Marine Biodiversity and Ecosystems

GenBank is a Reliable Resource for 21st Century Biodiversity Research

Dr. Ryuji Machida
町田龍二副研究員

Associate Research Fellow
Biodiversity Research Center, Academia Sinica

Time: 2020. 02. 11   Tue. 11:00
Venue: Auditorium, 1st Floor,
Interdisciplinary Research Building
跨領域科技研究大樓1樓演講廳
Host: Dr. Benny K. K. Chan 陳國勤研究員

~Attendee must wear mask~
~與會者請配戴口罩~

Marine Biodiversity and Ecosystems

Abstract

As loss of biodiversity and ecosystem degradation become major concerns worldwide, scientists increasingly depend on DNA-based characterization of animal communities for monitoring and impact assessments. These analyses ultimately depend on the taxonomic reliability of genetic databases for taxonomic assignments. Concerns have been raised about the reliability of GenBank, the largest and most widely used genetic database. We show that, contrary to expectations, the proportion of mislabeled sequences in GenBank is surprisingly low. Major taxonomic errors are vanishingly small (0.01% at the class level, 0.05% at the order level), and likely <1% even at the genus level. These results show that GenBank is much more reliable for a range of applications, including studies of environmental change, than previously thought.