中央研究院生物多樣性研究中心
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Terrestrial Biodiversity and Ecosystems

Quantifying Change in Biodiversity— Individual, Population and Community

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Lecturer

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Time: 2023. 04. 19 Wed. 10:30

Venue: Auditorium, 1st Floor,
Interdisciplinary Research Building
跨領域科技研究大樓1樓演講廳

Host: Dr. Hui-Yu Wang 王慧瑜副研究員

~Attendee are suggested to wear mask~
~與會者建議配戴口罩~

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Abstract

Emerging concerns underline unprecedented pressures responsible for the biodiversity crisis on Earth. Understanding the extent to which contemporary biodiversity change occurs has thus been a central interest for ecological sciences and conservation management. While various indices have been developed and used to quantify the state of biodiversity, these indices can sometimes contradict each other. A missing piece here is a unified aspect that offers a cohesive implication over these diverse biodiversity measures.

The talk begins by elaborating on the classical ecological concepts of biodiversity, namely alpha-, beta- and gamma-diversities, and provides a little formal interpretation based upon abundance distributions. We then show that a particular change in species abundance distributions corresponds to a specific type of biodiversity. This fact implies that quantifying a difference between two abundance distributions is equivalent to measuring the change in biodiversity; in other words, commonly used biodiversity indices are, in fact, an estimator of distributional deviation from one to another. We demonstrate how our framework encompasses the critical concepts in biodiversity study and provides more insight into the ecological community dynamics we observe.