**[PhD Thesis Presentation\_External] – Sam Ross – “The stability of ecosystems under global environmental change.”**



**Date:** Tuesday, November 23, 2021 – 18:30 to 19:00

**Location:** Please join via Zoom

**Description:**

Please note this is an external talk hosted by Trinity College Dublin but is a public event, open to attend by anyone. It will feature research conducted in collaboration with the Biodiversity & Biocomplexity [Economo] Unit.

**Presenter:** Sam Ross

**Supervisor**: Professor Ian Donohue [external]

**Unit**: Integrative Community Ecology Unit

**Zoom URL**: <https://tcd-ie.zoom.us/j/93229934064?pwd=ZWJaVFZ1cTA2K29KSlhhRG94a0ZyZz09>

**Title:** The stability of ecosystems under global environmental change

**Abstract**:

Through global environmental change, humans are modifying the planet at an unprecedented rate and scale, triggering the ongoing biodiversity and climate crises. Ecological stability and the consistency of nature’s contributions to people is fundamental to the continued sustainability of human societies. Stability is a complex and multidimensional concept including components such as variability in time and space and the resistance to and recovery from disturbances. Global change has the potential to destabilise ecosystems, but the form and strength of the relationship between different global change drivers and dimensions of stability remains understudied, precluding general or mechanistic understanding. Here, I combine theory, a field experiment, and observational data from a high-resolution acoustic monitoring network to reveal the potential for multiple global change drivers to erode multidimensional ecological stability. Critically, I also show how biodiversity and natural habitats can buffer the destabilising effects of global environmental change on ecosystems and soundscapes, providing vital insurance against disturbance. In an era characterised by unrelenting global change and intensifying disturbance regimes, my results provide a key step towards a generalisable understanding—and ultimately management—of the stability of ecosystems and their contributions to human wellbeing.