



Report of Monitoring and Assessment of Desert Locust in Africa and Asia

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Desert Locust Monitoring and Loss Assessment in Yemen, Ethiopia, Iran, and Pakistan

Integrated with multi-source Earth Observation data, e.g. meteorological data, field data, and remote sensing data (such as MODIS in the US, and Sentinel series in EU), 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.

This report focuses on the dynamics of desert locust monitoring and loss assessment in Yemen, Ethiopia, Iran, and Pakistan. The remote sensing monitoring result showed that the desert locust was mainly found in southwestern Yemen, eastern and southern Ethiopia, southern of Sistan Va Baluchestan province in Iran, and southern of Baluchistan province in Pakistan. From April to May 2022, the total damaged vegetation area in Yemen was 86.3 thousand hectares. In May 2022, 51.3 thousand hectares, 354.24 hectares and 96.48 hectares of vegetation were damaged in Ethiopia, Iran and Pakistan. Affected by the monsoon, it is expected that from late June to July, the number of locusts in southeastern Iran and southwestern Pakistan will increase, and locusts will spread to the Indo-Pakistan border. This period is the main planting and growing season for crops in Yemen and Ethiopia, the main growing season and harvest season for crops in Iran, and the main planting season for crops in Pakistan. It is still necessary to pay continuous attention to the dynamics of the desert locust disaster to prevent losses to its agricultural and pasture production.

■ 1. Desert Locust Monitoring and Loss Assessment in Yemen

In April 2022, desert locusts in Yemen harmed about a total of 40.1 thousand hectares of

vegetation area, including 5.7 thousand hectares of cropland, 1.5 thousand hectares of grassland, and 32.9 thousand hectares of shrub (Figure 1). In May, locusts in southwestern Yemen spread to north, causing damage. Compared with April, the newly added vegetation damage area was 46.2 thousand hectares, including 6.1 thousand hectares of cropland, 1.9 thousand hectares of grassland, and 38.2 thousand hectares of shrub (Figure 2). The comprehensive analysis shows that, from late June to July, affected by rainfall, locusts in southwestern Yemen will continue to mature, reproduce, and lay eggs, and the population of locusts will increase. This period is the main planting and growing season for crops in Yemen. It is still necessary to continue to pay attention to the dynamics of the desert locust disasters, to ensure Yemen's agricultural production and food security.



Fig. 1 Monitoring of Desert Locust damage in Yemen (April 2022)

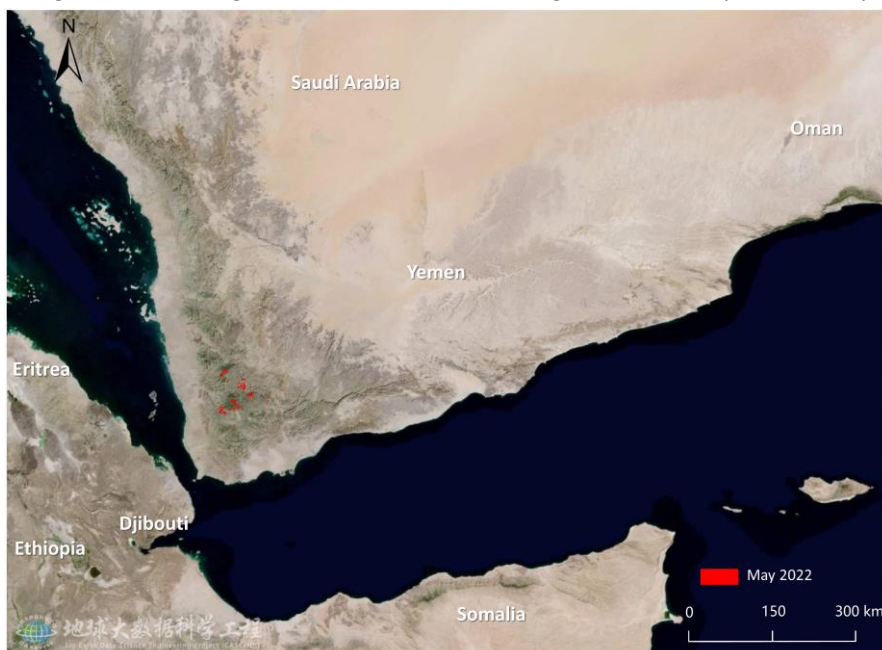


Fig. 2 Monitoring of Desert Locust damage in Yemen (May 2022)

■ 2. Desert Locust Monitoring and Loss Assessment in Ethiopia

In May 2022, the southern Ethiopian locusts spread eastward to the Somali region. Affected by the rainfall, the eastern Ethiopian locusts continued to mature, reproduce, and lay eggs. The damaged vegetation area was 51.3 thousand hectares, including 4.4 thousand hectares of cropland, 10.7 thousand hectares of grassland, and 36.2 thousand hectares of shrub (Figure 3). The comprehensive analysis shows that from late June to July, affected by rainfall, Ethiopian locusts will continue to mature, reproduce, and lay eggs, and their population will further increase. This period is the main planting and growing season for crops in Ethiopia. It is still necessary to continue to pay attention to the dynamics of the desert locusts to ensure Ethiopia's agricultural production and food security.

