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

Early October 2020

Desert Locust monitoring and loss assessment in Somalia and Yemen

Overview

Integrated with multi-source Earth Observation data, e.g. meteorological data, field data, and remote sensing data (such as GF series in China, MODIS and Landsat series in US, 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 updates of Desert Locust monitoring and loss assessment in Somalia and Yemen from July to September. The results showed that, from July to the end of September 2020, Desert Locust in Somalia harmed about 1266.1 thousand hectares of vegetation area, including 2.9 thousand hectares of cropland, 189.1 thousand hectares of grassland, and 1074.1 thousand hectares of shrub. Desert Locust in Yemen harmed about 1157.1 thousand hectares of vegetation area, including 270.7 thousand hectares of cropland, 123.2 thousand hectares of grassland, and 763.2 thousand hectares of shrub. From October to November, the Desert Locusts in Yemen will continue summer breeding and migrate northward to the western coast of Saudi Arabia, and southward to northern Somalia cross the Gulf of Aden. Moreover, the locust swarms of northern Somalia will move southward to eastern Ethiopia and southern Somalia. The period from October to November coincides with the important crops growing season or harvesting season in Somalia and Yemen. If not properly controlled, locusts will bring a major threat to agricultural production. It is necessary to continue the

Content

monitoring and early warning of the intercontinental Desert Locust plague, and organize joint prevention and control in multiple countries to ensure the safety of agricultural and pastoral production, as well as regional stability.

Monitoring and assessment of Desert Locust in Somalia

In July 2020, locusts in central and northern Somalia carried out second-generation spring breeding. Northern locust swarms migrated to summer breeding areas in Indo-Pakistan border, and some of locust swarms in Yemen migrated to northern Somalia, further increasing the number of locust swarms in northern Somalia. The results showed that, by the end of July 2020, Desert Locust in Somalia harmed about 604.6 thousand hectares of vegetation area, including 1.8 thousand hectares of cropland, 147.4 thousand hectares of grassland, and 455.4 thousand hectares of shrub. In August 2020, with rainfall, locust swarms continued to mature, lay eggs, and reproduce in northern Somalia. The northern locust swarms continued to migrate eastward, with a population decline. The results showed that, by the end of August 2020, Desert Locust in Somalia added about 356.8 thousand hectares of damaged area, including 0.4 thousand hectares of cropland, 21.0 thousand hectares of grassland, and 335.4 thousand hectares of shrub. In September 2020, due to local ground and aerial control operations in northern Somalia, the locust population continued to decrease. The results showed that, by the end of September 2020, Desert Locust in Somalia newly harmed about 304.7 thousand hectares of vegetation area, including 0.7 thousand hectares of cropland, 20.7 thousand hectares of grassland, and 283.3 thousand hectares of shrub (Figure 1).

The results showed that, from July to the end of September 2020, Desert Locust in Somalia harmed about 1266.1 thousand hectares of vegetation area, including 2.9 thousand hectares of cropland, 189.1 thousand hectares of grassland, and 1074.1 thousand hectares of shrub, accounting for 3.0%, 4.9% and 2.4% of the total cropland, grassland, and shrub in Somalia, respectively. The affected areas are mainly located in the central and northern parts of Somalia. Among them, Galguduud has the largest damaged area of 362.9 thousand hectares; followed by Mudug, with damaged area as 348.3 thousand hectares; and then followed by Woqooyi Galbeed, Sanaag, Awdal, with damaged area as 278.7, 115.7, 68.8 thousand hectares respectively. The affected area of Bari in the north was 20.6 thousand hectares, and the affected area of Nugaal was 18.2 thousand hectares, in Togdheer was 18.2 thousand hectares and in Hiiraan was 17.9 thousand hectares. Sool has less affected areas of 16.8 thousand hectares.

The comprehensive analysis showed that, in October 2020, affected by the northward wind, the locust swarms in northern Somalia will migrate to the southern Somalia and eastern Ethiopia, and are expected to reach Kenya in November; meanwhile, locust swarms in Yemen will also migrate across the Gulf of Aden to northern Somalia. October to November is an important planting season or growing season of crops in Somalia. Without effective control, the locust plague will continue

to converge and migrate, which may bring a heavy blow to the agricultural production in Somalia.

