

# Desert Locust Outbreak

SW Libya and SE Algeria  
January - June 2012



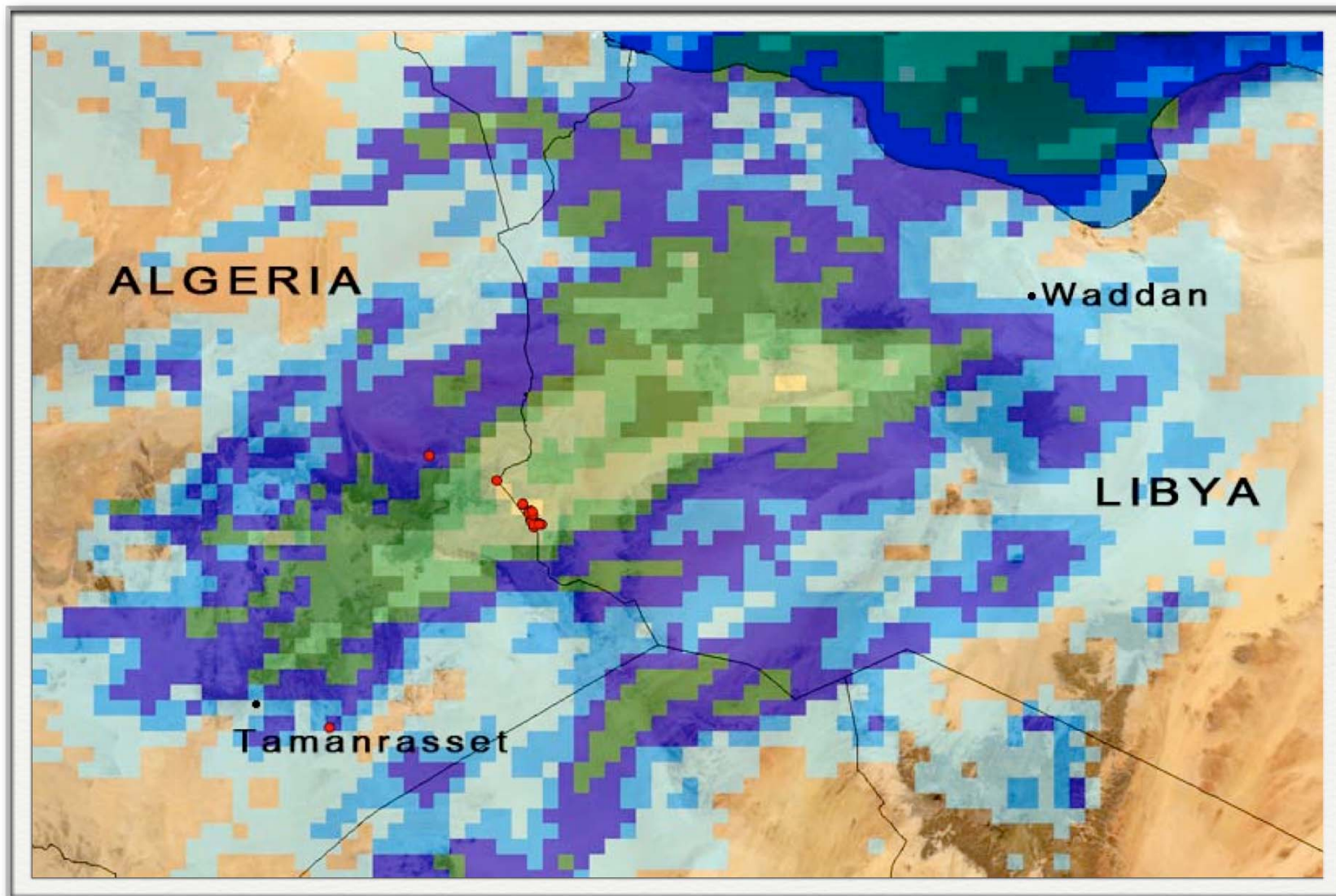
Desert Locust Information Service, Rome  
[www.fao.org/ag/locusts](http://www.fao.org/ag/locusts)

1 June 2012 update



### **Desert Locust outbreak in SW Libya: overview**

In early January 2012, Desert Locust infestations were reported in SW Libya near Ghat. The infestations originated from local breeding that occurred after unusually good rains in early October 2011. As locust hoppers and adults concentrated in early February, the number and density of infestations increased and an outbreak developed, and adult moved into SE Algeria. Egg-laying occurred in March, followed by hatching and hopper band formation in April, and swarm formation in mid-May. The Libyan national locust program's capacity to carry out routine monitoring and respond to outbreaks was badly weakened by events in 2011. Access to potentially infested areas along both sides of the border by national survey and control teams is severely restricted due to insecurity. Unless conditions remain favourable, swarms that form in the outbreak area during May are expected to invade Mali and Niger in June.

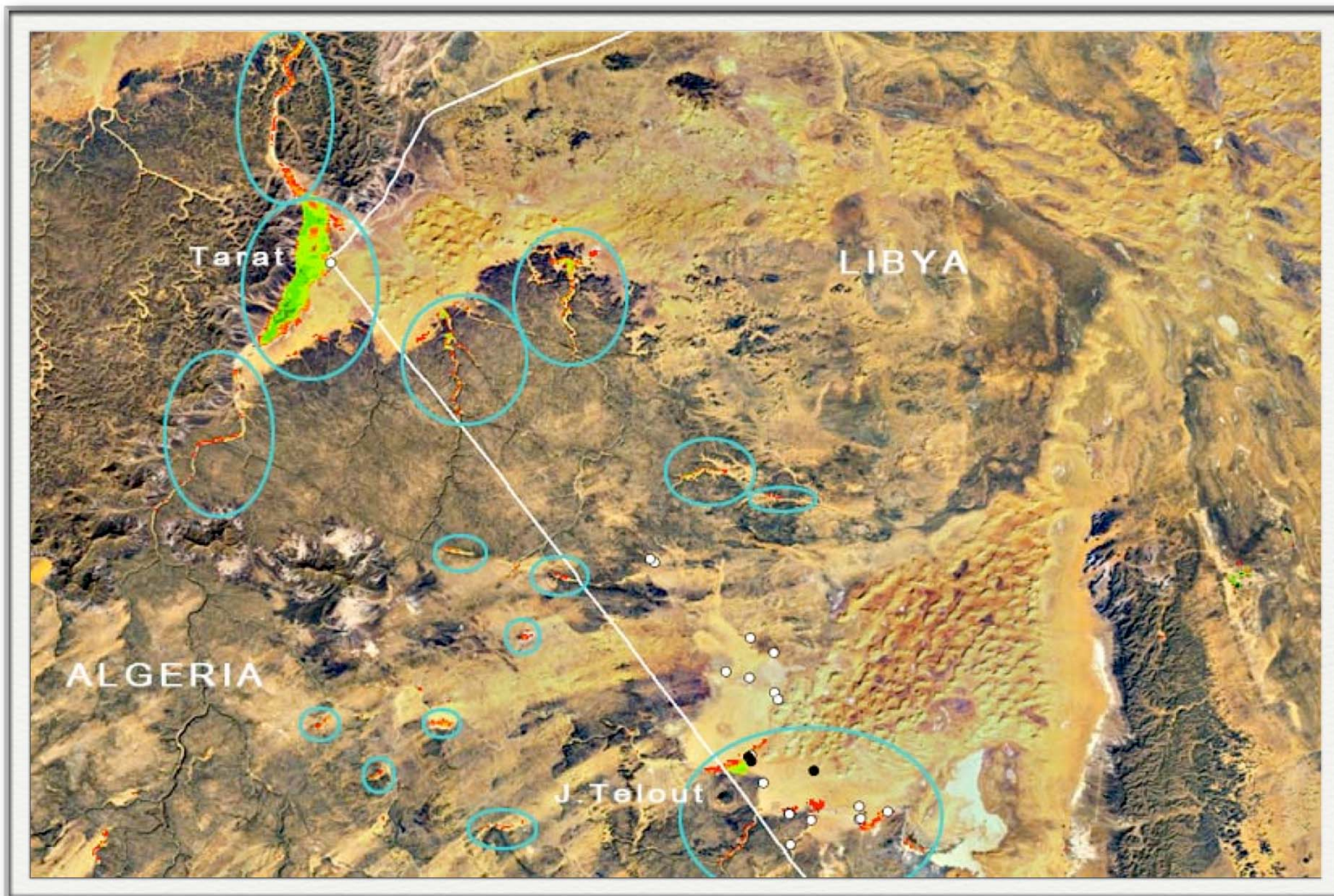


**October 2011. Unusually good widespread rains that eventually led to a Desert Locust outbreak**

During the first decade of October, light rains fell in SW Libya on the 1st, 5th and 6th, and again on the 9th while moderate rains fell on the 7th and 8th. Prior to October, light rain had fallen at times in the same area in March, April, May, June and September. However, the October rains were much heavier and more widespread, extending from Tamanrasset in southern Algeria to Waddan in central Libya. As national rainfall stations stopped reporting in Libya after 23 March 2011, data from nearby stations in Algeria (In Amenas, Illizi, Djanet) and satellite-base rainfall estimates confirmed the extent of this important rainfall.

