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Locusts, other migratory pests and emergency operations group

DESERT LOCUST SITUATION SUMMARY AND FORECAST

NO. 121 SEPTEMBER-MID OCTOBER 1988

SUMMARY

New generation swarms continued to form on a large scale throughout the Sahelian zone of West Africa and in Eastern Africa throughout the summary period. Many swarms matured quickly by mid September in the highly favourable conditions and bred successfully resulting in moderate to large scale second generation hopper bands in Mali, Niger and western Chad by early October. However, from mid September onwards large scale migration occurred from south-east Mauritania. Initially migration was in a northerly and westerly direction with swarms invading northern and south-western Mauritania and adjacent western parts of the Sahara and southern Morocco. Later migration in a southerly direction resulted in substantial invasions of Cape Verde, Senegal, Gambia and Guinea Bissau. Moderate to large scale breeding occurred in most invaded areas. Large populations of locusts were also reported by ships off the West African coast and in the Atlantic Ocean and by mid October locusts had reached many islands in the eastern Caribbean and Surinam and Guyana on the South American mainland. Between late September and mid October a small to moderate scale invasion of North-West Africa occurred with swarms reaching Morocco and central Algeria. Low density adults were also reported from southern Tunisia, south-west Libya and northern Algeria.

In Sudan large scale swarm formation continued throughout the summary period. Migration north-east towards the Red Sea coast and adjacent regions occurred in late September. Large scale laying subsequently occurred and continues to be reported and by mid-October hatching was in progress. Small scale breeding was also reported in western and central Sudan. In mid-October a large number of swarms crossed the Red Sea from Eastern Africa to invade western Saudi Arabia where breeding is in progress. Elsewhere in the region, small to moderate scale swarm formation was also reported from northern Ethiopia in late September and Djibouti was invaded in early October although the origin of these swarms is not clear.

Moderate to large scale control measures continued throughout the summary period.

WEST AFRICA

Meteorology

The Inter-Tropical Convergence Zone (ITCZ) moved gradually southwards during the summary period and by late September-early October was located between 12 and 14 degrees north although there were several brief northerly movements to 18 and 20 degrees north. A low pressure area centred over Spain and a blocking high in the Mediterranean resulted in a strong southerly airflow in the first half of October over Mali, Niger and Chad.

Breeding Conditions

Analysis of NOAA/VHRR imagery indicated that in general breeding conditions remained favourable throughout most of the region during September. However, by late September conditions started to deteriorate north of 16 degrees with the exception of Senegal where conditions remained very favourable. In general only light scattered rain fell north of 13 degrees in Mauritania, Mali, Niger and Chad in the first two decades of October.

Locusts

MAURITANIA

Trarza and Brakna

In late September a number of dense mature copulating swarms were reported in the Tiguent, Aleg, Boutlimit, Bousdera (1734N/1413W), Tagoura (1753N/1415W) and Bou Teydouma areas. Migration was reported to be in a westerly to south-westerly direction. Laying was observed at several localities. By the end of the second decade of October early instar bands, fledglings and swarms were reported in the Boutlimit, R'Kiz and Aleg areas.

Inchiri

Swarms were reported near Nouakchott in late September. A swarm was reported from Nouakchott on 6 October. Early instar hopper bands, fledglings and mature swarms were reported in the Nouakchott area on 20 October.

Hodh Gharbi, Hodh Charki and Assaba

In the first half of September predominantly late instar hopper bands and fledglings were reported throughout the Hodh Charki region. Immature swarms were also observed. In the Hodh Gharbi region small pockets of hoppers were reported to be widespread and a large number of immature swarms formed in the second half of September and migrated to the north and west. Hatchings were reported from the Kiffa, Guerou (1648N/1150W) and Boumedeid areas in the first half of September.

In the first half of October a substantial infestation of mixed instar bands and fledglings was reported in the Bassikounou-Fassala area extending east to the Mali border and north to the 18th parallel.

