Report of Monitoring, Early Warning and Assessment of Desert Locust

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Desert Locust Monitoring and Loss Assessment in Mauritania, Chad and Egypt (September 2026)

Integrated with multi-source Earth Observation data, e.g. meteorological data, field data, and remote sensing data (such as MODIS in the US, etc), and self-developed models and algorithms for Desert Locust monitoring and forecasting, the research team constructed the ‘Vegetation pests and diseases monitoring and forecasting system’, which could regularly release thematical maps and reports on Desert Locust.

The remote sensing monitoring showed that, in September 2026, desert locusts mainly affected southern Mauritania, the central interior of Chad, and the upper Nile Valley corridor and adjacent areas in Egypt, affecting 21.7, 16.4, and 16.2 thousand hectares of vegetation, respectively. This month, the area of affected vegetation increased in Mauritania compared with August, while damage in Chad and Egypt was localized in the central interior and southern river valley, respectively. The spatial pattern was characterized by "expansion of affected grassland in Mauritania, localized damage in the agropastoral zone of Chad, and concentration in river-valley and oasis patches in Egypt." In Mauritania, the increase in affected area occurred mainly in grassland. Compared with the heavier localized damage in southern river valleys in August, affected grassland patches in the south-central region were more prominent this month. This may be associated with spatial differences in rainfall and soil moisture, as well as the redistribution of solitarious adults as vegetation greened. When sandy soils retain suitable moisture after rainfall, they may provide conditions for oviposition and hopper development; residual individuals from earlier periods may constitute a local source population. However, given the uneven distribution of rainfall, continued population growth and the formation of groups still require field verification. In Chad, affected areas were mainly

in the central interior and adjoining eastern areas, with most affected vegetation in grassland and cropland. Green pasture and crop patches may provide feeding and resting sites for solitarious adults. Localized rainfall can raise the moisture content of sandy soils and stimulate herbaceous growth, creating a short window suitable for breeding. Despite uneven rainfall, localized small-scale breeding may still increase locust numbers. Field surveys are needed to determine whether source populations comprise residual local individuals or sporadic immigrants from neighboring areas. In Egypt, affected areas were concentrated in southern oases and the upper Nile Valley, involving cropland, grassland, and shrubland. With little natural rainfall, irrigation and water supplied by the river valley may maintain green vegetation patches, allowing solitarious adults to remain and feed in oases and along field margins. Feeding conditions do not necessarily imply suitable breeding conditions: oviposition and hopper survival also depend on moisture in nearby sandy soils and the size of source populations. Surveys of locust life stages are needed to assess localized breeding. Over the next two months, if residual soil moisture and pasture growth persist in Mauritania, localized breeding may continue and groups may form in some suitable areas; the densities of hoppers and new-generation adults should be monitored. In Chad, localized small-scale summer breeding may increase locust numbers. Surveys should be extended northward as appropriate, and control measures undertaken if rising densities or signs of aggregation warrant them. In Egypt, irrigated vegetation in the southern river valley and oases may continue to support feeding by scattered adults. If effective rainfall occurs along the eastern coastal belt, the risk of localized aggregation may increase; source populations, oviposition, and hopper development should be verified. During this period, rainfed sorghum and millet in southern Mauritania are mostly at the heading-to-grain-filling stages; sorghum, millet, and other cereals in central Chad are at stages ranging from grain filling to maturity, with harvest beginning in some early-sown fields; irrigated maize in southern Egypt is at the vegetative-to-flowering and grain-setting stages, while sugarcane is in the stalk-growth stage. Attention should be paid to the potential impacts of localized desert locust activity on food crops and livestock production. The detailed results are as follows:

■ 1. Desert Locust Monitoring and Loss Assessment in Mauritania

In September 2026, the affected area in Mauritania increased slightly from the previous month, mainly in grassland. Southern grasslands and river valleys remained the principal affected areas, while localized affected areas in the south-central region increased from August. Localized rainfall may maintain moisture in sandy soils, and greening pasture can provide conditions for solitarious adults to feed, mature, and oviposit, as well as favoring hopper survival. Residual individuals from earlier periods may sustain local source populations. Because rainfall and green vegetation are discontinuously distributed, the increase in affected area alone does not establish that aggregation has occurred. Nevertheless, groups may form in some suitable areas. Surveys should verify egg, hopper, and adult densities and monitor the risk of subsequent localized breeding. Monitoring results showed that in September 2026, desert locusts affected 21.7 thousand hectares of vegetation in Mauritania, including 0.2 thousand hectares of cropland, 20.5 thousand hectares of grassland, and 1.0 thousand hectares of shrubland (Figure 1), accounting for 0.02%, 0.18%,

and 0.20% of the country's total cropland, grassland, and shrubland areas, respectively. Assaba recorded the most extensive damage, with 9.9 thousand hectares of affected vegetation, followed by Brakna with 6.2 thousand hectares. Gorgol, Tagant, and Trarza were also affected, with 2.9, 1.9, and 0.8 thousand hectares, respectively.

