storms. Ecological conditions are expected to have dried out in most places. Locust movements may have been facilitated by northerly winds which prevailed most of the month, apart from two periods of southerlies on the 8th-13th and 17th-20th. In Niger, Niamey received some rains during the last week of April, and in north-eastern Mali, Gao and Tessalit received a few light showers.

Ecological conditions were already favourable in southern Morocco and the western Sahara of Algeria as a result of rains received during the previous months. A few light rains which fell again in some of these areas are likely to allow such conditions to persist at some places such as Wadi Draa and in wadis south of Bechar. Heavy rains fell over the Hoggar Mountains and near Tamanrasset (59 mm on the 16th-17th and 38 mm on the 25th) where road traffic was blocked by floods. However, no locusts are expected to be present at this time of the year to take advantage of any improving conditions. Conditions may be favourable in some places in southern Tunisia as a result of previous rains during March and additional light rainfall received during the last week of April.

Cloud activity suggested that a few localized rains may have fallen in the Red Sea Trench on the Eritrean coast and in northern Somalia, and perhaps on the southern coast of Sudan. If so, conditions may start to improve although it is not likely to be on a large extent. Some green vegetation and soil humidity persisted on the extreme south-eastern coast of Egypt early in the month.

On the eastern side of the Red Sea, dense clouds were more frequent throughout the second fortnight of April, primarily over the south of the Asir Mountains and adjacent areas of the interior in Saudi Arabia and western Yemen. For example, ecological conditions are expected to be favourable in Wadi Najran which received heavy rains in late March and again a light shower on the 20 April. A few clouds developed over central Saudi Arabia where light rains occurred. Some green vegetation was present on the Batinah coast of Oman.

Conditions were dry in the interior of Baluchistan of Iran near the Pakistan border and they were drying in the adjacent areas in Pakistan as well as on most of the Makran coast. A few light rains were received in Rajasthan of India during the third dekad of April, but these are not expected to be sufficient to improve ecological conditions.



AREA TREATED

Algeria	ca. 2,500 ha	(1-30 April)
Mauritania	13 ha	(15-31 March)
Morocco	7,510 ha	(16-31 March)
	25,200 ha	(1-15 April)
Pakistan	no details	(22-23 April)



DESERT LOCUST SITUATION

Please see the last section of this Bulletin for a definition of terms used in reporting the current locust situation.

WEST AFRICA

MAURITANIA

During the second half of March, several patches and bands of first to fourth instar hoppers, ranging in area from 10 to 2,500 m², were found near the Moroccan border around Tmeimichat (2117N/1419W) where a total of 13 ha were treated. Elsewhere, scattered solitary adults were reported at several locations in western Tagant, northern Brakna and eastern Trarza, between north of Bir Allah (1803N/1359W), Tamassoumit (1832N/1239W) and Tidjikja (1832N/1126W), and five isolated solitary fourth and fifth instar hoppers were found at 1850N/1212W.

During April, there were unconfirmed reports of immature swarms, some of them dense, in the north near Zouerate (2241N/1240W), Choum (2118N/1359W), Atar (2031N/1303W) and as far south as Akjoujt (1945N/1424W), and possibly in northern Tagant. If so, this indicates that an early and significant southwards migration is in progress. Further details are awaited.

No reports were received from other countries in the Region up to 30 April.

NORTH-WEST AFRICA

MOROCCO

During the second half of March, increasing numbers of late instar hopper bands and groups of new adults were reported within a total area of 35,000 ha in remote areas of the extreme south-west, primarily near Tichla (2135N/1458W) and Lahricha (2234N/1447W). Aerial control operations were undertaken for the first time during this campaign and 7,510 hectares were treated. By the end of the month, there were additional reports by nomads of late instar hopper bands and fledglings further south near the Mauritanian border. These were said to be present over a distance of 18 km and to range in size from 5,000 m² to 6 ha.

During the first half of April, additional infestations of late instar hoppers mixed with new adults were reported again in the Tichla area, primarily near Draa Eig (2144-2240N/1429-1508W), and aerial control operations treated 25,200 ha. By mid-month, the situation was reported as improving although adult groups escaped and some were found further north up to 2356N/1323W and 2401N/1333W.