Tagant

Mature swarms were reported at Tamount Naage, Gubon and Bouraga (1753N/1212W) in the first half of September.

Adrar

Swarms of mixed maturity were reported in the region from 17 September onwards at Chinguetti (2027N/1222W), Ouadane (2056N/1137W), Adifer El Abiod and Adifer El Akhder. Additional swarms were reported in the Atar area in early October.

Tiris Zemmour

In the first half of October there were unconfirmed reports of substantial locust populations in the Bir Moghrein area in the vicinity of the Algerian border.

Control operations continued in Mauritania throughout the summary period but no details are available.

CAPE VERDE

Scattered mature locusts were reported from most islands on 27 and 28 September. A further invasion of all islands was reported between 5 and 6 October with one small swarm seen on Maio Island. By 12 October a serious situation was confirmed with small, mainly immature, high density swarms reported from Santo Antao, Fogo, Sal, San Nicolau, Maio, Boa Vista, Santiago, Brava and San Vincente islands. Swarms varied in size from 1 to 9 sq. km and considerable damage to trees, crops and pasture was reported. Control operations are in progress but no details are available.

ATLANTIC OCEAN

Two ships reported isolated mature locusts at position (1200N/2442W), approximately 150 km south of Cape Verde, and at position (1600N/2400W), 120 km west of Boa Vista, on 6 October. Winds were reported as north-easterly at 13 to 20 knots.

Between 8 and 9 October two ships located approximately 900 and 1200 km east of Trinidad reported large numbers of locusts flying to the west in easterly winds of 8 to 27 knots. Ship locations were given as follows, (i) 1338N/5212W to 1046N/4926W (ii) 1526N/5108W to 1338N/4507W. Another ship reported groups of pink and yellow locusts being seen consistently from (0800N/2100W) to (1330N/5500W) between 11 and 16 October. Several additional reports were received of mature and immature locusts off the West African coast and from mid-Atlantic up to 20 October.

SENEGAL

Several large dense mature swarms, one swarm estimated at between 400 and 600 sq. km, invaded the Podor-Louga area of northern Senegal on 22 September. A second invasion was reported on 27 September with large swarms of mixed maturity reported in the Dagana-Podor area. Swarms migrated in a southerly direction and had reached Tivaouane, Thies, Kaolack and Dakar in late September-early October where laying was reported. Damage to crops was reported as slight. Hatchings were reported in the Rao and Louga areas on 5 and 7 October respectively. Further hatchings were reported in the St. Louis, Louga, Kebemer, Tivaouane, Diourbel and Thies areas in the first half of October. By mid October mature swarms were reported at Tambacounda, Kolda and Ziguinchor in southern and eastern Senegal and laying was in progress. Additional immature swarms were also reported to have invaded northern Senegal from 12 October onwards. By 20 October 345,719 ha had been treated by ground and aerial methods.

GAMBIA

Swarms were reported from Gambia on 4 October. On 11 October five mature swarms, varying in size between 10 and 100 sq. km, were reported in the Banjul and Bansang areas and egg laying was observed. Additional small mature swarmlets, approximately 2 to 10 ha in area, were reported in the Georgetown, Farafeni and Birkana areas on 17 October. Widespread hatchings were reported in the Diawara (1340N/1610W) and Njawara areas in the second half of October. Control measures were in progress.

GUINEA BISSAU

A large medium density mature swarm was reported at Doungal near the Senegal border on 12 October. Between 15 and 21 October swarms, some reported laying, were present in the Susana (1218N/1628W), Varela (1217N/1636W), Arame (1200/1626W), Baram (1206N/1613W), Badiob (1207N/1614W), Banhinda (1216N/1602W) and Cacheu (1216N/1610W) areas. Control measures were in progress.

CAMEROON was reported free of locusts up to 11 September.

BURKINA FASO was reported free of locusts up to 16 September.

