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Use of acoustic recorders in monitoring and management of seabird breeding colony in Matsu archipelagos, Taiwan

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The Chinese Crested Tern, Thalasseus bernsteini (CCT), is the most critically endangered seabird species in Taiwan. CCT nests sympatrically with the Great Crested Tern, T. bergii (GCT), among seven protected islands within the Matsu Island Tern Refuge (MITR).To minimize disturbances during breeding season, autonomous acoustic recorders were used to monitor the activity of CCTs and GCTs on the protected islands of MITR. Based on records from 2015 to 2017, we found that the average sound pressure level between 1.5-8kHz was associated changes in the number and status of the tern colony. Therefore, it can be considered an important information point for habitat management and ecological protection in MITR. In addition, we have further developed the CCT sound recognition system using machine learning technology. We expect to be able to locate breeding colonies of CCTs through an automatic sound recognition system. Overall, autonomous acoustic recorders provide more accurate and effective information for the monitoring of seabird breeding communities on remote islands such as Matsu.

Presenter: Dr HUNG, Chung-Hang (National Taiwan University)

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