



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

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Aerospace Information Research Institute, Chinese Academy of Sciences
Big Earth Data Science Engineering Project (CASEarth)
Key laboratory of Digital Earth Science, Chinese Academy of Sciences
National Engineering Research Center for Agro-Ecological Big Data Analysis & Application
State Key Laboratory of Remote Sensing Science
China Biodiversity Conservation and Green Development Foundation
Sino-UK Crop Pest and Disease Forecasting & Management Joint Laboratory
Key Lab of Aviation Plant Protection, Ministry of Agriculture and Rural Affairs, P.R. China

Desert Locust Monitoring and Loss Assessment in Somalia and Yemen (November, 2022)

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 Somalia and Yemen. The remote sensing monitoring results showed that, in November 2022, the desert locusts were mainly distributed in northwestern Somalia and western Yemen. The total damaged vegetation area in Somalia and Yemen were 54.7 thousand hectares and 64.4 thousand hectares, respectively. It is expected that in the next two months, the rainfall in northwestern Somalia and western Yemen will increase, and the vegetation is sufficient, which is favorable for the survival and reproduction of the desert locust. The number of locusts in northwestern Somalia and western Yemen will further increase. This period is an important growing season for crops in Somalia. It is necessary to continue to pay attention to the dynamics of the desert locust disaster in Somalia to prevent losses to its agricultural and pasture production. And it is necessary to continue to pay attention to the dynamics of the desert locust disaster in Yemen to prevent the locusts from affecting crop planting in the coming March. The specific research results are as follows.

■ 1. Desert Locust Monitoring and Loss Assessment in Somalia

In November 2022, the rainfall and vegetation in northwestern Somalia provide suitable

conditions for the survival and reproduction of the desert locust. The monitoring results showed that in November, the total damaged vegetation area was 54.7 thousand hectares, including 0.2 thousand hectares of cropland, 2.1 thousand hectares of grassland, and 52.4 thousand hectares of shrub (Figure 1), accounting for 2.06‰, 0.54‰, and 1.17‰ of the total area of cropland, grassland and shrub in Somalia, respectively. Among them, North-West province had the largest damage area of 23.3 thousand hectares. Then, the affected area of Togdheer was 17.5 thousand hectares, and the affected areas of Sanaag and Awdal were 8.9 and 5.0 thousand hectares, respectively.

The comprehensive analysis shows that, in the next two months, rainfall in northwestern Somalia will continue to increase, and vegetation is sufficient. It provides favorable conditions for the survival and reproduction of desert locusts, resulting in a further increase of the number of locusts. This period is an important growing season for crops in Somalia, and continuous monitoring of locust dynamics is needed to ensure agricultural production and food security in Somalia.

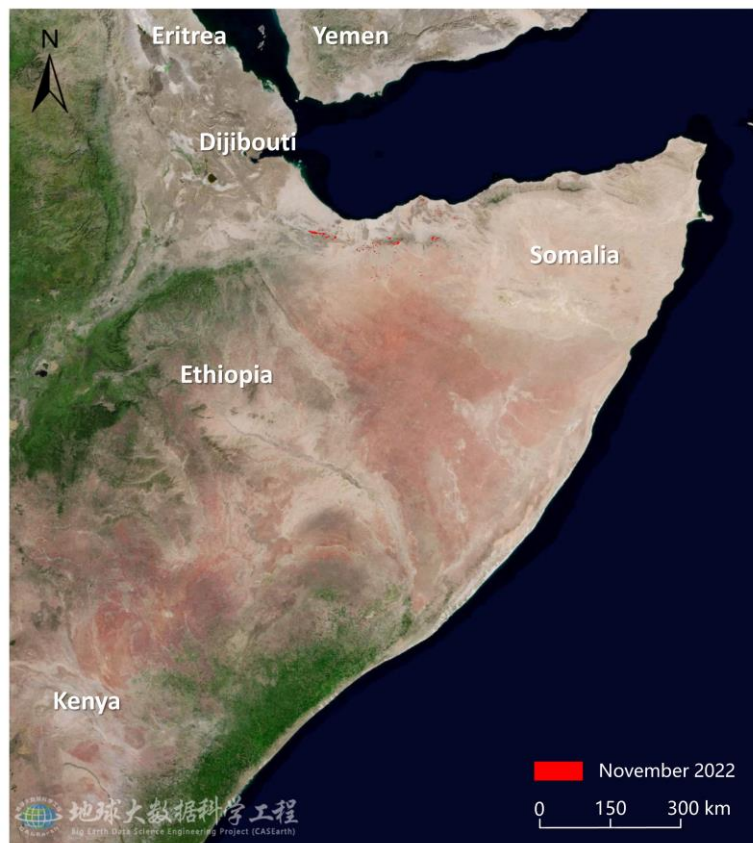


Fig. 1 Monitoring of Desert Locust damage in Somalia (November 2022)