MALI

In the first half of September late instar hopper bands and fledglings were reported in the Lakes region and also in the Gourma area. The Niger river valley between Gao, Bourem and Ansongo was reported to be infested with mature laying swarms and hopper bands. Laying was reported in the Soumpi (1550N/0420W), Niafunke, Kanioume, Bambara Maounde, Tombouctou, Gourma Rharous, Gao and Doro areas in mid-September. A large swarm, estimated area 100 sq. km, was also reported at Tarlit on 27 September.

By mid October a substantial infestation of mixed instar hopper bands and fledglings was reported to extend east from the Mauritanian border to Lere in the Lakes region and further east towards Tombouctou. A further serious infestation of late instar hopper bands and immature swarms was also reported in Tamesna. Control operations continued throughout the summary period and by 30 September 226,590 ha had been treated.

NIGER

In the first decade of September the scale of the infestations in the Tahoua, Zinder, Maradi and Diffa areas decreased substantially as generally small swarms formed and migrated to the north and north-east. Control operation in the southern regions terminated in mid-September. In the same period several small, 1 to 5 sq. km, medium density maturing swarms were reported south of Agadez and between Agadez and Arlit, the Talak plain in Air and also in the Aderbissinat, Ingall, Tassedat, Tasker, Totokou and Tanout areas. Swarms reported north of Agadez were reported to be mating and laying was observed. In the second decade of September small areas of mixed instar hopper bands were reported in western Air from the Egargar Ngouas (1805N/0741E) and Taguelat (1900N/0750E). Swarms were reported from Arlit in late September and also from the N'Guigma of eastern Niger on 22 September.

In late September-early October approximately 50,000 ha of second instar hopper bands were reported in Tamesna (1750N to 1930N, 0540E to 0610E) and it was suspected that similar infestations extended west towards the Mali border. By mid October late instar bands, fledglings and immature swarms were reported

in western Air extending north from Agadez to Arlit and north to the Algerian border. In addition a substantial infestation of low density immature adults and scattered late instar hopper bands was reported in the Tahoua area in mid October and migration in a westerly direction was observed. Control operations were undertaken throughout the summary period and by 6 October 567,144 ha had been treated.

CHAD

Kanem

In the second half of September a number of mature and immature swarms were reported in the Nokou, Mao, Nguelia (1331N/1512E), Ngolio (1341N/1437E), Ziguei (1443N/1547E), Moto (1340N/1527E), Miow (1401N/1506E) and Bara (1417N/1513E) areas and laying occurred. Hatchings commenced in early October but subsequent reports indicated that only scattered hopper bands formed.

Batha and B.E.T.

In the second half of September both mature and immature swarms were reported in the Fada-Kalait area and laying was observed in some areas. In late September additional swarms were reported from the Bao (1628N/2301E), Fada (1714N/2133E), Nabar (1854N/2109E) and Chourchilli (1938N/1916E) areas.

Biltine and Ouaddai

In the second half of September swarms were reported from Iriba (1507N/2215E), Biltine and Guereda (1431N/2205E) flying towards the north and north-west.

Control operations continued throughout the summary period with 71,357 ha treated by 22 September.

NORTH-WEST AFRICA

Meteorology

Analysis of NOAA cloud imagery indicates that light to moderate rain fell along the Mediterranean littoral of Algeria, Morocco and Tunisia in the first half of October extending south to approximately 31 degrees north in western Algeria.

Between 12 and 17 October a low pressure system centred over Spain directed a warm southerly air flow over North-West Africa.

Breeding Conditions

Analysis of NOAA/VHRR imagery indicates that most of the region remains dry and unfavourable for breeding with the exception of the Mediterranean littoral areas.

Locusts

ALGERIA

Swarms were reported to have invaded the In Guezzem and Bordj Mokhtar areas of the extreme south of Algeria in mid-September. Between mid September and mid-October there was a northward migration of locusts from the south of Algeria and adjacent areas of neighbouring countries. Subsequently there were numerous reports of small, 1 to 10 sq. km, swarms and adult groups, both

mature and immature, from the Tamanrasset, Adrar, Illizi, Bechar, Tindouf, El Bayadh, Ghardaia, and Laghouat regions. Scattered low density adults were reported as far north as Tlemcen. By mid-October early instar hoppers were reported from several localities in the Tamanrasset region. Control operations were undertaken in most regions but particularly in the Tamanrasset, Bechar and El Bayadh regions. By 24 October 43,000 ha had been treated.