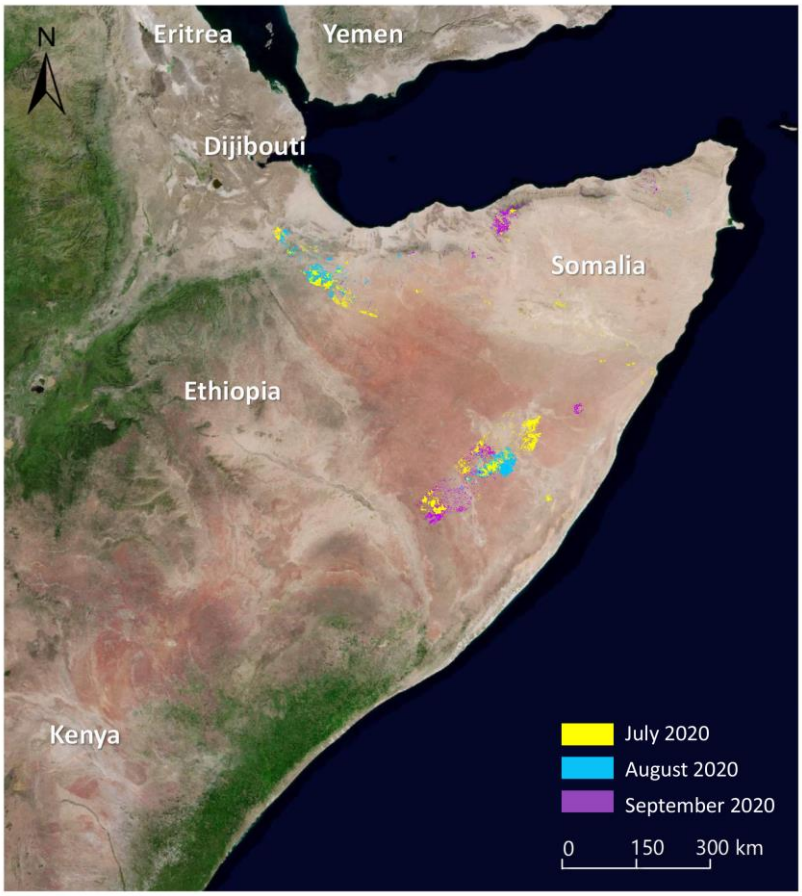

Figure 1 *Monitoring of Desert Locust damage in Somalia (July to September 2020)*

Monitoring and assessment of Desert Locust in Yemen

In July 2020, along with rainfall, desert locusts continued to reproduce in the interior and coastal areas of Yemen, and some locust swarms migrated to northern Somalia and northeastern Ethiopia. The results showed that, by the end of July 2020, Desert Locust in Yemen harmed about 660.6 thousand hectares of vegetation area, including 180.5 thousand hectares of cropland, 78.5 thousand hectares of grassland, and 401.6 thousand hectares of shrub. In August 2020, with heavy rains, locust reproduction accelerated. The locust breeding area spread to the southern Gulf of Aden coast and the western Red Sea coast, which further increased the number of locust populations in Yemen. Some of the locust swarms reached the northern coast of the Red Sea. Because the vegetation on the southern coast and the Red Sea coast is less distributed, the vegetation damage area is relatively small. The results showed that, by the end of August 2020, Desert Locust in Yemen newly harmed about 329.6 thousand hectares of vegetation area, including 63.8 thousand hectares of cropland, 30.0 thousand hectares of grassland, and 235.8 thousand hectares of shrub. In September 2020, the number of locust swarms continued to increase, and some locust swarms spread to the coast of the Gulf of Aden and the northern part of the Red Sea coast.

Results showed that, by the end of September 2020, Desert Locust in Yemen newly harmed about 166.9 thousand hectares of vegetation area, including 26.4 thousand hectares of cropland, 14.7 thousand hectares of grassland, and 125.8 thousand hectares of shrub (Figure 2).

The results showed that, from July to the end of September 2020, Desert Locust in Yemen harmed about 1157.1 thousand hectares of vegetation area, including 270.7 thousand hectares of cropland, 123.2 thousand hectares of grassland, and 763.2 thousand hectares of shrub, accounting for 26.8%, 24.1% and 13.5% of the total cropland, grassland, and shrub in Yemen, respectively. The affected areas are mainly located in the central part of Al-Hudaydah province (with affected area of 414.7 thousand hectares), the central part of Hajjah province (with affected area of 196.8 thousand hectares), the eastern Ibb province (with affected area of 102.9 thousand hectares), the eastern part of Ta’izz province (with affected area of 88.1 thousand hectares), the western part of Lahij province (with affected area of 83.6 thousand hectares), the southwestern part of Ad-Dāli province (with affected area of 55.8 thousand hectares), the southern part of Hadramawt Province (with affected area of 40.7 thousand hectares), the southern part of Al-Mahrah Province (with affected area of 35.8 thousand hectares), the Sa'dah Province (with affected area of 35.5 thousand hectares), the northern Al-Mahwīt province (with affected area of 23.9 thousand hectares), the central San'ā province (with affected area of 19.3 thousand hectares),the western part of Abyān province (with affected area of 16.9 thousand hectares). In addition, eastern Al-Baydā, southeastern Amrān, central Dhamār, western Raimah, western Al-Jawf, the central part of Ma'rib province, the southern part of Shabwah province and the eastern part of Aden province have less affected areas, with damaged area as 8.8, 8.7, 6.7, 5.6, 5.2, 4.3, 3.4, 0.4 thousand hectares, respectively.

