

## Dynamics of deleterious mutations and purifying selection in small population isolates

**Date:** Fri, Nov. 1st

**Time:** 16:00 (UTC+8)

**Venue:** 3N01 + Zoom



The importance of genetic studies in the recovery of endangered populations has long been recognized, and the Isle Royale gray wolf serves as a unique natural experiment that challenges the conventional doctrine of selecting source individuals from large, outbred populations for genetic rescue. As an alternative, small populations can also serve as potential candidates, as they represent a more diverse reservoir of adaptive genetic variation. However, the genomic consequences of prolonged population decline and isolation are poorly understood, as the heterogeneity of patterns observed in individual studies—primarily focused on endangered species—makes generalizations and predictions difficult.

In this talk, I will present our findings from a study involving a large sample of wild nine-spined stickleback populations with varying histories of isolation and an exceptionally broad range of inbreeding levels. Apart from investigating whether the genomic consequences of prolonged isolation in small populations are predictable, this study offers a rare quantitative glimpse into how the interplay between inbreeding and purging determines the load of deleterious mutations in the wild. In the end, I will share insights into selecting candidate populations for genetic rescue programs.



Ying Chen

I obtained my PhD from HKU in the summer of 2022 under the supervision of Prof. David Dudgeon and Dr. Hannah Mumby. Following this, I joined Prof. Juha Merilä's lab as a postdoctoral researcher before transitioning to Prof. Timothy Bonebrake's lab for another postdoc this summer. My experiences in different labs, including the Freshwater Conservation Lab, the Ecological and Evolutionary Genetics Research Lab, and the Global Change and Tropical Conservation Lab, have made my time at HKU unique and wonderful. Given this, it is time to give a seminar!

ALL ARE WELCOME!