*Rainfall estimate map (1-10 Oct 2011): blues (1-30mm), greens (31-100mm), yellow (101-150mm)*

*Desert Locust infestations (1 Jan - 10 Feb 2012): red dots*



**November - December 2011. Green vegetation appears after the October rains**

In response to the good rains during the first decade of October, green vegetation began to appear in early November mainly in Wadi Tarat in SE Algeria on the border of Libya and, to a lesser extent, on the northeastern side of Jebel Telout. During the next month, vegetation increased in these areas as well as a number of other wadis and low-lying areas south and southeast of Tarat in SE Algeria and SW Libya. Green vegetation peaked in late December and thereafter started to slowly dry out as daytime temperatures remained cool.

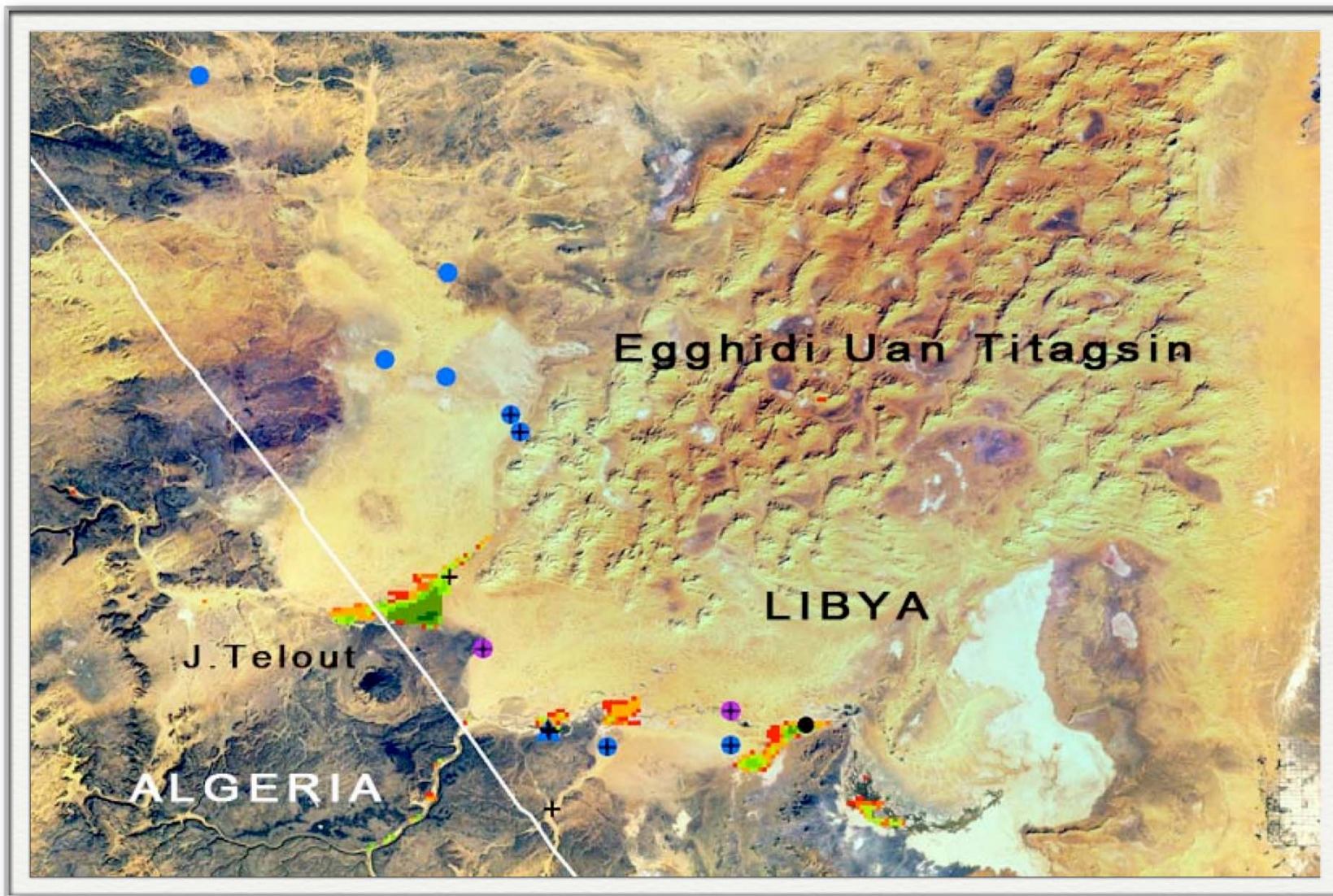
*Onset of green vegetation (11-20 Dec 2011 map): green (21 Oct - 10 Nov), orange (11-30 Nov), red (1-10 Dec)  
Desert Locust infestations: black (Jan 2012), white (Feb 2012)*



**7 January 2012. Desert Locust infestations reported near Ghat**

During the first week of January 2012, small spots of second to fourth instar gregarious hoppers were seen in three wadis (Tyhrhir, Titghsin, Telikwasin) within a 9 x 2 km area NW of Ghat and to the east of Jebel Telout. The size of the initial infestations was very small, ranging from 100 to 300 m<sup>2</sup>. The hoppers varied in density from 3-5 hoppers/m<sup>2</sup> up to 200-400 hoppers/bush. As vegetation continued to dry out, the hoppers were concentrating in areas that remained green, causing them to form small groups and become gregarious.

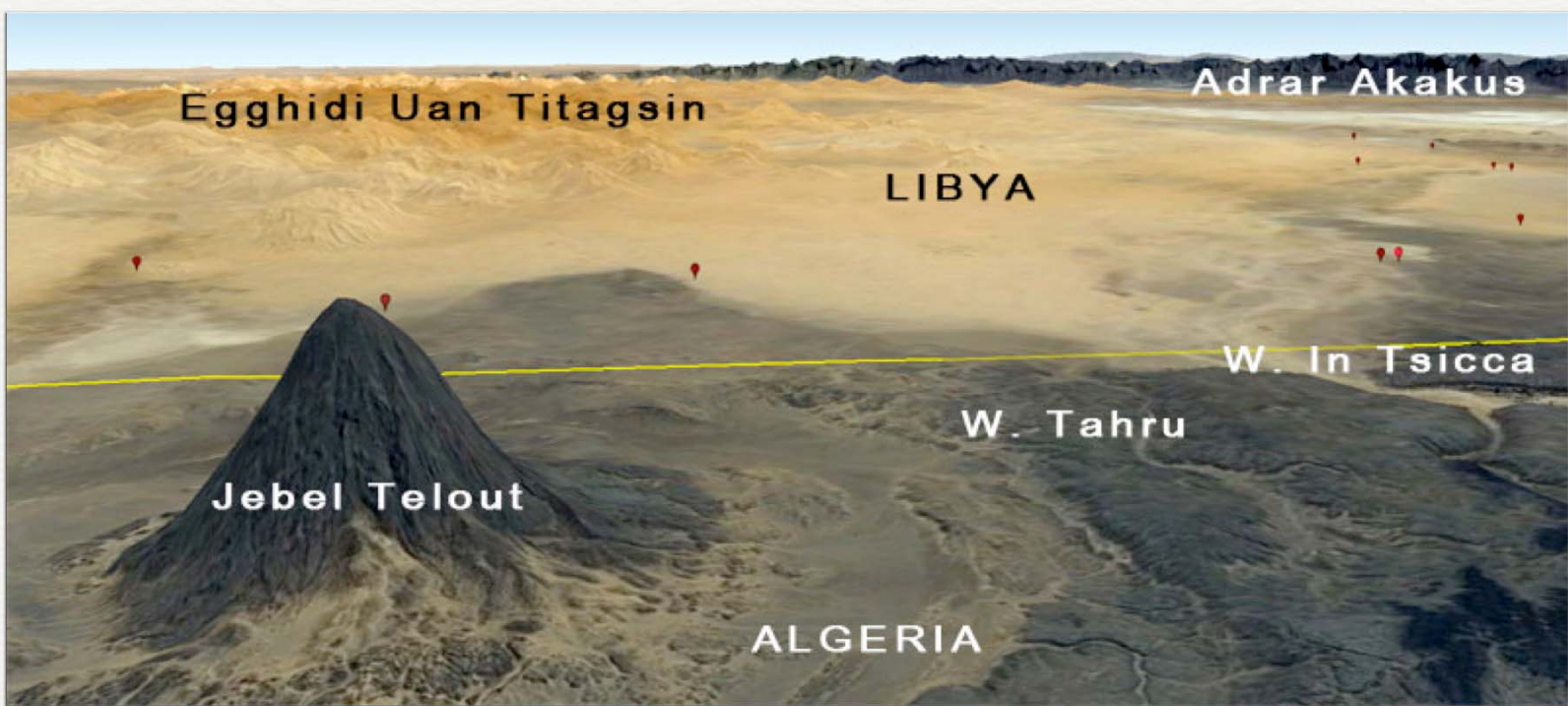
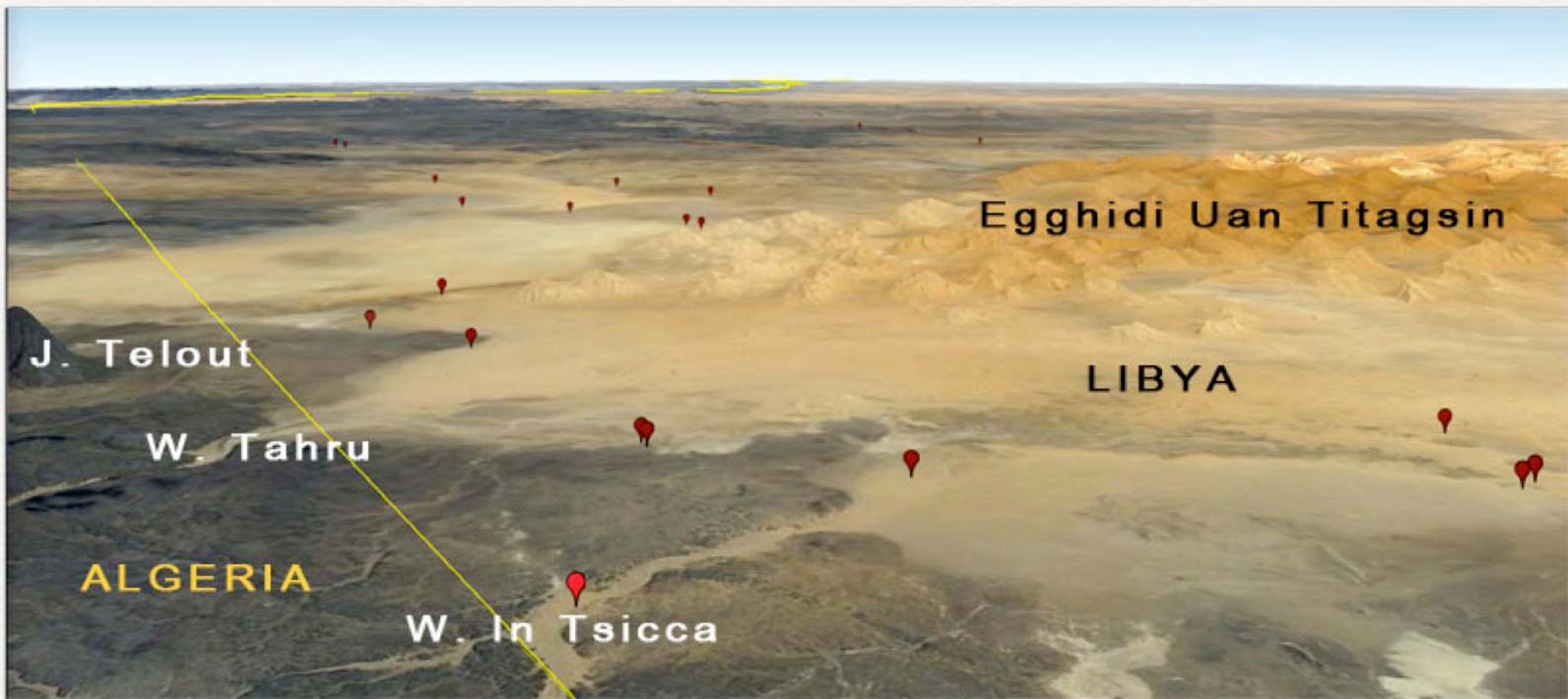
*Desert Locust infestations (1-7 Jan 2012): red dots*