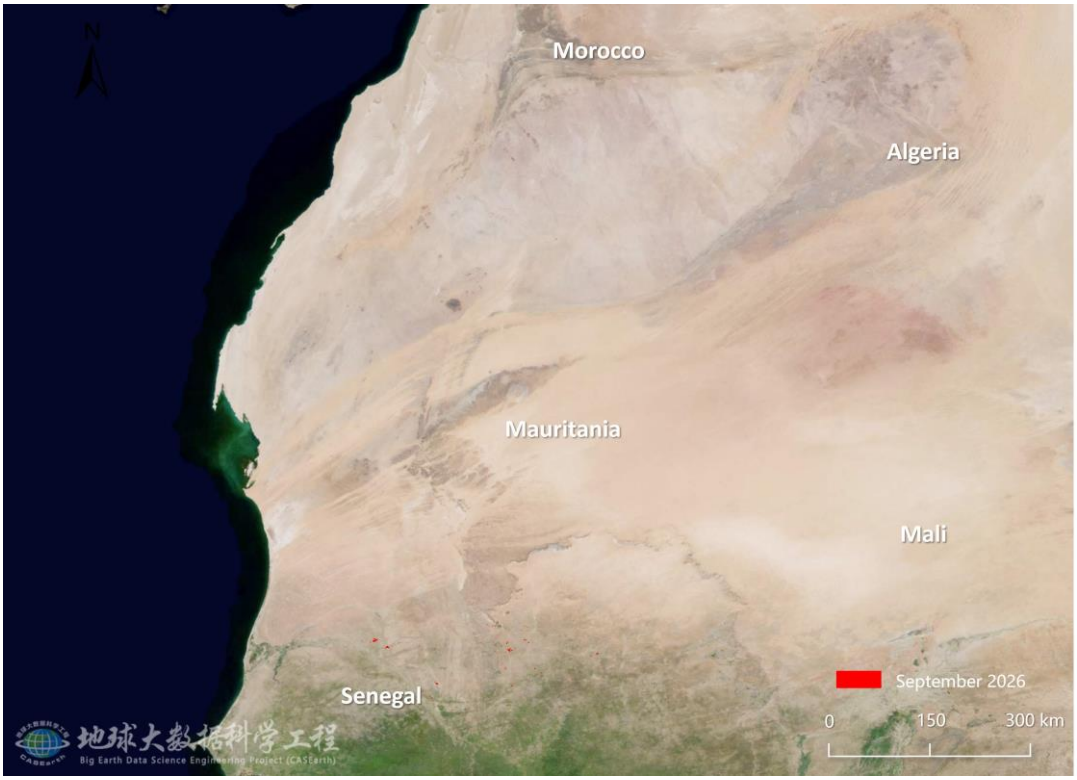


Fig. 1 Monitoring of desert locust damage in Mauritania (September 2026)

■ 2. Desert Locust Monitoring and Loss Assessment in Chad

In September 2026, both grassland and cropland were affected in Chad. Following earlier drought, variable recent rainfall and differences in crop phenology, pasture greening may coincide with the ripening and harvest of cereal crops. Feeding sites of solitarious adults may also change as food availability varies. Short-term greening may provide food; if soil moisture persists, localized small-scale summer breeding could increase locust numbers. Because drought can also reduce vegetation greenness, changes in vegetation at ten-day intervals, soil moisture, and surveys of locust life stages should be considered together to verify the attribution of affected areas and assess subsequent breeding risk. Monitoring results showed that in September 2026, desert locusts affected 16.4 thousand hectares of vegetation in Chad, including 7.1 thousand hectares of cropland, 9.2 thousand hectares of grassland, and 0.1 thousand hectares of shrubland (Figure 2), accounting for 0.14%, 0.03%, and 0.001% of the country's total cropland, grassland, and shrubland areas, respectively. Batha recorded the most extensive damage, with 11.3 thousand hectares of affected vegetation, followed by Wadi Fira with 3.7 thousand hectares. Sila and Ouaddaï were also affected, with 0.8 and 0.6 thousand hectares, respectively.

