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## Sponge communities in Indonesian Marine Lakes

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**3-12 month internships available at the National Museum of Natural History -
Naturalis with Drs. Lisa Becking and Dr. Nicole de Voogd**

You:

- are interested in Marine Ecology and Evolution
- would like to participate in fieldwork in the Derawan Archipelago, East Kalimantan, Indonesia (<http://en.wikipedia.org/wiki/Kakaban>)
- would like to gain experience in molecular or chemical laboratory techniques

Background of the project:

Marine lakes are little studied, yet fascinating, habitats. These landlocked salt-water bodies, which are thought to have originated during the Holocene, have maintained a marine character through a network of subterranean connections to the adjacent sea. Populations isolated in marine lakes provide an extraordinary opportunity to study evolution in invertebrate marine taxa that typically lack fossil records. The abundance and ubiquitous presence of sponges have led us to select this taxon as focus of our research.

The objective of our project is two-faceted :

- We wish to address the variation in community composition of sponge assemblages between marine lakes and adjacent marine habitats and relate this variation to spatial and environmental variables.
- In parallel, we wish to obtain insight in the evolutionary history and genetic connectivity of populations of four key sponge species in marine lakes and in the adjacent sea.

What you will do:

Participate in fieldwork at marine lakes on Kakaban and Maratua islands, Indonesia, collecting specimens of the target species and recording aspects of their ecology. Participate in lab-work, working on sponge taxonomy, collecting DNA sequence data or chemical data from the target sponge species.

Contact:

If you are a highly motivated student that enjoys working in the field and the lab, please send a 1-2 page CV to Lisa Becking: becking@naturalis.nnm.nl

We can discuss the details of the internship to create a project that encompasses both your research interests and the goals of our project.

Starting literature:

Dawson MN, Hamner WM (2005) Rapid evolutionary radiation of marine zooplankton in peripheral environments. *PNAS* 102 (26): 9235-9240.

Engel S, Pawlik J (2005) Interactions among Florida sponges. II. Mangrove habitats. *Marine Ecology Progress Series* 303:145-152.

Nichols SA, Barnes PAG (2005) A molecular phylogeny and historical biogeography of the marine sponge genus *Placospongia* (Phylum Porifera) indicate low dispersal capabilities and widespread cryptic speciation. *Journal of Experimental Marine Biology and Ecology* 323:1-15.

Tomascik T, Mah AJ (1994) The ecology of 'Halimeda lagoon': an anchialine lagoon of a raised atoll, Kakaban Island, East Kalimantan, Indonesia. *Tropical Biodiversity* 2:385-399.

de Voogd NJ, Haftka JJH, Hoeksema BW (2005) Evaluation of the ecological function of amphitoxin in the reef-dwelling sponge *Callyspongia (Euplaccella) biru* (Haplosclerida: Callyspongiidae) at southwest Sulawesi, Indonesia. *Contributions to Zoology* 74: 51-59.

de Voogd NJ, Cleary DFR, Hoeksema BW, Noor A & van Soest RWM (2006). Sponge beta diversity in the Spermonde Archipelago, Indonesia. *Marine Ecology Progress Series* 309: 131-142.



Kakaban and Maratua islands are part of the Derawan Archipelago in East Kalimantan, Indonesia.



Kakaban marine lake surrounded by mangroves.



Mangrove-root studded with sponges.