**1 February 2012. Locust situation deteriorates as more infestations are found**

The situation deteriorated in early February as more infestations containing a greater number of locusts were found in the same and adjacent areas where hoppers were seen in January. Most of the hoppers had fledged by the first week of February and mainly immature and maturing gregarious adults were present at low to medium densities, up to 4,500 adults/ha. Infested areas ranged in size from 10 m<sup>2</sup> to 1,000 ha. Fourth and fifth instar hoppers were seen at one location at densities of 3 hoppers/m<sup>2</sup>. On 4 February, a small 1 km<sup>2</sup> maturing medium-density swarmlet was seen flying low from east to west. One small swarmlet was reported on the 6th crossing the Algerian border to Ghat. Adults were seen copulating from the 6th onwards. Ground control operations started on the 1st and treated 1,515 ha to the 13th.

*Greenness map (11-20 Dec 2011) and Desert Locust infestations (1-10 Feb 2012): hopper groups (purple), bands (black), adult groups and laying (blue), swarm (blue triangle), control (black cross)*





The main road from Sardalas to Ghat in SW Libya



Jebel Idinin north of Ghat in SW Libya

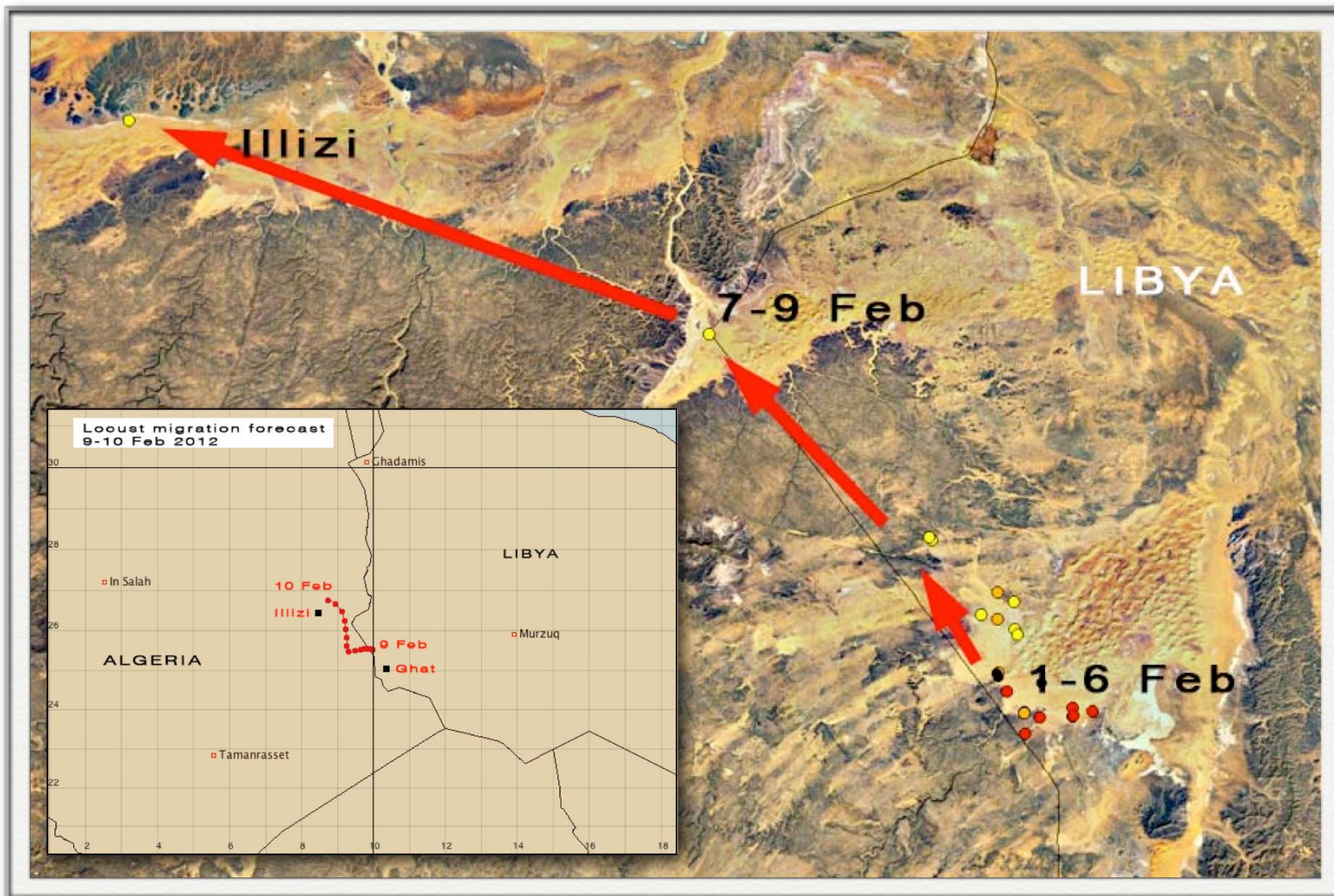


Eghidi Uan Titagsin dunes in SW Libya



Jebel Telout on the Libyan border in SE Algeria

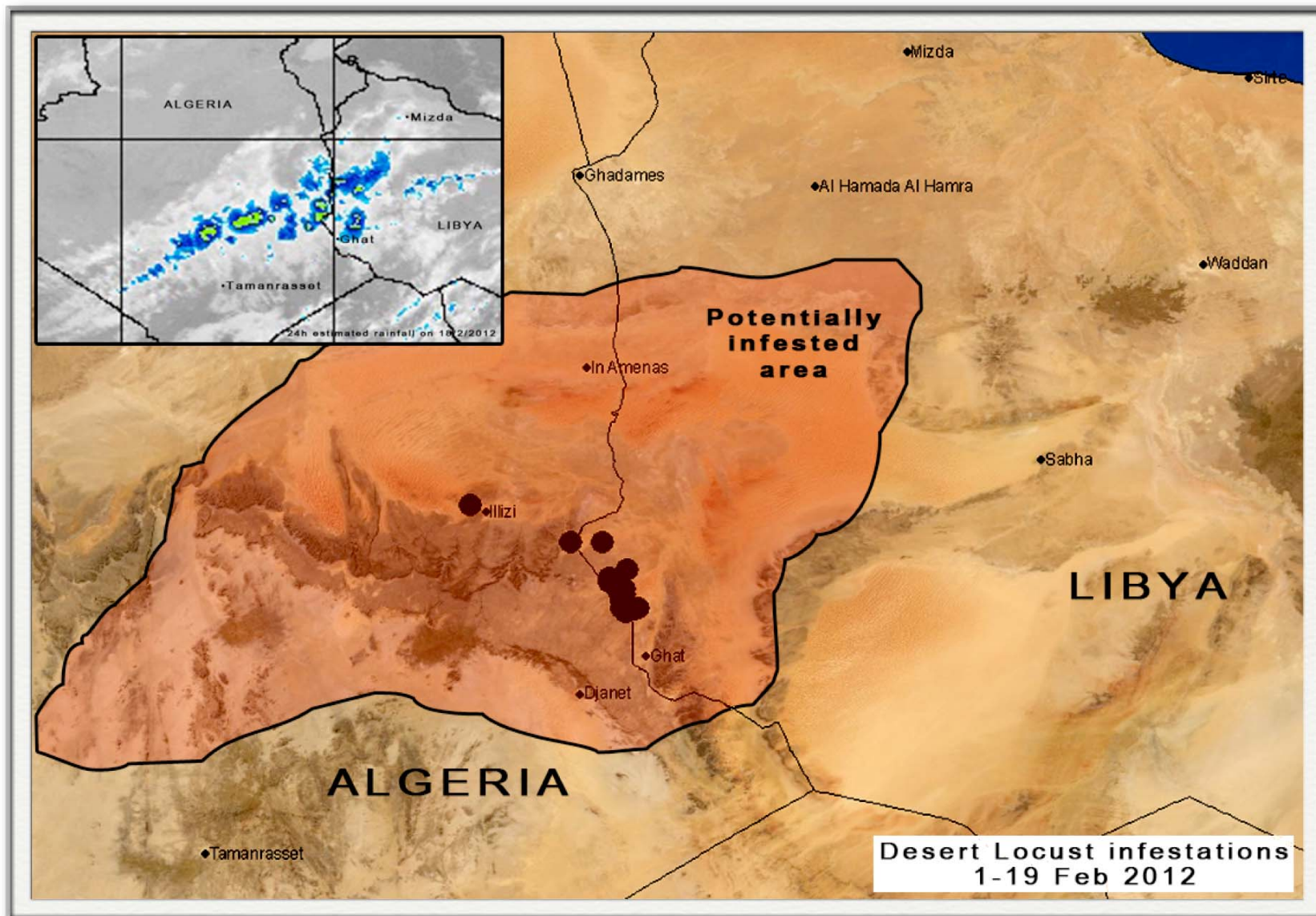




**7 February 2012. Desert Locust adults move into SE Algeria**

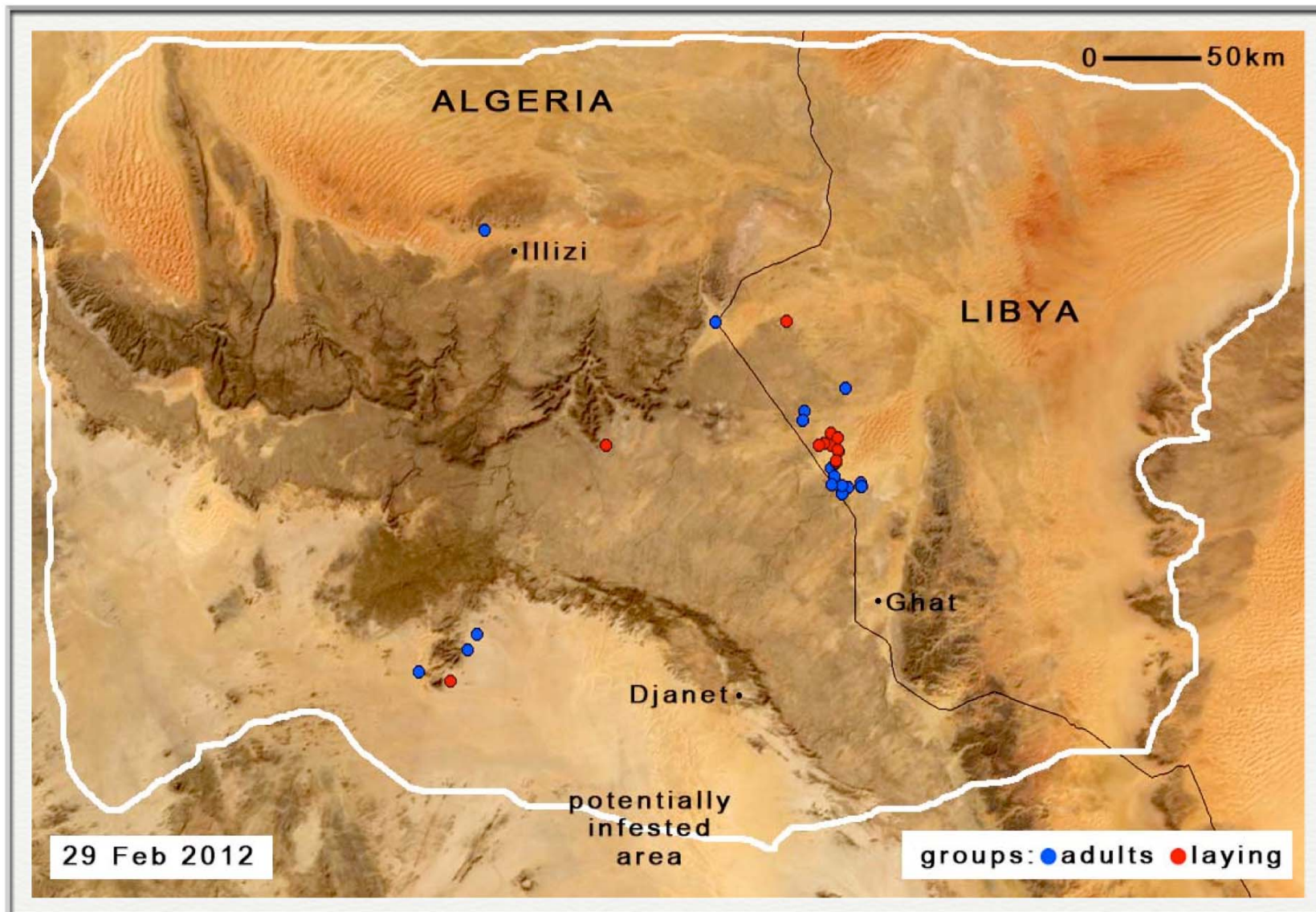
Algeria reported an increase of immature solitarious adults from the 7th onwards on the border at Wadi Tarat as well as west of Illizi, approximately 200 km northwest of the Libyan infestations. Ground teams treated 190 ha on 7-9 February.

*Desert Locust infestations: red (1-3 February 2012), orange (4-6 Feb), yellow (7-9 Feb)*



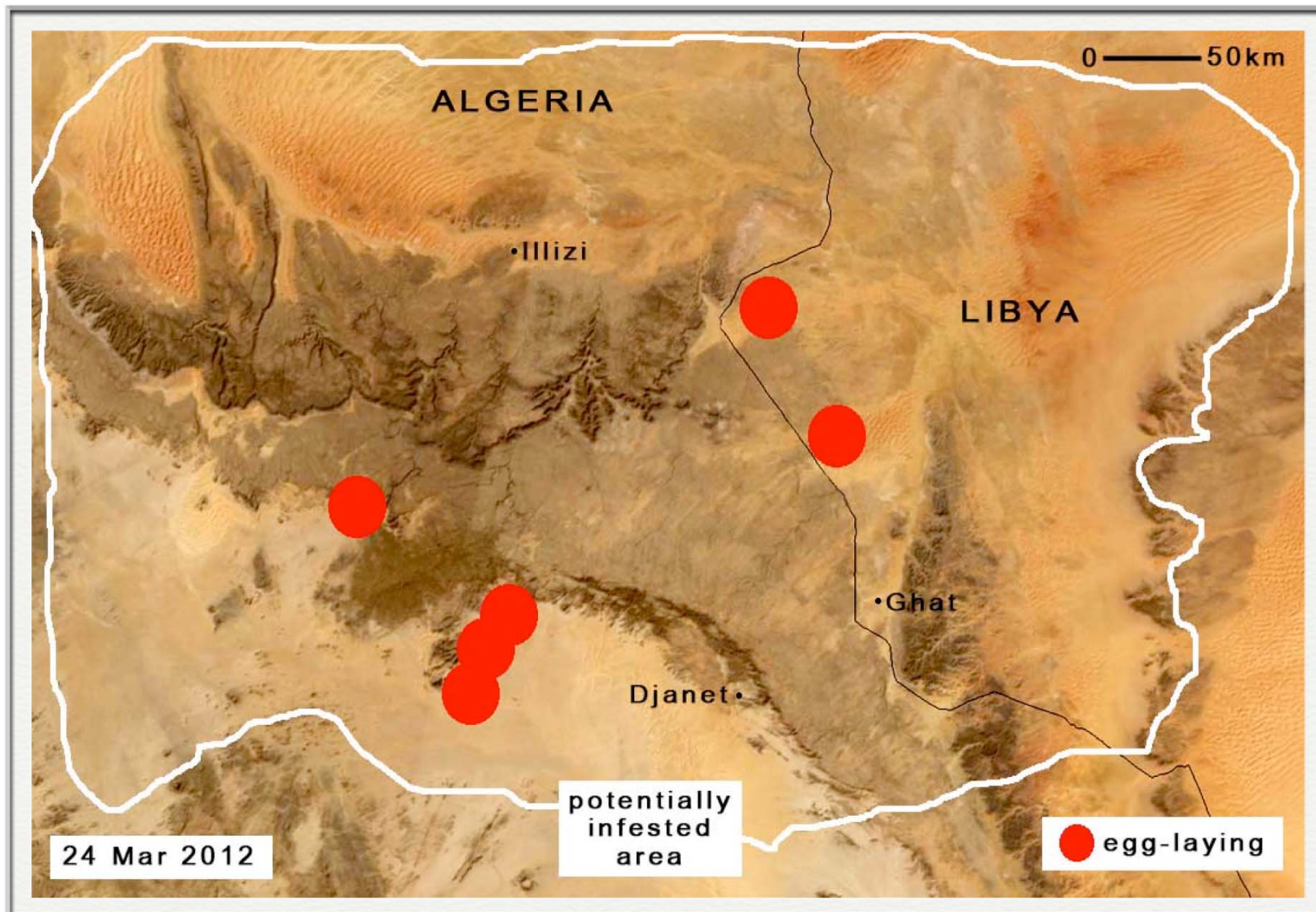
**18-19 February 2012. Good rains fall in outbreak area**