ALGERIA

During the first three weeks of March, scattered adults including a few isolated yellow ones, were reported from four locations east and south-east of Tindouf (2741N/0809W). On the 27th, black first instar hoppers, at a density of 200 to 300 per bush, were reported over 100 m² south-west of Tabelbala (2923N/0316W) and a few isolated bright yellow adults were found in another location nearby. Albeit on a small scale, this was the first indication of gregarious migration and breeding south of the Atlas Mountains in 1996.

During the first half of April, additional hopper infestations of second and third instars, up to 400 per sq.m., were found again near Tabelbala. Ground control operations started and treated 164 ha. During the second half of the month, more bands of hoppers of second to fourth instars were found in the same area. Fledglings started to appear at one location. About 2,300 ha were treated. No locusts were found in the Adrar (2753N/0017W) and Tamanrasset (2247N/0552E) areas.

No reports were received from other countries in the Region up to 30 April.

EASTERN AFRICA

SOMALIA

During March, no locusts were found during a survey along the northern coast between Bosasso (1122N/4910E) and Las Koreh (1109N/4812E) on the 9th-14th, and in the interior along the road between Berbera, Las Anod (0826N/4718E) and the Ethiopian border nearby on the 20th-26th.

No reports were received from other countries in the Region up to 30 April.

NEAR EAST

EGYPT

On 6 April, isolated mature adults were reported from the extreme south-eastern coast at six locations near Halaib (2213N/3638E) and in the southern Nile Valley at two locations near Seyala (2259N/3245E).

SAUDI ARABIA

No locust activity was reported during April.

OMAN

On 16 April, isolated immature adults and hoppers of all instars, at densities up to 13 per hectare, were reported over a few tens of hectares on the Batinah coast at two locations (2335N/5737E and 2351N/5711E).

KUWAIT

No locust activity was reported from the Al-Wafra (2834N/4804E) and Al-Abdaly (3005N/4742E) areas during March.

No reports were received from other countries in the Region up to 30 April.

SOUTH-WEST ASIA

IRAN

In late April, no locusts were found in the interior of Baluchistan near Mirjaveh (2901N/6128E) on the 25th, but isolated mature solitary adults were reported in the Suran Valley (2717N/6200) on the 26th.

PAKISTAN

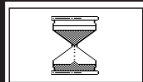
During the second half of March, isolated adults were reported from a total of 55 locations primarily on the western Makran coast (48 locations) and to a lesser extent in the Uthal district (7 locations). A maximum of 16 adults were seen at Sulaika (2550N/6256E) in the Turbat district on the 23rd. At this location, solitary first to fifth instar hoppers were also found within an area of 2 sq. km.

Nearby, during the second half of April, inhabitants reported a swarm at Shooli (2535N/6206E) on the 17th, but only small numbers of yellow mature adults were found by a survey team on the 19th. A few adults were seen copulating at this location, mixed with low density first to fifth instar hoppers (up to 6 per sq. m.). Ground control operations were undertaken. Isolated fourth instar hoppers and a few mature adults were also reported within the same area at Sulika (2553N/6243E) on the same day. Elsewhere along the coast up to the Pasni area, only one adult was seen at Speak (2523N/6347E) on the 24th. In the interior of western Baluchistan, scattered solitarious adults were reported from six locations on the 14th-18th, with a maximum of 12 adults seen in the Bedi area (2233N/6511E).

INDIA

No locust activity was reported during the second half of March and the first half of April.

No reports were received from other countries in the Region up to 30 April.



FORECAST UNTIL MID-JUNE 1996

Forecasting terms used in this section to indicate the chances of a particular event happening are indicated below; every term is arranged within each category from most to least probable:

high probability	will, probably, almost certain, likely, expected
medium probability	may, might
low probability	possibly, perhaps, unlikely

WEST AFRICA

MAURITANIA

Based on very recent information received, the situation is difficult to assess. If the swarms reported in the north are confirmed, the possibility must exist that migration further south will continue if northerly winds persist and could be a threat to irrigated crops in the Senegal River Valley. In the absence of confirmation, any small numbers of adults present are likely gradually to move towards the traditional summer breeding areas in the south. Scattered adults, possibly a few groups or small swarms, may escape control operations and appear from North-West Africa by the end of the forecast period. No breeding is expected at this time of the year due to generally dry conditions.

SENEGAL

If swarm infestations in Mauritania are confirmed, there is a possibility that some could move across the Senegal River. Otherwise, low numbers of adults might appear from the north by the end of the forecast period.