The comprehensive analysis showed that, in October 2020, Desert Locusts in Yemen will continue to reproduce, and the number of locust swarms will continue to increase. The locust swarms along the Red Sea coast in western Yemen are expected to migrate northward to the western coast of Saudi Arabia from October to November; meanwhile, the locust swarms along the southern coast will migrate across the Gulf of Aden to northern Somalia. October to November is the important harvest season of sorghum and other crops in Yemen. If the locusts could not be controlled effectively, the locust plague will continue, which may bring a heavy blow to the agricultural and pastoral production in Yemen.

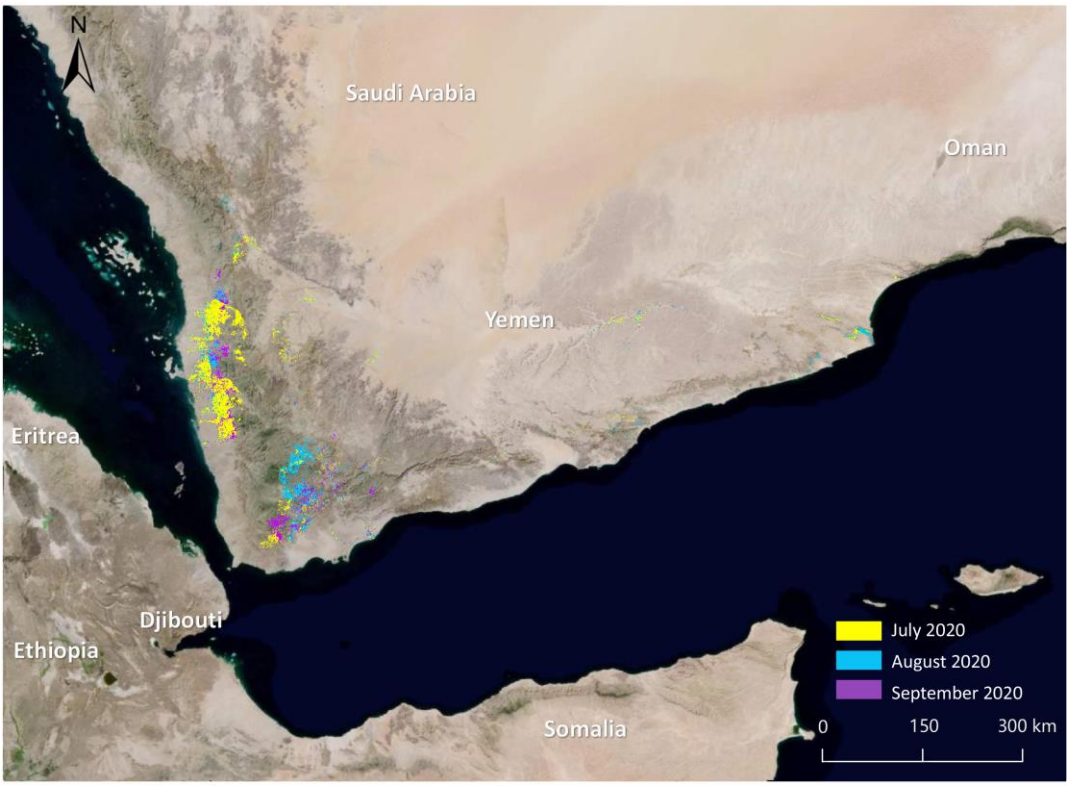

Figure 2 *Monitoring of Desert Locust damage in Yemen (July to September 2020)*

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The Vegetation Pests and Diseases Monitoring and Forecasting system are available under:
http://www.rscropmap.com/

Mission statements: As the science and knowledge service, the Sino-UK Crop Pest and Disease Forecasting & Management Joint Laboratory is to support independent evidence for crop monitoring.

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