Unusually good rains fell over a large portion of SE Algeria and SW Libya, including currently infested areas. These rains will allow ecological conditions to remain favorable for breeding, which will cause locust numbers to increase further in the coming months. Hatching is expected to commence shortly that could lead to the formation of small hopper groups and bands. If more rains fall during the spring as temperatures increase, the situation could deteriorate further. Consequently, there is a high risk that locust infestations may be currently present within a much larger area than reported.



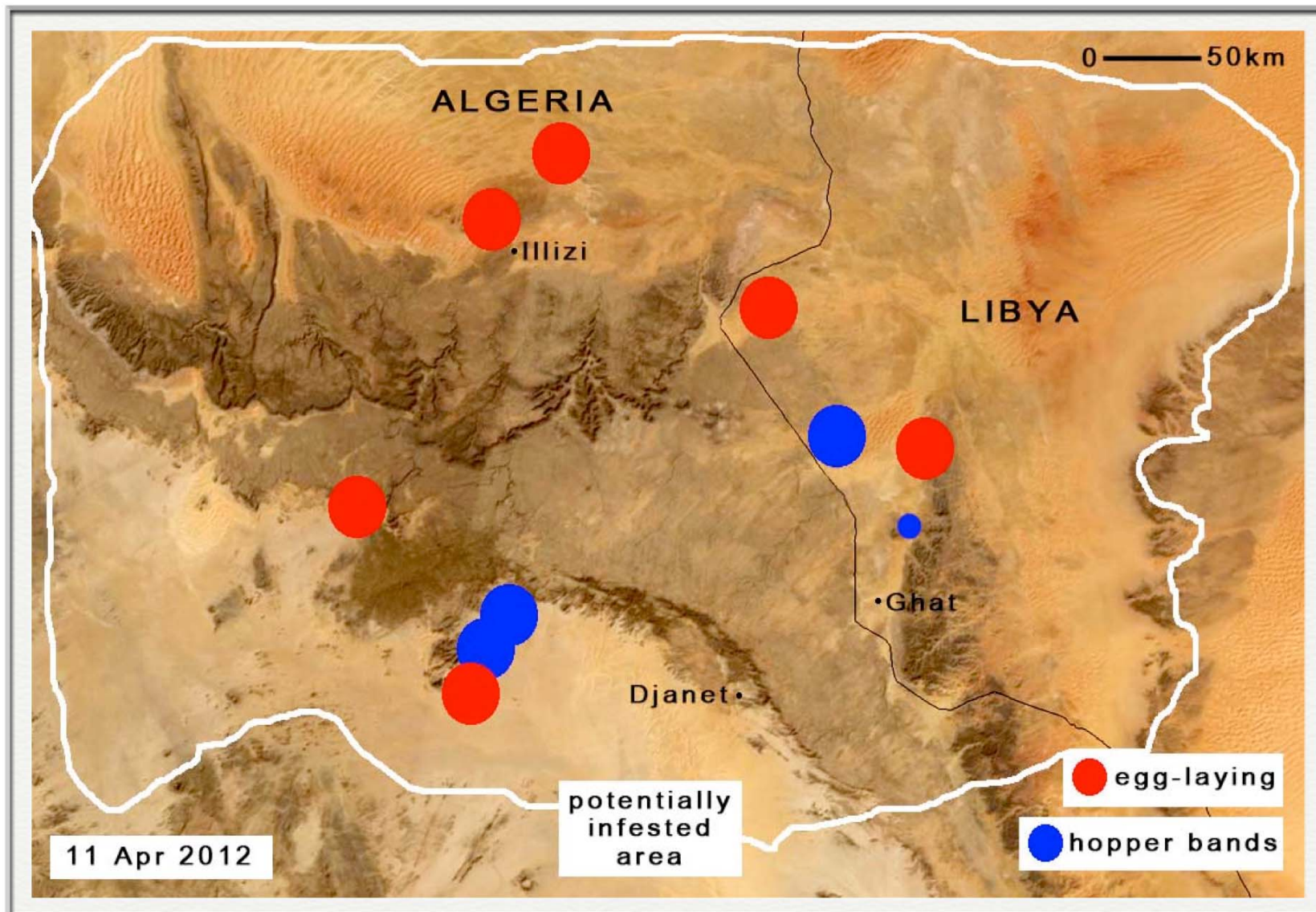
**29 February 2012. Adults copulating and ready to lay eggs**

During the last week of February, an increasing number of adults were seen copulating and ready to lay eggs in areas of recent rainfall. Most of the adults were gregarious and had formed medium to high density groups. Although ground teams treated 835 ha from 20 to 29 February, it is likely that a second generation of breeding will occur with hatching during the second half of March and early April, followed by the formation of hopper bands. The current situation is potentially threatening. As hatching occurs, there is a high risk that locust numbers will increase dramatically near Ghat and probably in adjacent areas of SE Algeria and W Libya where rains at mid-month and the locust situation is not well known. Current insecurity along both sides of the border is hampering field operations.



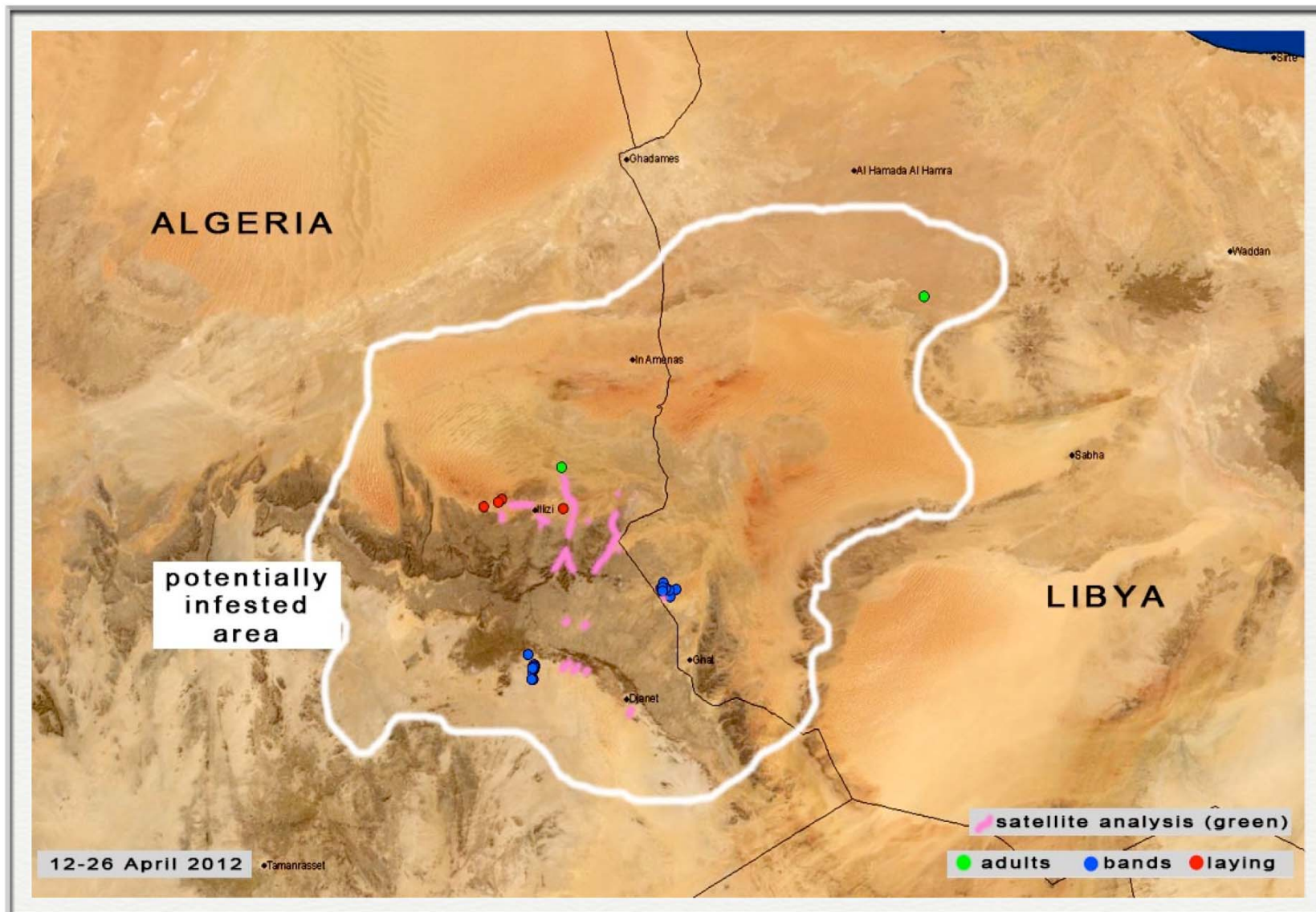
**March 2012. Adults lay eggs in SW Libya and SE Algeria**

