國 立 中 央 大 學

統 計 研 究 所

學 術 演 講

主 講 人：沈宗荏 教授（國立中興大學統計學研究所）

講　　題：**Estimating Minimum Habitat Requirements for Rare Species Detection when Aiming at Optimizing Conservation Planning**

時　　間：**113年06月04日（星期二）上午11：00 ～ 12：00**

地　　點：中央大學鴻經館**M429**室

茶　　會：**上午 10：30 ～ 11：00**　　地　點：鴻經館 **510** 室

ABSTRACT

Conservation efforts hinge on safeguarding suitable habitats, yet determining the requisite habitat size to detect rare species remains a challenge crucial to effective planning. No existing statistical methods address this dilemma in the literature. Drawing from statistical sampling theory, we introduce an estimator to gauge the minimum area necessary to conserve one or more additional rare species. Rigorous numerical tests confirm the high accuracy of the estimator. Practically, applying the estimator within a tropical forest plot reveals that approximately 3.86 hectares, with a standard error of 1.10 hectares, are needed to detect an additional individual of a previously unseen tropical tree species. The proposed estimator holds promise for conservation planning, offering vital insights to conservation biologists and policymakers. Facilitating the assessment of minimum detection areas required for species enables a balanced approach to land use, accommodating both urban development and conservation imperatives

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