



# Report of Monitoring, Early Warning and Assessment of Desert Locust

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## Desert Locust Monitoring and Loss Assessment in Eritrea, Somalia and Saudi Arabia (January 2025)

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 results showed that, in January 2025, desert locusts were primarily distributed along the central Red Sea coastal and inland regions of Eritrea, the northwestern areas of Somalia and the northern Gulf of Aden coast, as well as the central Red Sea coastal areas of Saudi Arabia. These areas faced significant threats to vegetation, impacting 22.1, 15.9, and 21.5 thousand hectares, respectively. Over the next two months, abundant rainfall along the northern Red Sea coast of Eritrea is expected to promote favorable vegetation growth, triggering a partial northward migration of locusts from central regions and increasing their aggregation along the northern coast. In addition, improved vegetation conditions due to increased rainfall along the northern Gulf of Aden coast in Somalia and the central inland areas of Saudi Arabia will provide suitable breeding grounds for desert locusts, potentially causing further population growth. This period coincides with the main growing season for food crops in Saudi Arabia, as well as the primary growing and harvest seasons in Somalia. Therefore, continuous monitoring of desert locust dynamics remains essential to prevent recurring damage to agricultural and pastoral production. The specific results are as follows:

## ■ 1. Desert Locust Monitoring and Loss Assessment in Eritrea

In January 2025, Eritrea experienced abundant rainfall and robust vegetation growth, leading to a continued increase in the desert locust population, primarily concentrated along the central Red Sea coastal and inland regions. Monitoring results showed that desert locusts affected 22.1 thousand hectares of vegetation during the month, including 5.8 thousand hectares of farmland, 8.5 thousand hectares of grassland, and 7.8 thousand hectares of shrubland (Figure 1). These areas accounted for 1.33%, 0.18%, and 0.59% of the country's total farmland, grassland, and shrubland, respectively. Compared to December 2024, the affected vegetation area expanded by 1.6 thousand hectares. The Semien Keih Bahri region recorded the most extensive damage, with 9.6 thousand hectares of vegetation affected, followed by the Debub region with 7.3 thousand hectares. The Gash-Barka and Anseba regions were also impacted, with 3.2 thousand hectares and 2.0 thousand hectares of affected vegetation, respectively.