Throughout March, groups of gregarious adults laid eggs along both sides of the border in southwest Libya and southeast Algeria, primarily northwest of Ghat, Libya and on the southern side of the Tassili-Ajjer Mountains west of Djanet. Laying probably occurred in other areas of SE Algeria (Djanet to Illizi, Illizi to In Amenas) and SW Libya (north of Ghat, west of Sabha, southern Al Hamra Al Hamada) but most of these areas were inaccessible to national survey teams due to remoteness and insecurity. Consequently, only a small portion of the total infestations are known.



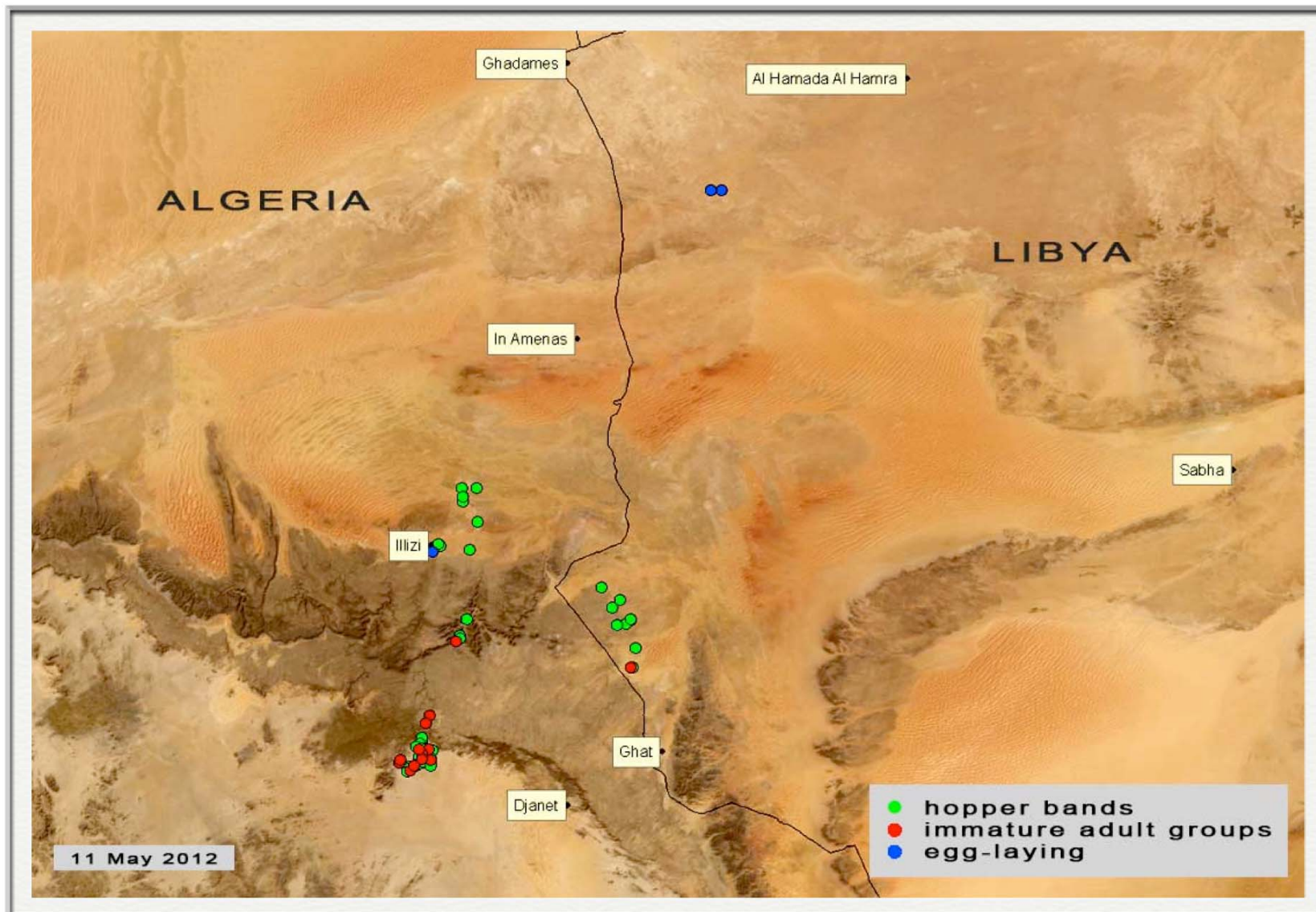
### 1 April 2012. Second generation hatching starts in Libya and Algeria

Eggs that were laid from the last week of February onwards started to hatch on about 30 March. Hatching was first detected in Algeria in Wadi Tarat on 1 April where dense first instar hopper bands at densities up to 5,000 hoppers/m<sup>2</sup> were reported. In Libya, survey teams saw first and second instar hopper bands during the first week of April, up to 20 bands in one location. Most of the hoppers were found in areas of previously reported laying but bands were also seen in areas that had not been visited before in the Ghat Valley on the eastern side of Jebel Idinin, confirming that laying was more widespread than indicated by survey results.



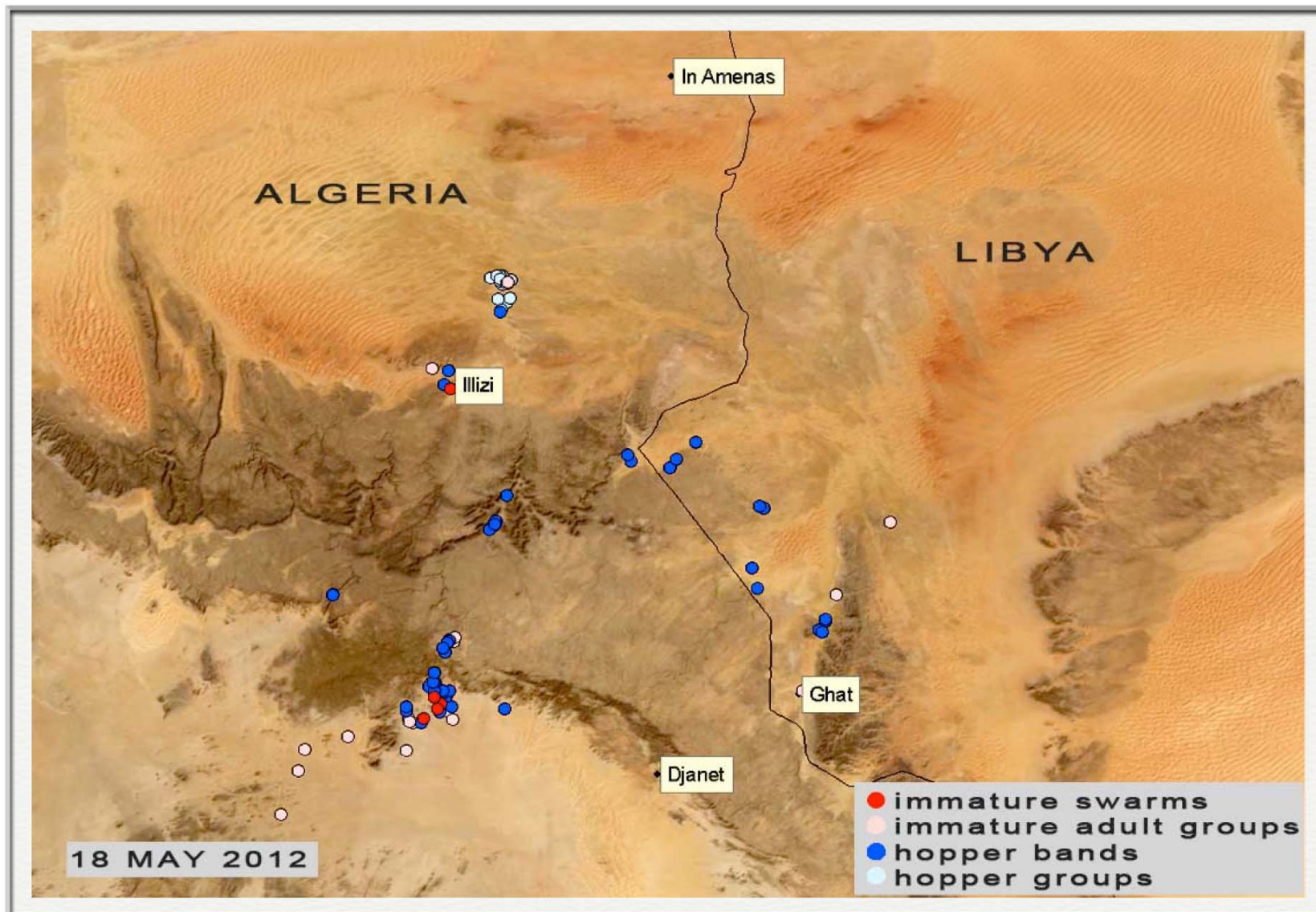
**26 April 2012. Hopper bands form in Libya and Algeria**