MOROCCO

Swarms were reported to have invaded the Bouarfa, Guelmim, Tata, Errachidia, Guercif and Ouarzazate areas of Morocco between late September and early October. No reports of breeding by invading swarms have been received. Control operations commenced in the above areas on 10 October and by 22 October 59,480 ha had been treated.

TUNISIA

Low density adults were reported in the extreme south of Tunisia in early October.

LIBYA

A small low density immature swarm, estimated size 35 ha, was reported near Ghat on 13 October.

EASTERN AFRICA

Meteorology

The ITCZ moved gradually south over the summary period and by early October was located around 15 degrees north. Moderate rain fell north of 15 degrees in September. A low pressure area over southern Turkey directed an westerly to north-westerly air flow over eastern Sudan in mid October.

Breeding Conditions

Analysis of NOAA/VHRR imagery indicates that in general breeding conditions remained favourable south of 15 degrees in Sudan and in Ethiopia throughout the summary period. NOAA/VHRR imagery also indicated the presence of substantial areas of green vegetation in the Ogaden region of south-east Ethiopia and adjacent areas of Somalia from late September onwards.

Locusts

SUDAN

The overall situation in Sudan deteriorated over the summary period with major migration of mature swarms to the north-east and subsequent breeding from late September onwards. Second generation hopper bands were present from Darfur east to the Red Sea coast by mid-October and mature swarms also persisted in all the regions described below.

Darfur (North and South)

A large number of predominantly late instar hopper bands and fledglings were present in these regions in early September particularly in the Umm Baru (1502N/2308E), Malha (1447N/2650E), El Geneina and El Fasher areas of northern Darfur and the Manawashe (1240N/2500E) and Khasah Djedid (1240N/2542E) areas of southern Darfur. Early instar bands were also reported in the Nalha area

and there was an unconfirmed report of fledgling bands in north-west Darfur adjacent to the Chad border. In the second half of September large scale swarm formation was widespread and immature swarms, ranging in size from 5 to 300 sq. km, were reported in the Kebkebiya, Zalingei and El Fasher areas and migration in a north-east to north-west direction was reported. By early October both mature and immature swarms persisted in the Abu Hamira (1255N/24440E), El Fasher, Musbat (1500N/2500E), Umm Baru, and Kenana (1508N/2619E) areas and swarm laying was reported.

Kordofan

A large number of predominantly late instar bands and immature swarms were present in the Sodiri, Kagmar, Umm Saiyala and Wadi Milh areas in late September. By early October swarm migration to the north-east was in progress but substantial swarm laying occurred in situ and by mid October widespread hatching and early instar second generation hopper bands were reported in the region.

White Nile

In mid-September late instar hopper bands and immature swarms were present in the Ed Dueim area. By late September a number of large mature and laying swarms, up to 40 sq km in area, were reported in the region.

Khartoum

Immature swarms formed in the region from early September onwards. Swarms were reported flying to the north-east over Khartoum almost daily from late September. Small scale laying occurred in several areas in late September and by the first decade of October early instar second generation hopper bands were reported from several localities.

Gezira

Both mature and immature swarms were reported in the Gezira region during the summary period, many flying towards the north-east. Damage to cotton and sorghum was reported.

Northern

In late September both mature laying swarms and immature swarms together with late instar hopper bands were present in the Shendi, Atbara, and Ed Debba areas. In the first decade of October a large number of mature swarms persisted in these areas and there were also reports of laying and substantial areas of second generation early instar bands as far north as Merowe.

Kassala

In mid-September a large area adjacent to the Ethiopian border from Kassala to Karora was reported to be infested by late instar hopper bands. By early October both immature and mature swarms were present in the Kassala, Ungawatiri and Wadi Odi areas and hatching of second generation hoppers was reported in mid October.

