YID3214 Urban Ecological Systems

Instructor: Professor Stephen Pointing

Office Location: Saga RC1-01-04F

Office Hours: Mondays and Thursdays 14:30 – 16:00 hrs (directly after classes) or by appointment

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YID3214 Classes: Mondays and Thursdays 14:30 – 16:00 hrs, Classroom TBA

Module Description

With an increasingly urbanised human population the interaction of nature with the built environment and its human inhabitants is emerging as one of the greatest sources of both opportunity and inertia to goals of sustainability. In this module, you will consider the extent to which urbanisation has changed natural ecosystems and led to the rise of a new urban ecology, and consider how humans can value and manage this in a socio-ecological context. We will then address how the confluence of climate change, globalisation and urbanisation are fundamentally altering our living space and the implications for human health and wellness in our own urban ecology. There are no pre-requisites for this module.

Some Important Notes

This module will use Canvas as an integral part of the delivery and assessment for this module. All students are expected to use the Canvas site for this module throughout the semester. This will be the location for all learning materials, readings, assessment instructions, assessment submission and grading, as well as online instructor-student feedback. Please note it is highly unlikely that you will be able to successfully complete this module without full interaction with the module's Canvas site. If you have a condition that may affect your ability to access or use Canvas, please contact the instructor for alternative arrangements. You will also be required to participate in excursions at various locations around Singapore. This will require use of public transport and/or walking in urban and park locations. If you require mobility assistance please contact the instructor. Assessment for this module is by coursework only, there is no final examination.

Learning Outcomes

Upon successful completion of this module you should be able to:

- Identify the major threats to biodiversity and ecological systems posed by urbanisation
- Explain how urban ecosystems develop, with particular reference to pests and introduced species
- Understand the processes for evaluation and management of urban ecosystems
- Recognise the impact of urbanisation on human health and wellbeing
- Plan and conduct a detailed investigation and reporting on a given urban ecological issue
- Engage in informed discussion on societal and planning considerations for urban futures

Module Readings

Both books are available online as e-books via Yale-NUS library. You will be directed to the relevant chapters/sections of each book during each class. Other specific readings from books and research journals will be provided as downloadable files or web links.

- Ecology of Urban Environments, K.M. Parris (2016)
- Urban Ecology, K.J. Gaston (ed.), (2013)

Module Assessment

- ***Weeks 1-10:*** Participation during in-class activities (10% of total)
- ***Weeks 11-12:*** Case Study oral presentations (10% of total)
- ***Week 13*****:** Learning Diary for weeks 1-10 [written evidence of additional research on each week's topic] (30% of total)
- ***Week 13:*** Urban Ecology Case Study [a photographically illustrated documentation of an urban ecological topic] (50% of total)

The classes for this module are very interactive and group activities/presentations are an integral part of the learning journey and will be assessed. You are expected to include reports for these group activities in your Learning Diary assignment but please note that each student must submit an individual Learning Diary. The Case Study assessment item is also an individual assessment item. This will involve creating an illustrated photo-journalistic piece that documents a specific urban ecological issue in Singapore. All assignments should be submitted via the CANVAS portal by the specified deadlines.

Syllabus

Week 1: Urbanisation and urban ecology as the ‘new normal’

Week 2: Urban environments as an ecological niche

Week 3: Response of organisms to urbanisation

Week 4: Case Study briefing and methodology workshop

Week 5: Urban ecosystem services

Week 6: Singapore's urban ecology (class field trip)

Week 7: Case Study proposals peer review

Week 8: Urban green spaces - their importance to nature and people

Week 9: Urban ecology and human social organisation

Week 10: Urbanisation impacts on human health

Week 11: Case Study presentations

Week 12: Case Study presentations

Week 13: Urban ecological futures and green infrastructure