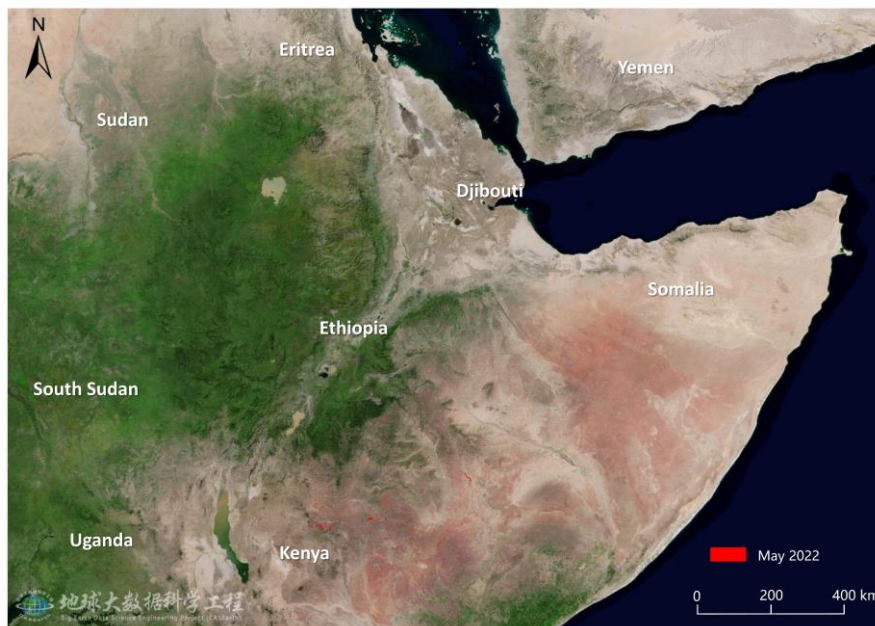


Fig. 3 Monitoring of Desert Locust damage in Ethiopia (May 2022)

■ 3. Desert Locust Monitoring and Loss Assessment in Iran and Pakistan

In May 2022, the vegetation damage areas in Iran and Pakistan were 354.24 hectares (including 255.96 hectares of cropland, 20.88 hectares of grassland, and 77.40 hectares of shrub) and 96.48 hectares (including 20.16 hectares of cropland, 60.48 hectares of grassland, and 15.84 hectares of shrub) (Figure 4). Comprehensive analysis shows that from late June to July, affected by rainfall, locusts in southeastern Iran and southwestern Pakistan will continue to mature, reproduce, and lay eggs, and their numbers will increase and further spread to the Indo-Pakistan border. This period is the main growing season and harvest season for crops in Iran, and the main planting season for crops in Pakistan. It is still necessary to pay continuous attention to the dynamics of the desert locusts to ensure agricultural production and food security in Iran and Pakistan.

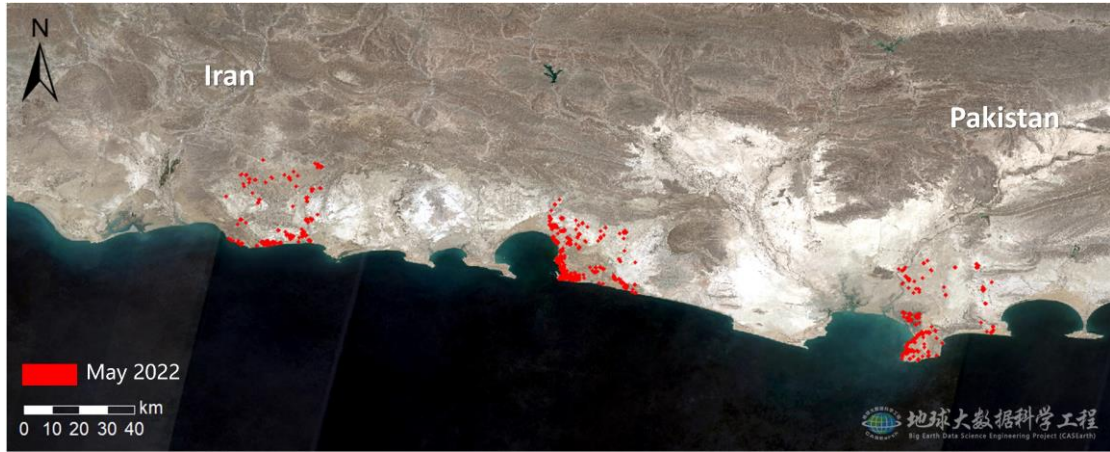


Fig. 4 Monitoring of Desert Locust damage in southeast Iran and southwest Pakistan (May 2022)

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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