

Genetic population structure and connectivity of the mud creeper *Terebralia palustris* (Linnaeus, 1767) in Kenya and Madagascar

Ratsimbazafy Hajaniaina A. and Marc Kochzius

Marine Biology, Free University of Brussels (VUB), Pleinlaan 2, B-1050 Brussels, Belgium

E-mail: hratsimb@vub.ac.be

The 'South Equatorial Current' (SEC) in the Indian Ocean, which flows westward along 10°S in the eastern basin and shift to 15°S west of 80°E (Grotsky and James, 2001), could facilitate the dispersal of propagules, which is important for recolonisation, especially after disturbance events. *Terebralia palustris* (Potamididae: Gastropoda), also known as the mud creeper, is the largest prosobranch in mangrove habitats (Pape, 2007). It has a high importance in the nutrient cycling process in mangrove forests by its significant processing amount of leaf litter (Slim *et al.*, 1997; Fratini *et al.*, 2004). Despite their wide distribution, abundance, and ecological importance in mangrove systems, there have been no studies on connectivity and genetic population structure of this species. However, it is known that the eggs deposited by the females on the roots of mangroves hatch into free-swimming planktonic larvae, which could have a high dispersal potential. The genetic population structure will be analysed by sequencing the mitochondrial cytochrome c oxidase subunit I gene (COI), constructing a haplotype network, and conducting an Analysis of Molecular Variances (AMOVA). Samples have already been collected from several sites in Madagascar and Kenya. Additional samples are planned to be collected in Tanzania. This study aims to evaluate the connectivity of different populations of the mud creeper in Madagascar, Kenya, and Tanzania.

References

- Fratini S., V. Vigiani, M. Vannini and S. Cannicci. 2004. *Terebralia palustris* (Gastropoda; Potamididae) in a Kenyan mangal: size structure, distribution and impact on the consumption of leaf litter. *Marine Biology* 144:1173–1182.
- Grotsky Semyon A., James A. Carton and Raghu Murtugudde. 2001. Anomalous surface currents in the tropical Indian Ocean. *Geophysical Research Letters*.
- Pape Ellen, Agnes Muthumbi, Chomba Peter Kamanu and Ann Vanreusel. 2008. Size-dependent distribution and feeding habits of *Terebralia palustris* in mangrove habitats of Gazi Bay, Kenya. *Estuarine, Coastal and Shelf Science* 76:797-808.
- Slim F.J., M.A. Hemminga , C. Ochieng , N.T. Jannink , E. Cocheret de la Moriniere , G. van der Velde. 1997. Leaf litter removal by the snail *Terebralia palustris* (Linnaeus) and sesarmid crabs in an East African mangrove forest (Gazi Bay, Kenya). *Journal of Experimental Marine Biology and Ecology* 215:35–48.