

Junior Fellowship for Dr. Lailah Gifty Akita: Monitoring Ghanaian coastal water quality using biological indicators

Initiative: Wissen für morgen – Kooperative Forschungsvorhaben im subsaharischen Afrika (beendet)

Ausschreibung: Postdoctoral Fellowships "Resources, their Dynamics and Sustainability - Capacity-

Development in Comparative and Integrated Approaches"

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Urbanisation and human population growth are causing increasing demand on the use water resources through land-use changes and pollution of inland and coastal waters. Benthic species can be used as indicators of water quality (i) due to their specific ecological tolerances to particular pollutants and (ii) due to their potential to archive events over long period of time. Chemical analyses of trace elements and isotopic signatures of bivalves (tissue and shells) reveal natural and human impacts of pollution which allows the reconstruction of past aquatic environmental conditions (e.g., pollution). The objectives of this research project are: (i) To describe the seasonal composition and distribution of benthic assemblages in the Ghanaian coastal waters using community analytical methods, (ii) to evaluate historical trends in heavy metals (cadmium, copper, mercury, zinc) using flame atomic absorption spectrophotometry, (iii) to measure polychlorinated biphenyls (water, sediment, bivalve tissue and plastic resin pellets) using gas chromatography with an electron capture detector and (iv) to increase science literacy pertaining to environmental quality issues. The project will bridge knowledge gaps in biodiversity of benthic invertebrates from West Africa, Ghana and develop a water quality model for ecological restoration and policy development.

Projektbeteiligte

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Open Access-Publikationen

Physicochemical influence on the spatial distribution of faecal bacteria and polychaetes in the Densu Estuary, Ghana

Geochemical contamination in the Densu Estuary, Gulf of Guinea, Ghana

A baseline study of spatial variability of bacteria (total coliform, E. coli, and Enterococcus spp.) as biomarkers of pollution in ten tropical Atlantic beaches: concern for environmental and public health