



Adaptation of marine lake invertebrates to variable environments.

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Motivation

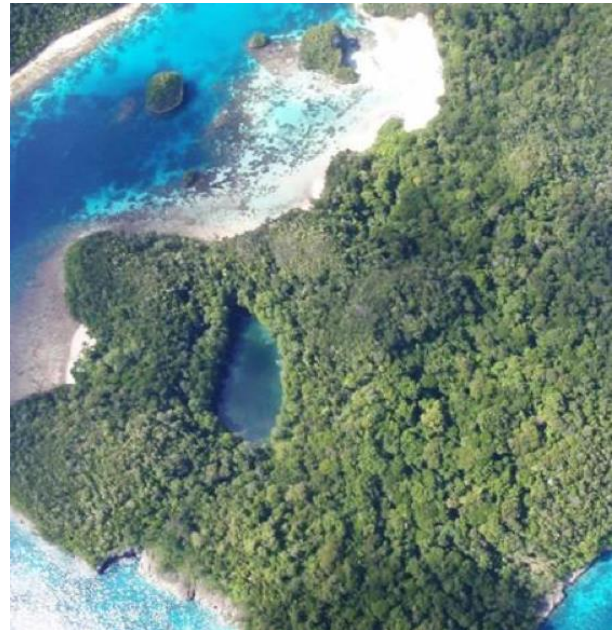
The environment is one of the key landscape components which determine population isolation and divergence. For marine populations, it is still not well-known how differences in environmental variables contribute to adaptation and speciation. Especially in this changing world it is imperative we understand how populations might respond. We use the clearly defined spatio-temporal context of marine lakes, "island of sea", to answer the following questions:

Aims and objectives

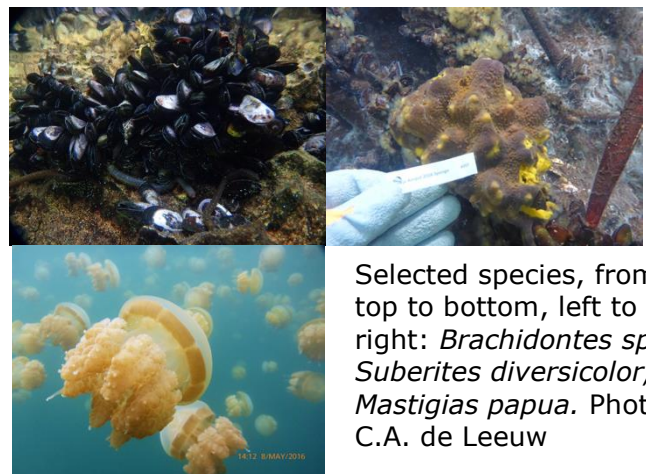
- To what extent are marine lake populations genetically connected?
- Can we find evidence for isolation-by-environment as opposed to isolation-by-distance?
- Can signatures of selection be observed relating to this local adaptation?
- Are signatures of selection correlated with morphological and physiological signatures of adaptation?

Method

We have selected marine lakes along a gradient in temperature and pH. They represent "natural laboratories", which hold long-term exposed populations. By employing state-of-the art genomic sequencing and bioinformatic techniques, we can explore demographic histories and signatures of selection. Micro ct scans will be used to complement genetic data with morphology.



Marine lake. Photo: L.E. Becking.



Selected species, from top to bottom, left to right: *Brachidontes sp.*, *Suberites diversicolor*, *Mastigias papua*. Photo: C.A. de Leeuw



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Wageningen University, 2014,
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