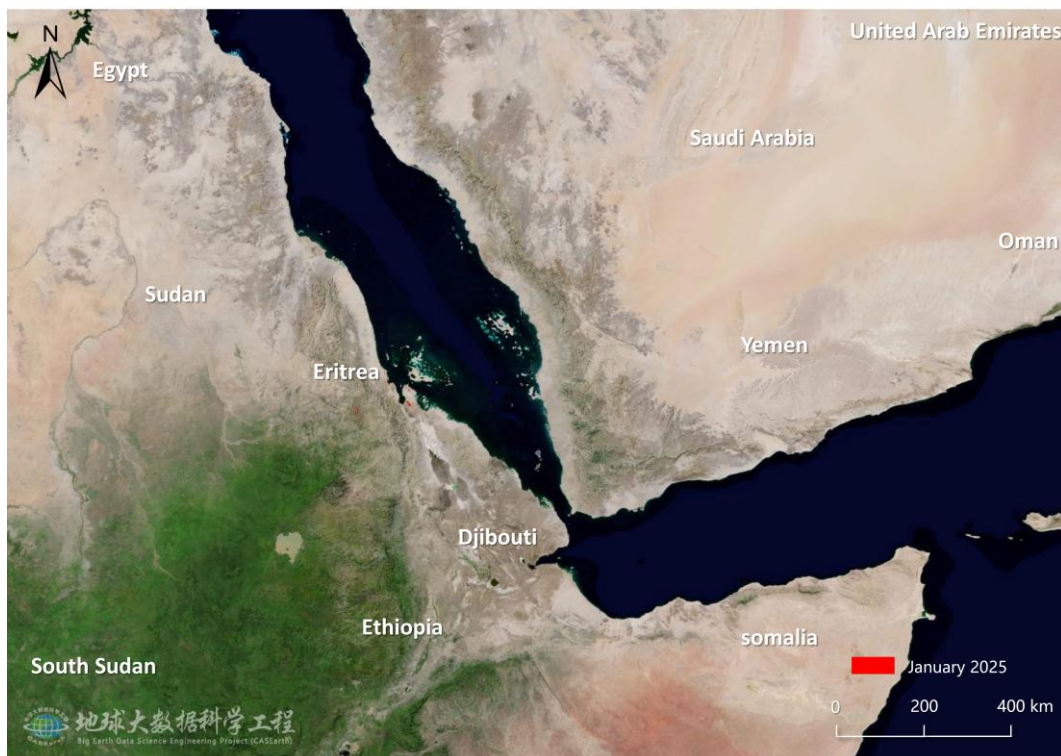


Fig.1 Monitoring of Desert Locust damage in Eritrea (January 2025)

## ■ 2. Desert Locust Monitoring and Loss Assessment in Somalia

In January 2025, increased rainfall in northwestern Somalia and along the northern Gulf of Aden coast created favorable conditions for desert locust breeding and reproduction, leading to a rise in the locust population in these areas. Monitoring results showed that desert locusts affected 15.9 thousand hectares of vegetation during the month, including 6.7 thousand hectares of grassland and 9.2 thousand hectares of shrubland (Figure 2), accounting for 0.02% and 0.04% of the country's total grassland and shrubland areas, respectively. The Sanaag region experienced the most extensive damage, with 6.0 thousand hectares of vegetation affected, followed by the North-West region with 5.4 thousand hectares.

The Awdal and Togdheer regions were also impacted, with 2.6 thousand hectares and 1.9 thousand hectares of affected vegetation, respectively.

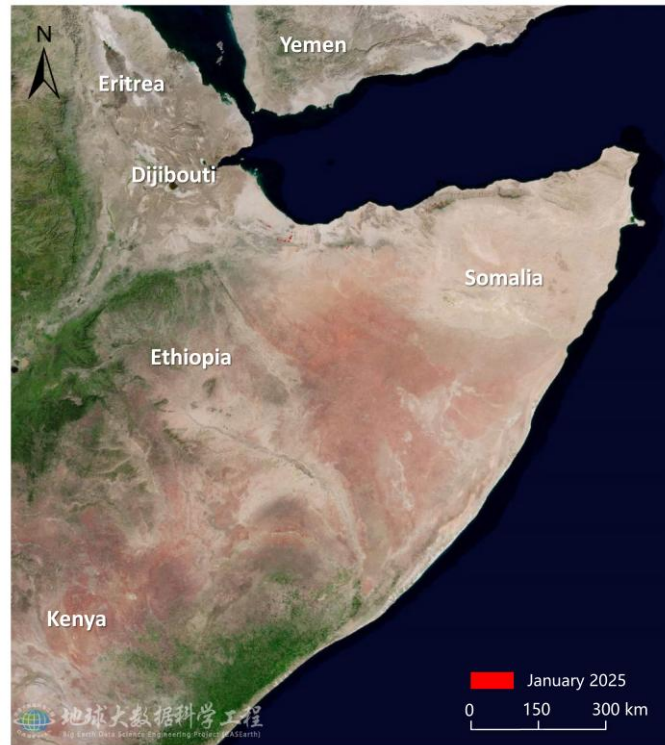


Fig.2 Monitoring of Desert Locust damage in Somalia (January 2025)

### ■ 3. Desert Locust Monitoring and Loss Assessment in Saudi Arabia

In January 2025, abundant rainfall in the central Red Sea coastal areas of Saudi Arabia created favorable conditions for desert locust breeding and reproduction, leading to an increase in the locust population in the region. Monitoring results showed that desert locusts affected 21.5 thousand hectares of vegetation during the month, including 2.7 thousand hectares of farmland, 8.3 thousand hectares of grassland, and 10.5 thousand hectares of shrubland (Figure 3), accounting for 1.23%, 0.42%, and 0.26% of the country's total farmland, grassland, and shrubland areas, respectively. The Makkah region experienced the most extensive damage, with 11.3 thousand hectares of vegetation affected, followed by the Al Bahah region with 5.7 thousand hectares. The Jizan and Asīr regions were also impacted, with 2.8 and 1.7 thousand hectares of affected vegetation, respectively.

