



The University of Hong Kong
School of Biological Sciences

Qualifying Seminar

Conservation genomics of a widely distributed and a highly restricted endangered species

Date: 16th Dec 2021

Time: 9:30 am

Venue: 6N11



Yellow-breasted Bunting



Hong Kong Cascade Frog

About the speaker:

Guoling Chen is a PhD student in Dr. Simon Sin's lab. Her interests fall into adaptive evolution, speciation, and population genomics of animals. Now she is focusing on conservation genomics of endangered species.



Abstract:

Small and isolated populations of threatened species are more prone to genetic threats, such as loss of genetic variation and inbreeding depression, than large and stable populations. The Hong Kong Cascade Frog (*Amolops hongkongensis*) is one of the endangered species in Hong Kong due to its restricted and severely fragmented distribution range. I will study the genetic structure, genetic diversity and inbreeding levels of this species, and compare these population features with other three *Amolops* species. Besides, fungal diseases are one of the major threats to the decline of global amphibian diversity. I will also study the prevalence of an emerging amphibian fungal disease in Hong Kong Newts and other amphibians in the wild and pet trade market in Hong Kong.

In addition to species with small population size and restricted distribution, species with a large population can also be at risk of extinction. The Yellow-breasted Bunting (*Emberiza aureola*), which used to be one of the most abundant songbirds in the world, is now critically endangered. This species is undergoing rapid population decline and local extinction. To better understand the population features of this species, I will determine the population structure, genetic diversity, inbreeding level, mutation load, and demographic history of this poorly known species, and compared it with other sympatric bunting species. The knowledge obtained will enable the genetic management of *E. aureola* by assessing evolutionary potential and preventing genetic erosion for this species.

--- All are welcome! ---