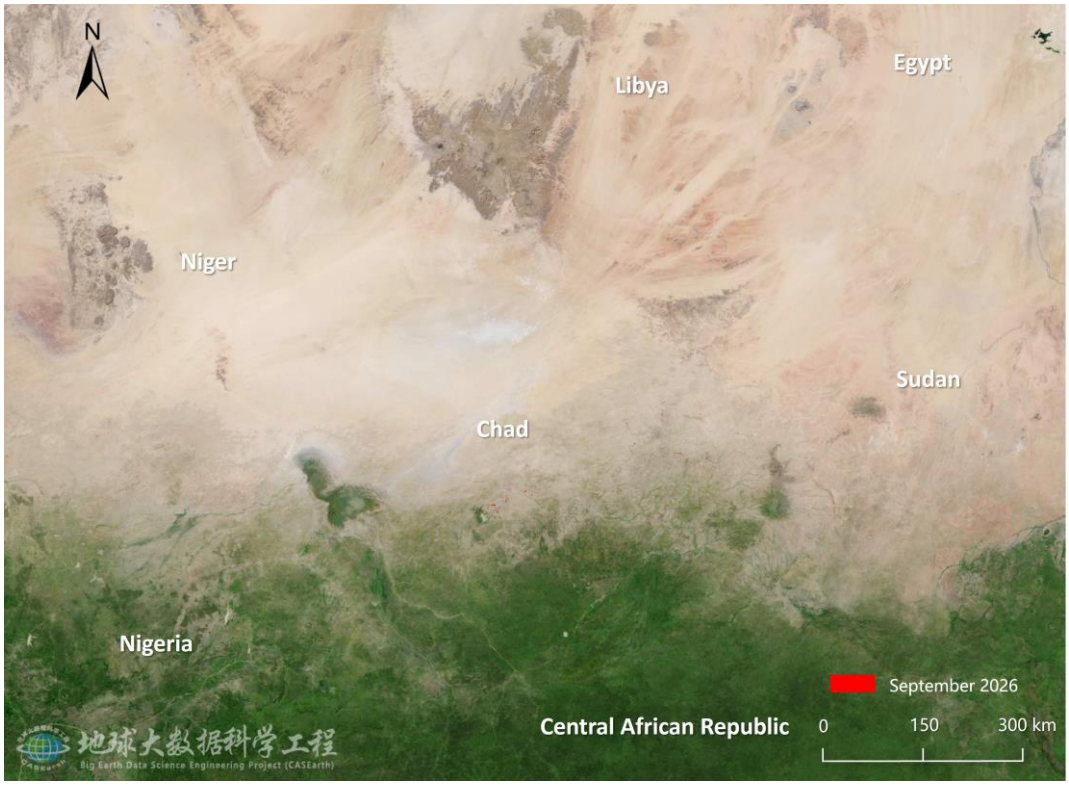


Fig. 2 Monitoring of desert locust damage in Chad (September 2026)

■ 3. Desert Locust Monitoring and Loss Assessment in Egypt

In September 2026, affected vegetation in Egypt was mainly distributed in southern oases and the upper Nile Valley, involving cropland, grassland, and shrubland. Rainfall was limited, while irrigation and water supplied by the river valley maintained green patches. These may retain residual local solitarious adults or adults dispersing along the valley and allow them to feed along field margins. Feeding sites are not necessarily suitable for oviposition; if nearby sandy soils lack sufficient moisture, hopper development may also be constrained. Current monitoring cannot determine the specific source populations or scale of breeding. Field surveys of locust life stages and soil moisture are therefore needed. Monitoring results showed that in September 2026, desert locusts affected 16.2 thousand hectares of vegetation in Egypt, including 5.0 thousand hectares of cropland, 5.9 thousand hectares of grassland, and 5.3 thousand hectares of shrubland (Figure 3), accounting for 0.14%, 0.44%, and 0.66% of the country's total cropland, grassland, and shrubland areas, respectively. Al Wadi al Jadid recorded the most extensive damage, with 6.5 thousand hectares of affected vegetation, followed by Aswan with 3.9 thousand hectares. Asyut, Suhaj, and Qina were also affected, with 3.4, 1.3, and 1.1 thousand hectares, respectively.



Fig. 3 Monitoring of desert locust damage in Egypt (September 2026)

Over the next two months, if residual soil moisture and pasture growth persist in Mauritania, localized breeding may continue and groups may form in some suitable areas; the densities of hoppers and new-generation adults should be monitored. In Chad, localized small-scale summer breeding may increase locust numbers. Surveys should be extended northward as appropriate, and control measures undertaken if rising densities or signs of aggregation warrant them. In Egypt, irrigated vegetation in the southern river valley and oases may continue to support feeding by scattered adults. If effective rainfall occurs along the eastern coastal belt, the risk of localized aggregation may increase; source populations, oviposition, and hopper development should be verified. Continued monitoring of desert locust dynamics in Mauritania, Chad, and Egypt is recommended to reduce the potential adverse impacts of recurrent locust activity on food crops and agropastoral production.

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