Hatching and hopper band formation continued during April in Libya and Algeria. More hatching is expected near Illizi, Algeria during May. By the last week of April, hoppers had reached fifth instar in Libya and fourth instar in Algeria, and high densities of *transiens* and gregarious hoppers were forming small bands. Control teams treated nearly 4,000 ha in each country during the month. As many areas are remote and insecure, analysis of high resolution satellite imagery suggests that some 100,000 ha may be green in SE Algeria yet so far teams can only access about 15% of this area. No locusts were seen in NW Libya, suggesting that the outbreak area remains south of the Al Hamada Al Hamra. Fledging will occur in May and immature adults will form swarms in both countries.



**11 May 2012. Hopper bands continue to form in Libya and Algeria; swarm formation imminent**

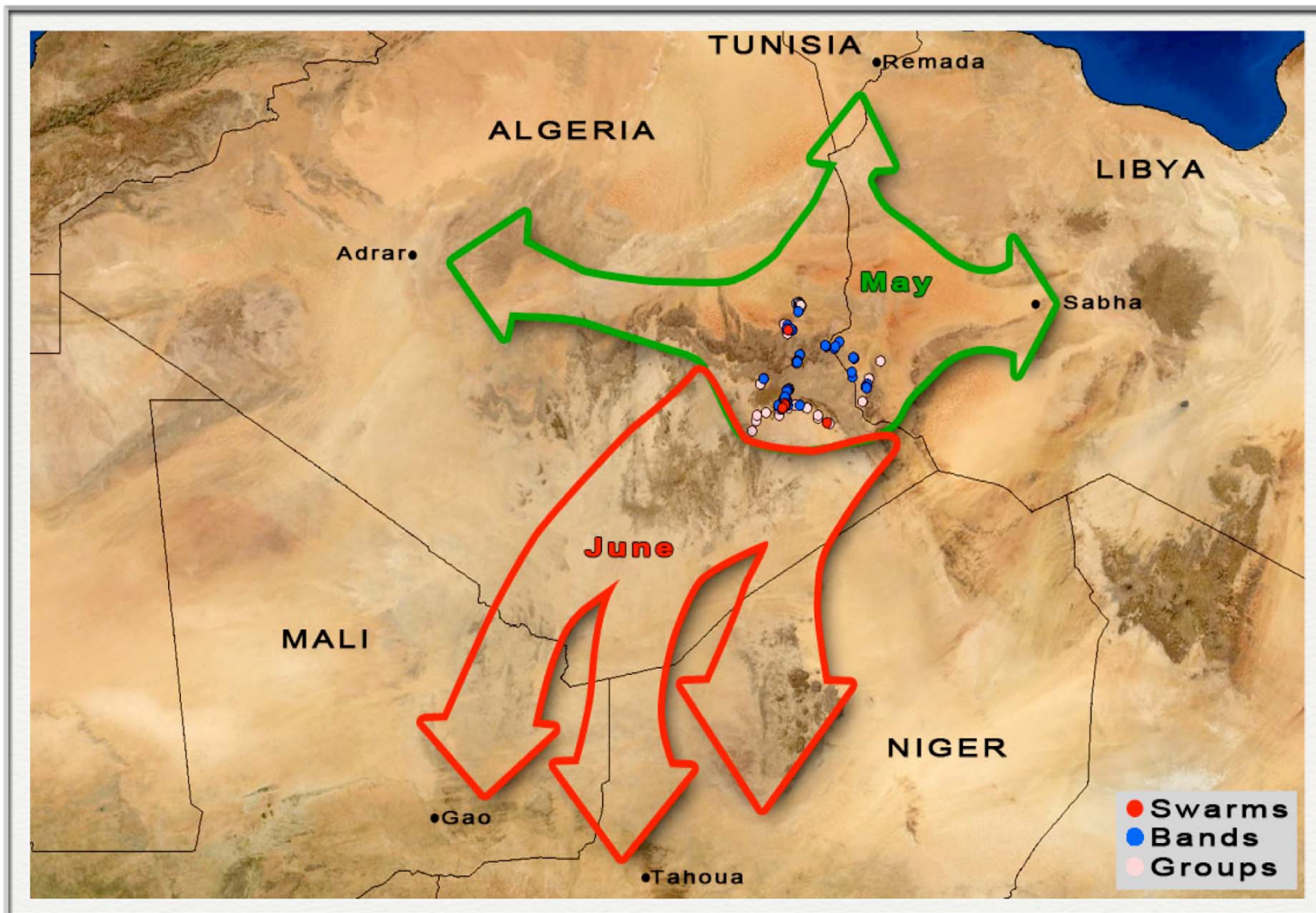
Second generation egg-laying, hatching and band formation continued in the northern part of the outbreak area near Illizi, Algeria and in northwest Libya near Ghadames and the Al Hamada Al Hamra plateau in early May. Most of the infestations consisted of late instar hopper bands north of Ghat and west of Djanet. By the second week of the month, hoppers began to fledge into winged immature adults and form groups at densities up to 800 locusts/m<sup>2</sup>.



**18 May 2012. A few very small swarms form in SE Algeria**

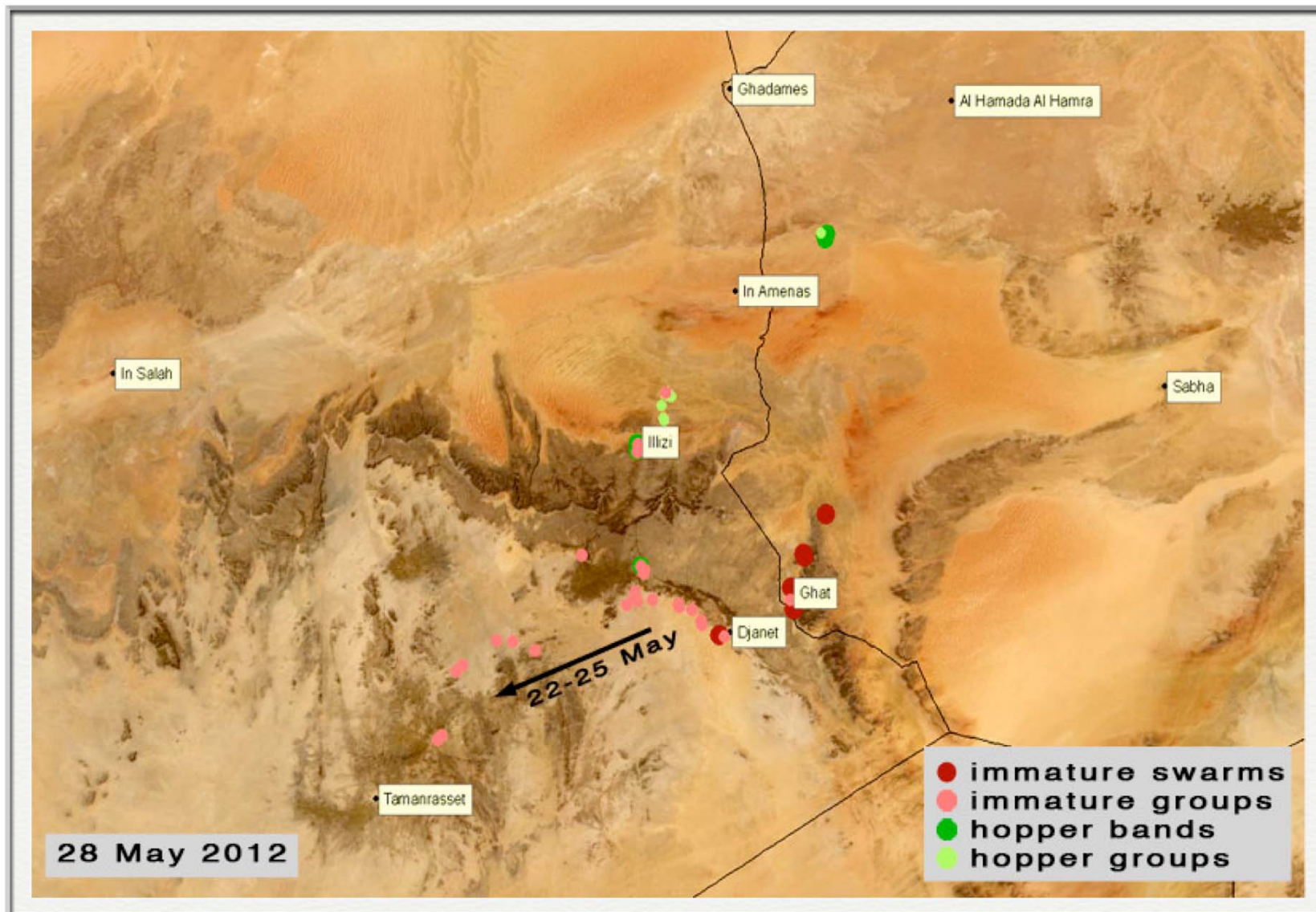
During the second week of May, a few very small immature swarms started to form on the southern and northern sides of the Tassili-Ajjer Mountains in SE Algeria. The swarms, varying in size from 60 to 200 ha, were seen at four places in the Bordj El Haoues area west of Djanet and at one location near Illizi. Some of the swarms were seen flying in a general northeast to southwest direction. Hopper groups and bands as well as groups of immature adults are also present in both areas and in a few wadis in the Tassili. In adjacent areas of SW Libya, hopper bands and groups of immature adults are present north of Ghat. No further egg laying or hatching was reported in either country.