■ 2. Desert Locust Monitoring and Loss Assessment in Yemen

In November 2022, the desert locusts were mainly distributed on the west coast of the Red Sea in western Yemen. There was a small amount of rainfall and sufficient vegetation in this region, which was favorable for the survival and reproduction of the desert locust, and the number of locusts increased slightly. The monitoring results showed that in November, the total damaged vegetation area was 64.4 thousand hectares, including 8.2 thousand hectares of grassland, and 56.2 thousand hectares of shrub (Figure 2), accounting for 2.85%

and 1.40% of the total area of grassland and shrub in Yemen, respectively. Compared with October 2022, the newly damaged vegetation area in Yemen was 54.5 thousand hectares, including 5.7 thousand hectares of grassland, and 48.8 thousand hectares of shrub. Al-Hudaydah province had the largest damage area of 47.8 thousand hectares. Then, the affected area of Dhamār was 11.0 thousand hectares and the affected area of Raimah was 5.6 thousand hectares.

The comprehensive analysis shows that, in the next two months, rainfall on the west coast of the Red Sea will increase, and vegetation will be sufficient, providing favorable conditions for the survival and reproduction of desert locusts and resulting in a further increase of the number of locusts. Therefore, it is necessary to continue to pay attention to the dynamics of the desert locust disaster in Yemen to prevent the locusts from affecting crop planting in the coming March.



Fig. 2 Monitoring of Desert Locust damage in Yemen (November 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.

Chinese Contributors

Wenjiang Huang, Yingying Dong, Longlong Zhao, Huichun Ye, Mingquan Wu, Kun Wang, Xiaoping Du, Changyong Dou, Jun Yan, Jingcheng Zhang, Bei Cui, Linsheng Huang, Dailiang Peng, Huifang Wang, Hong Chang, Yun Geng, Chao Ruan, Huiqin Ma, Anting Guo, Linyi Liu, Naichen Xing, Yue Shi, Qiong Zheng, Yu Ren, Hansu Zhang, Tingguang Hu, Yanru Huang, Yu Jin, Chao Ding, Biyao Zhang, Zhongxiang Sun, Xiangmei Qin, Xueling Li, Ruiqi Sun, Yingxin Xiao, Zhuoqing Hao, Jing Guo, Mingxian Zhao, Kehui Ren, Xiangzhe Cheng, Kang Wu, Yong Liu, Bo Wu, Weiping Kong, Juhua Luo, Jinling Zhao, Dongyan Zhang, Xiaodong Yang, Yanhua Meng, Wenjie Fan, Yue Liu, Gang Sun, Bin Wu, Qing Zhang, Dacheng Wang, Wei Feng, Xianfeng Zhou, Qiaoyun Xie, Muyi Huang, Jing Jiang, Zhaochuan Wu, Cuicui Tang, Fang Xu, Jianli Li, Wenjing Liu, Junjing Lu, Furan Song, Qingsong Guan, Qinying Yang, Chuang Liu, Yunli Han, Yuzhen Zou, Lu Li, Xinyu Chen, Yunlei Xu, Jing Wang, Qibao Lu, Fanchu Kong, Juncheng Shang.

Foreign Contributors

Belinda Luke, Bethan Perkins, Bryony Taylor, Hongmei Li, Wenhua Chen, Pablo Gonzalez-Moreno, Sarah Thomas, Timothy Holmes, Stefano Pignatti, Giovanni Laneve, Raffaele Casa, Simone Pascucci, Martin Wooster, Jason Chapman.

Advisory Experts

Bing Zhang, Gensuo Jia, Jihua Wang, Qiming Qin, Puyun Yang, Guofei Fang, Shouquan Chai, Yuying Jiang, Jingquan Zhu, Jinfeng Zhou, Dongmei Yan, Xiangtao Fan, Jianhui Li, Jie Liu, Tianhua Hong, Yubin Lan, Jingfeng Huang, Huo Wang, Anhong Guo, Zhanhong Ma, Yilin Zhou, Xiongbing Tu, Wenbing Wu, Feng Zhang, Zhiguo Wang, Lifang Wu, Dong Liang, Yanbo Huang, Chenghai Yang, Liangxiu Han, Ruiliang Pu, Jiali Shang, Hugh Mortimer, Jon Styles, Andy Shaw, Jadu Dash.

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Contact Us

Tel: +86-010-82178178 Fax: 010-82178177 Email: rscrop@aircas.ac.cn
Address: No.9 Dengzhuang South Road, Haidian District, Beijing 100094, China
Websites: <http://www.rscrop.com> / <http://www.rscropmap.com> Post Code: 100094

