



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

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Desert Locust Monitoring and Loss Assessment in Yemen 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 and Pakistan. The remote sensing monitoring results showed that, the desert locusts were mainly distributed in western Yemen and southeastern Pakistan. In August 2022, the total damaged vegetation areas in Yemen and Pakistan were 70100 and 3192.67 hectares, respectively. It is expected that from late September to October, affected by rainfall, locusts will continue to lay eggs and reproduce in inland areas of Yemen, resulting in a further increase in the population of locusts; as the monsoon retreats from late September, resulting in a decline of locust population in southeastern Pakistan. This period is an important harvest season for crops in Yemen and growing and harvest seasons in Pakistan. It is still necessary to pay continuous attention to the dynamics of the desert locust disaster to prevent repeated losses to its agricultural and pasture production. The specific research results are as follows.

■ 1. Desert Locust Monitoring and Loss Assessment in Yemen

In August 2022, affected by rainfall, locusts in western Yemen continued to lay eggs, reproduce and mature, resulting in an increase of the locust population. The vegetation damage area was 70.1 thousand hectares, including 13.3 thousand hectares of cropland, 7.7

thousand hectares of grassland, and 49.1 thousand hectares of shrub (Figure 1). The comprehensive analysis shows that it is expected that from late September to October, affected by rainfall, locusts in western Yemen will continue to lay eggs, reproduce and mature, resulting in a further increase in the number of locusts. This period is an important harvest season for crops in Yemen. It is still necessary to pay continuous attention to the dynamics of the desert locust disasters and carry out timely ground investigations and control actions to prevent the desert locusts from repeatedly causing damage to Yemen's agricultural production and food security.



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

■ 2. Desert Locust Monitoring and Loss Assessment in Pakistan

In August 2022, locusts in Pakistan were mainly distributed in the southeast, with damaged vegetation of 3192.67 hectares, including 1968.91 hectares of cropland, 910.97 hectares of grassland, and 312.79 hectares of shrub (Figure 2). The comprehensive analysis shows that from late September to October, as the monsoon retreats from late September, locusts in southeastern Pakistan will decline. This period is an important growing and harvest seasons for crops in Pakistan, and continuous monitoring of locust dynamics is needed to ensure agricultural production and food security in Pakistan.

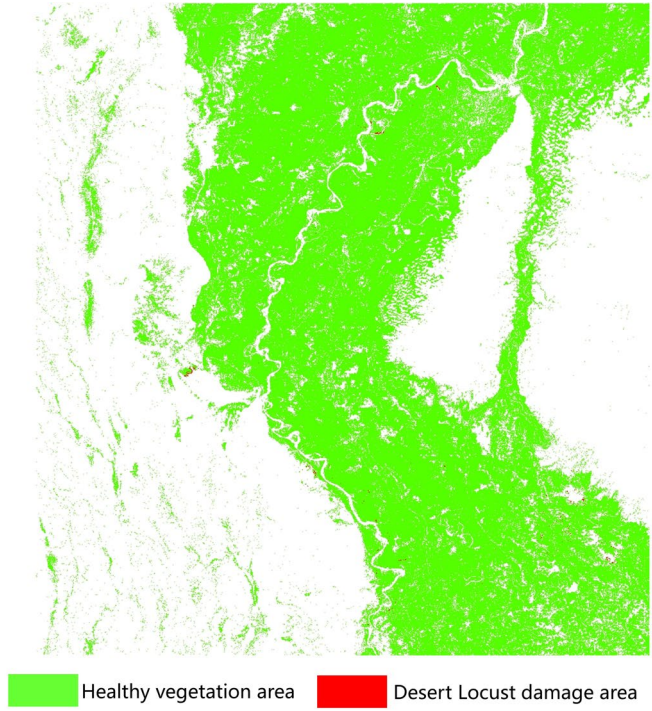


Fig. 2 Monitoring of Desert Locust damage in southeastern Pakistan (August 2022)

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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