MALI

Isolated adults may be present in a few places of the Adrar des Iforas. Numbers may increase during the second half of the forecast period as low numbers of adults arrive from the north. There may be a possibility, if swarm infestations in Mauritania are confirmed, that some groups and perhaps a few small swarms could appear in the west.

NIGER

Isolated adults may be present in a few places of Tamesna. Numbers may increase during the second half of the forecast period as low numbers of adults arrive from the north.

BURKINA FASO, CAMEROON, CAPE VERDE, CHAD, GAMBIA, GUINEA BISSAU and GUINEA CONAKRY

No significant developments are likely.

NORTH-WEST AFRICA

MOROCCO

Adult groups and possibly some small swarms that escaped control operations in the extreme south may still move north towards areas of recent rains south of the Atlas Mountains, mature and lay during May. Some may also perhaps have started moving south towards the summer breeding areas of the Sahel. Some infestations are expected to be already present in the Wadi Draa area near the Algerian border where breeding may have occurred.

ALGERIA

Any escapees from control operations are expected to form adult groups, perhaps a few small swarms, which are likely to mature and lay in areas of recent rains around Tabelbala and perhaps adjacent areas. If so, new hopper infestations will appear during the second half of the forecast period.

TUNISIA and LIBYA

No significant developments are likely.

EASTERN AFRICA**SUDAN**

Isolated adults may be present in Wadi Oko/Diib. Scattered adults may appear on the Red Sea coast from the east.

ERITREA

Scattered adults may appear on the Red Sea coast from the east.

SOMALIA

Isolated adults may be present on the northern coast and lay if rainfall occur.

DJIBOUTI, ETHIOPIA, KENYA, TANZANIA and UGANDA

No significant developments are likely.

NEAR EAST**EGYPT**

Isolated adults are expected to persist at a few places on the south-eastern coast.

SAUDI ARABIA

Isolated adults may be present and breeding in areas of recent rains in some wadis on the eastern side of the Asir Mountains and at some places in the central interior. Scattered adults are likely to be present on the Red Sea coast.

YEMEN

Scattered adults are likely to be present and breeding in areas of recent rains of the interior in Wadi Jawf, Wadi Hadhramaut and Ramlat Sabatayn. Isolated adults may be present along the coastal plains of the Red Sea and the Gulf of Aden.

OMAN

A few additional small adult and hopper infestations may be present on the Batinah, and perhaps in the Sharqiya. Surveys should continue to monitor the situation.

UAE

Isolated adults are likely to be present and persist in the Fujayrah and Ras Al Khaimah areas where small scale breeding may have occurred. Surveys should be undertaken to monitor the situation.

BAHRAIN, IRAQ, ISRAEL, JORDAN, KUWAIT, QATAR, SYRIA and TURKEY

No significant developments are likely.

SOUTH-WEST ASIA**IRAN**

Isolated adults are likely to persist in the interior of Baluchistan, and others are expected to be present on the south-eastern coast. However, the overall infestation will decline as a result of dry conditions and some adults could begin their seasonal eastward migration towards the summer breeding areas of the Indo-Pakistan desert by the end of the forecast period.

PAKISTAN

As a result of hopper development, additional low numbers of adults will appear on the Makran coast. These and those present in the interior are expected to persist in a few areas remaining green. However, the overall infestation will start to decline if conditions continue to dry out and adults are expected to begin their seasonal eastward migration towards the summer breeding areas of the Indo-Pakistan desert by the end of the forecast period.

INDIA

Isolated adults are expected to be present and persist at a few places in Rajasthan. Additional adults are

expected to appear from the west by the end of the forecast period, but this will almost certainly be on a small scale.

AFGHANISTAN

No significant developments are likely.



GLOSSARY OF TERMS

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

Non-gregarious adults and hoppers

isolated	very few present and no mutual reaction occurring; 0 - 1 adult per 400 m foot transect (or less than 25 per ha). Other terms: a few.	
scattered	enough present for mutual reaction to be possible but no ground or basking groups seen; 1 - 20 adults per 400 m foot transect (or 25 - 500 per ha). other terms: some, low numbers.	
group	forming ground or basking groups; more than 20 adults per 400 m foot transect (or more than 500 per ha).	