Red Sea Coast

Swarms invaded the region from the second half of September onwards and substantial laying occurred particularly in the Sinkat, Musmar and Durdeb areas by early October and is continuing at present. Mature adult groups were also reported to extend from Port Sudan north towards the Egyptian border in early October. By mid October hatching was in progress in the region.

Large scale control operations continued throughout the summary period with 561,172 ha treated by 17 October.

ETHIOPIA

Widespread fledging commenced in the Ingherne (1535N/3802E) area in mid-September. In late September and the first half of October a number of small dense immature swarms varying in size between 1 and 15 sq. km were observed in the Agordat, Himberti (1518N/3837E), Dabaroa (1517N/3848E), Ghinda, Keren, Asmara and Areza areas and other localities within this general area. There was an unconfirmed report of a swarm near Dewele (1102N/4259E) in late September. Control operations continued throughout the summary period but no details are available.

DJIBOUTI

Adult locusts were reported from Djibouti on 29 September. On 30 September a large swarm was reported 20 km north of Dorra but was not located by subsequent aerial surveys. A small mature swarm estimated at 15 sq. km was seen near Gamela in early October and there was an unconfirmed report of a swarm in the Dikhil area at this time.

SOMALIA

There was an unconfirmed report of a swarm near Galcaio (0647N/4721E) on 17 October.

KENYA, TANZANIA and UGANDA : no locust activity was reported during the summary period.

NEAR EAST

Meteorology

Analysis of NOAA cloud imagery indicates that light to moderate rain fell along the southern Tihamas of the Yemen Arab Republic and Yemen PDR extending east into western Oman in the second decade of September. Heavy rain was reported on the central Tihama of Saudi Arabia in the second decade of October. A low pressure system centred over Turkey directed a general south-westerly to southerly air flow over the Red Sea and Saudi Arabia in the second decade of October.

Breeding Conditions

Analysis of NOAA/VHRR imagery indicated that favourable breeding conditions persisted along the coastal Tihama of the Yemen Arab Republic and adjacent areas of the coastal Tihama of Saudi Arabia and Yemen PDR during the summary period. Elsewhere in the region conditions were assessed as unfavourable.

Locusts

KINGDOM OF SAUDI ARABIA

Low density hoppers of mixed instars were controlled over an area of 200 sq. km in the Wadi Hali area south of Qunfidhah (1908N/4105E) in late September. Between 13 and 14 October the Red Sea coast between Lith (ca. 2000N/4100E) and Al Badr (ca. 2400N/3900E) was invaded by a large number of swarms from the west and south-west. Subsequent invasions by both immature and

mature swarms were reported within the same general area on 16, 17 and 18 October. By 19 October swarms were reported at Medina 60 km inland from Jeddah, Taif and the Asir: egg laying was observed. Intensive control operations are in progress.

EGYPT

Several large mature swarms, ranging in size from 20 to 30 sq. km, were observed in the South Eastern Desert near Abu Ramad, Wadi Serentai (3630N/2210E), Wadi Shalal (3633N/2205E) and Shandeeb (3615N/2202E) between 5 and 13 October. Control operations were reported to be in progress.

YEMEN ARAB REPUBLIC was reported free of any significant locust activity up to 19 October.

IRAQ was reported free of locusts in August.

SOUTH-WEST ASIA

Meteorology

Light to moderate rain was reported in traditional summer breeding areas of Pakistan and India in the second half of September.

Breeding Conditions

Locally favourable breeding conditions are likely to be present in Pakistan and India.

Locusts

PAKISTAN

Scattered adults, maximum density 1200 per sq. km, were reported at Nakti (2537N/6611E) on 28 September.

INDIA

Low density adults were reported from 35 localities in the Bikaner, Barmer, Jodhpur and Jaisalmer areas during September. The maximum density observed was 2250 adults per sq. km at Jaswantgarh (2735N/7425E) on 22 September.