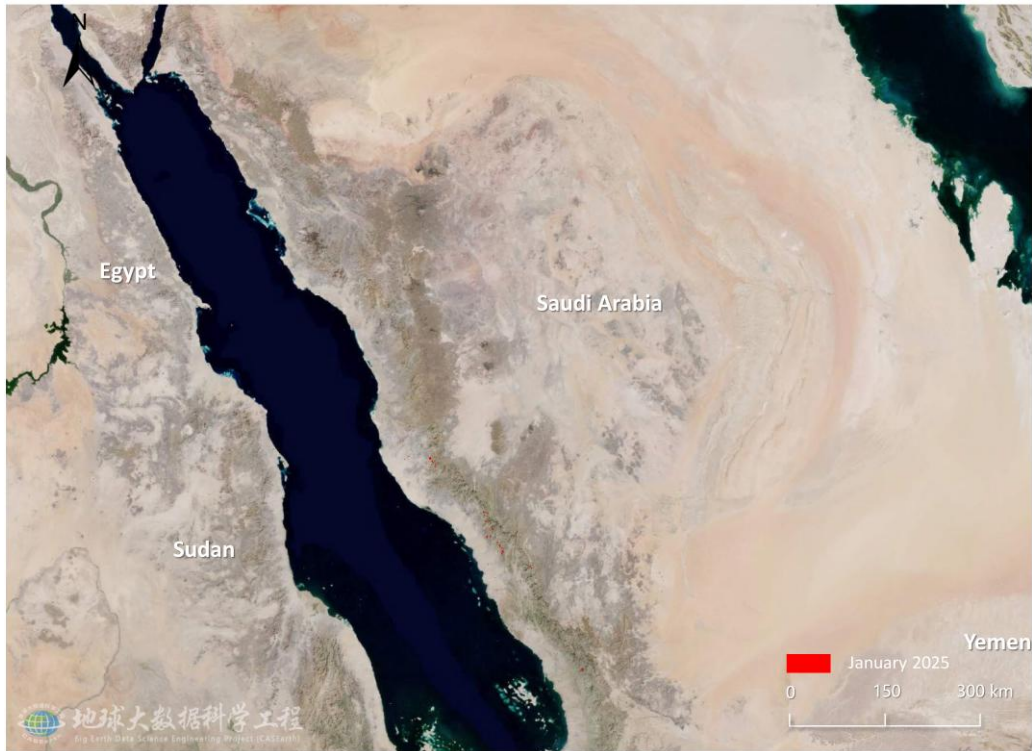


Fig.3 Monitoring of Desert Locust damage in Saudi Arabia (January 2025)

The comprehensive analysis suggests that, in the next two months, abundant rainfall along the northern Red Sea coast of Eritrea will promote favorable vegetation growth, triggering a partial northward migration of locusts from central regions and increasing their aggregation along the northern coast. In addition, improved vegetation conditions due to increased rainfall along the northern Gulf of Aden coast in Somalia and the central inland areas of Saudi Arabia will provide suitable breeding grounds for desert locusts, potentially causing further population growth. Continuous monitoring of desert locust dynamics in Eritrea, Somalia and Saudi Arabia is essential to prevent repeated losses in crop growth and agricultural production.

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This report was released by Professor Wenjiang Huang's and Associate Professor Yingying Dong's research team in Aerospace Information Research Institute, Chinese Academy of Sciences.

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