Adult swarm and hopper band sizes

very small	swarm: less than 1 sq. km	band: 1 - 25 sq. m.
small	swarm: 1 - 10 sq. km	band: 25 - 2,500 sq. m.
medium	swarm: 10 - 100 sq. km	band: 2,500 sq. m - 10 ha
large	swarm: 100 - 500 sq. km	band: 10 - 50 ha
very large	swarm: more than 500 sq. km	band: more than 50 ha

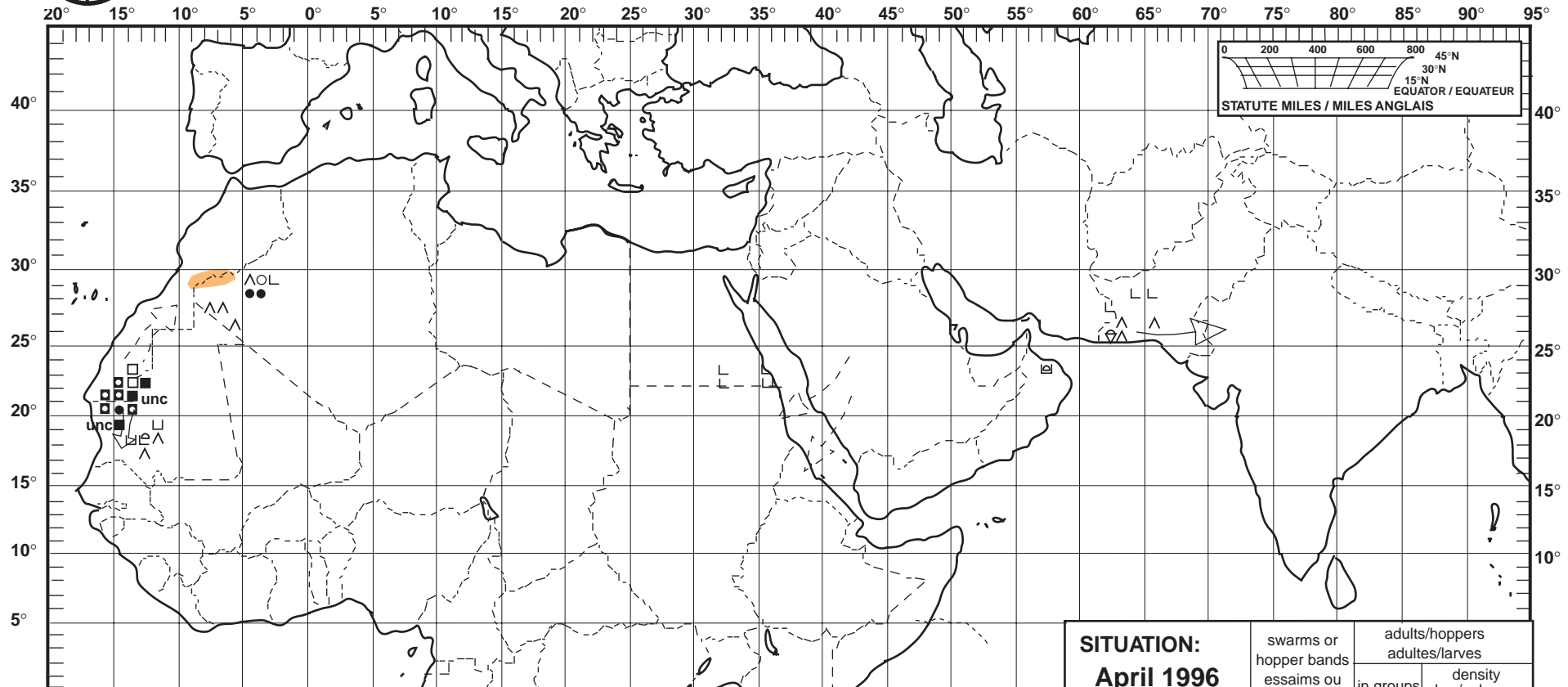
Other reporting terms

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.
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.
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.



Desert Locust: summary Criquet pèlerin: situation résumée

No. 212



FORECAST TO: PREVISION AU: 15.06.96	LIKELY PROBABLE	POSSIBLE POSSIBLE
current undetected breeding reproduction en cours et non détectée		
major swarm(s) essaim(s) important(s)		
minor swarm(s) essaim(s) limité(s)		
non swarming adults adultes non essaimant		

**SITUATION:
April 1996
avril 1996**

	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)	◼	◉	◍