CARIBBEAN AND SOUTH AMERICA

Meteorology

There was a strong easterly to south-easterly air flow over the Caribbean in the first half of October.

Breeding Conditions

It is probable that suitable breeding conditions are present on some islands in the Caribbean.

Locusts

CARIBBEAN

As a result of a spectacular long range westward migration considerable numbers of locusts crossed the Atlantic Ocean and reached many islands in the eastern Caribbean in mid October. The most heavily infested islands were St. Lucia, St. Vincent and Dominica where immature adult groups were reported. There was an unconfirmed report of mating from Barbados on 24 October. By 26 October numbers were reported to have declined substantially and ground control was in progress.

SURINAM

Low to medium density immature adult groups were reported from eastern and central coastal regions on 20 and 21 October and numerous locusts were washed ashore on beaches.

GUYANA

Following unconfirmed reports on 18 October numerous locusts were observed on 27 October in the Essequibo area 50 km east of Georgetown.

FORECAST FOR NOVEMBER-DECEMBER

In West Africa further invasions of Cape Verde, Senegal, Gambia and Guinea Bissau may occur during late October-early November and there is a low to moderate risk of swarms invading western Mali and Guinea. Swarm laying will continue on a decreasing scale in recently invaded areas of Senegal, Gambia and Guinea Bissau until mid-November. Hatching and band formation on a moderate to large scale will continue in these areas until December. Swarm formation on a moderate to large scale will commence in Mali, Niger and Chad in early November. A considerable proportion of these swarms, which may be augmented by others from western Sudan, are likely to migrate to the north and north-west to invade the Maghreb. Others may move southwards with the retreating ITCZ. Some of the swarms produced in central and southern Mauritania may move north whilst others may move in a southerly direction. Swarm formation will commence in Senegal, Gambia and Guinea Bissau in late November.

In North-West Africa small to moderate scale hatching and band formation may occur in recently invaded areas of Algeria, Morocco, Tunisia and Libya during November. There is a high risk of large scale swarm invasions of North-West Africa by second generation swarms from West Africa and western Sudan from early November onwards.

In Eastern Africa breeding will end shortly in western and central areas of Sudan and numerous swarms will be produced. Many of these are likely to move west, particularly those west of the Nile, but those in the east are likely to move towards the Red Sea coast and add to those already breeding there. Large scale band formation will occur along the Red Coast and adjacent areas of Sudan during November. A large number of swarms are expected to form from mid to late November onwards in the Red Sea coastal areas when there will be a renewed risk of migration to the north and north-east.

In the Near East further swarm migration into Saudi Arabia may occur in early November. There is also a moderate risk of swarms now present in Saudi Arabia migrating in a northerly to north-easterly direction to invade Iraq,

Syria, Kuwait and Bahrain in late October-early November. There is a moderate to high risk of swarms invading the Yemen Arab Republic and Yemen PDR early in the forecast period. In Saudi Arabia hatching will commence in late October along the northern Tihama with moderate to large scale band formation occurring by mid-November depending on the success of current control measures. New generation swarms will start to form by early December when there will be a renewed risk of migration to the north towards Iraq, Syria, Jordan and possibly Turkey and north-east towards Kuwait, Bahrain and possibly Iran. There will also be a high risk of invasion of Egypt and re-invasion of Saudi Arabia from Sudan from mid-November onwards.

In South-West Asia there is a low risk that swarms now present in Saudi Arabia could migrate into Iran. No major change in the locust situation is expected in the remainder of the region.

In Europe there is a low to moderate risk of locusts reaching Spain, Portugal, Italy and Mediterranean islands in November. There is also a low to moderate risk of locusts reaching southern Turkey.

In South America and the Caribbean it is likely that small scale laying will occur during the second half of October with isolated hatchings commencing in November. It is considered unlikely that a viable breeding population will result. It should be noted that there is also a high probability that locusts reached other parts of the South American mainland, particularly Venezuela, in October.

Rome, 27 October 1988.