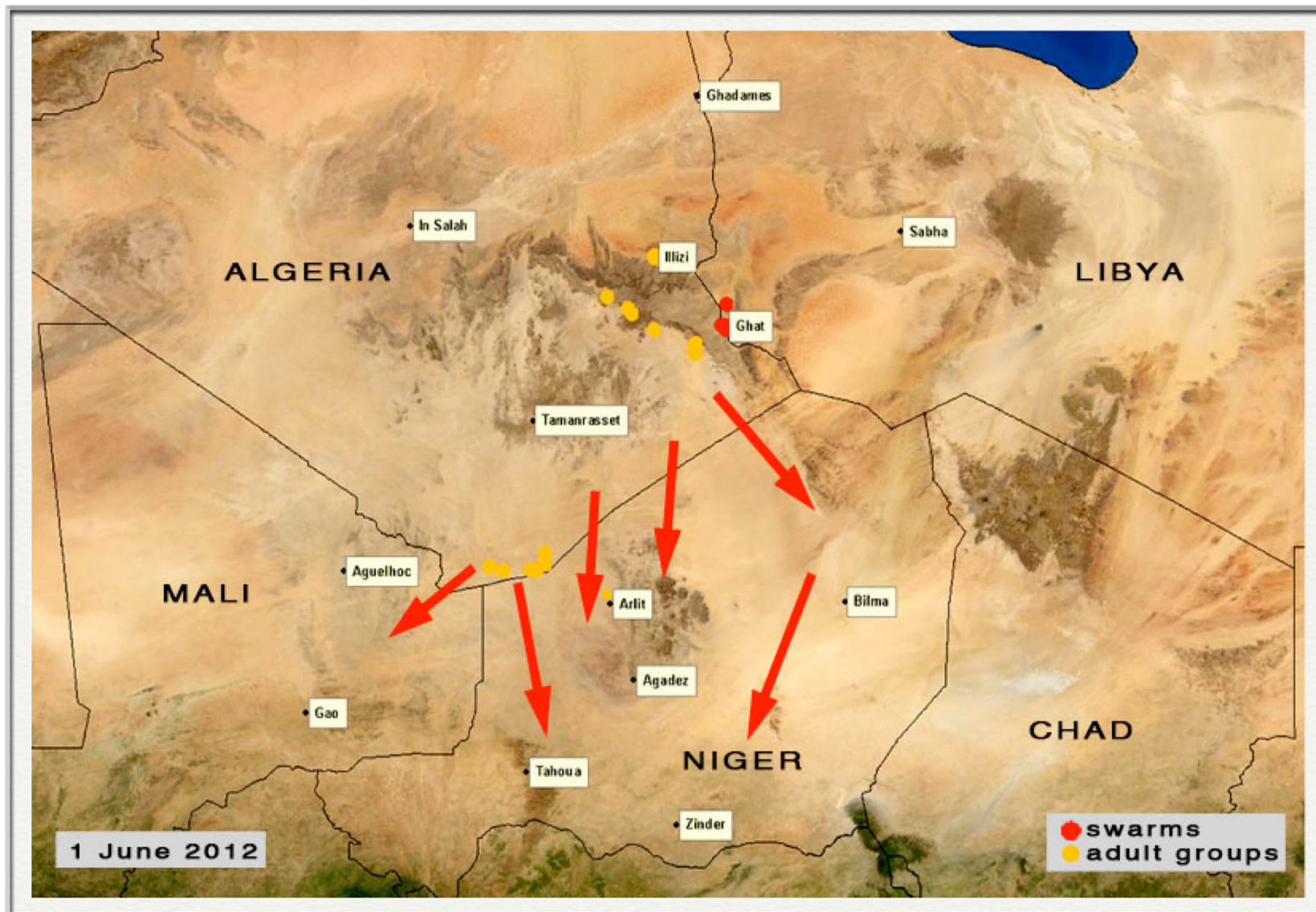
**21 May 2012. WARNING! Swarm threat to the Sahel**

During May, short distance movements are expected within the outbreak area that could extend to central Algeria (In Salah and Adrar), southern Tunisia, and western Libya (Ghadames, Sabha). As June progresses, the risk shifts increasingly to the northern Sahel where small swarms are likely to arrive in northern Mali (Tessalit to Gao and Menaka) and Niger (Tamesna, Air Mountains, Tahoua, Tanout). Both countries were warned to be on high alert, especially if rains fall before the summer. Some places already received light rain in mid-May. The situation is potentially very dangerous because a swarm invasion is likely to coincide with summer rains and Sahel planting.



**28 May 2012. Adults move south towards Tamanrasset, Algeria**

Small but dense immature Desert Locust swarms continued to form in SW Libya while only groups of immature adults were reported in adjacent areas of SE Algeria. A few adult groups moved 250 km towards the southwest from the southern side of the Tassili Mountains towards Tamanrasset. A few hopper bands and some groups developed in the northern part of the outbreak area near Illizi, Algeria and on the southern edge of the Al Hamada Al Hamra plateau in Libya. No hoppers were reported after 26 May. Ground control operations continued in both countries, albeit at a slightly reduced level, treating 6,635 ha in Algeria (18-27 May) and 2,405 ha in Libya (18-23 May).



**1 June 2012. ALERT! Locusts start to arrive in the northern Sahel**

On the evening of 30 May, a group of Desert Locust adults arrived in cultivations near Arlit in northern Niger. In southern Algeria, immature adult groups arrived in the extreme south near In Guezzam on about 29 May. More immature groups and a few small swarms will arrive in the coming weeks in northern Niger (Tamesna Plains, Air Mountains, Tenere, Djado Plateau), probably in NE Mali (Tamesna Plains, Adrar des Iforas), and maybe NW Chad. Locusts will concentrate in the few green areas and in crops, while some will continue south to crops in central and southern Niger. National teams are being mobilized in Niger but insecurity will hamper operations.

## Libya Outbreak FAQs

- **What caused the outbreak ?**  
Unusually good and widespread rains fell in early October 2011 and caused ecological conditions (moist soil and green vegetation) to become favourable for locust breeding and survival.
- **What happened after the rains ?**  
Scattered adults were probably already present in the area or may have arrived into the area on winds associated with the rains. These adults laid eggs during the second half of October and throughout November that hatched from about mid-November until mid-December. Low temperatures during the winter delayed hatching and hopper development.
- **Why did the locusts increase in density ?**  
Locust numbers rose as a result of one generation of breeding. As vegetation started to dry out at the end of 2011 and in early 2012, the locusts concentrated in those small areas that remained green.
- **Did preventive control fail ?**  
No, but regular ground surveys by national teams in Algeria and Libya were disrupted by political events in Libya during 2011. Algerian teams were unable to check areas that received rainfall in October because they were close to the Libyan border. Most of the survey and control equipment in Libya have been lost.
- **What is unusual about this outbreak ?**  
Locust outbreaks do not occur on a seasonal or calendar basis; instead, they occur sporadically in response to infrequent and irregular rainfall in the desert. This was the first time an outbreak occurred in the winter in Libya.
- **What actions are being taken at this moment ?**  
National survey and control teams were immediately dispatched in SW Libya and SE Algeria and are currently undertaking field operations. Important infestations are being treated to reduce locust numbers and any migration to nearby areas. Efforts are underway to restrengthen the national capacity in Libya.
- **Will an upsurge or plague develop ?**  
No, it is highly unlikely because current locust numbers are relatively low and infestations are concentrated in a relatively small area. However, if good rains fall during the spring and if there are a significant number of infestations that are presently undetected in Algeria or Libya, then another generation of breeding could occur that, if uncontrolled, could give rise to large numbers of locusts and lead to the initial stages of an upsurge.

# Daily control operations

■ Algeria ■ Libya

