

- Research seminar -

主催: 高知大学 研究拠点プロジェクト (第Ⅲ期)
革新的な水・バイオマス循環システムの構築

Interactions between human activities and invertebrate communities in aquatic landscapes

流域生態系における人間活動と無脊椎動物群落との相互作用

2018 November 27

1800-1900

In Monobe campus

3-1-13

Abstract

A fundamental question in modern day ecology is how ecosystem structure and functioning changes as a result of human activities. Different species occupy different habitats and human activities also vary among locations within a landscape. In this seminar, I will use 3 case studies to illustrate the spatial aspects of the interaction between invertebrate communities and human activities.

In a first case study, I used machine learning techniques to classify habitats of mangrove crabs based on extensive photographic field surveys. This allowed me to visualise the effects of anthropogenic habitat modification on mangrove crab community composition and food web functioning.

A second case study models the distribution of invertebrates occupying river locations under influence of different natural and human factors across the whole of Switzerland. A multiple species distribution model was developed which explicitly integrates existing knowledge regarding ecological preferences and sensitivities to human disturbance, by using Bayesian statistical inference.

As a final case study, I will discuss my current research at Kochi University. This research focuses on the selective impacts of micro-plastic pollution on crab communities as a result of their habitat and feeding preferences.

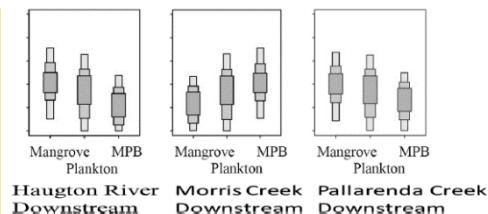
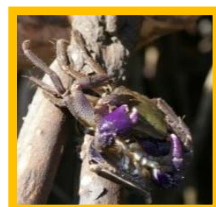


Dr. Peter Vermeiren

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Biography

Dr. Vermeiren originally comes from Belgium, where he studied Biology at the University of Ghent. Later, he graduated with a PhD in tropical ecology from James Cook University Australia. His research focuses on the relationships between organisms and the landscape in which they occur, and how human activities modify these relationships. Dr. Vermeiren was awarded an international JSPS postdoctoral research fellowship to conduct research on micro-plastic pollution in estuarine systems at the University of Kochi.



Variable diet for the crab *Metopograpsus latifrons* across 3 locations

Predicted (size of circle) and observed (red= absent, blue = present) occurrence of the invertebrate *Baetis rhodani* across Swiss rivers

