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“Reconcile land system changes  
with planetary health”

## Do freshwater stoneflies (Plecoptera) in danger in west african sahel region?

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### Abstract

Stoneflies are valuable indicators of ecological health and play a crucial role in maintaining the biodiversity of West Africa, but the research on Stoneflies species are still very insipid and sparse. By understanding their distribution patterns, we can develop effective strategies to conserve these important insects and ensure the sustainability of aquatic ecosystems in Western Africa region. To fill this gap, we have investigated on Stonefly distribution patterns in West Africa, particularly in Burkina Faso. The stonefly data were gathered from field sampling using a standard AQEM/STAR net sampler with 25 cm × 25 cm opening and 500  $\mu$ m mesh and key research articles in Western Africa region. At the same time, the following keys water quality variables, including temperature, pH, electrical conductivity and dissolved oxygen were measured *in situ*. The results showed that, only one species “*Neoperla spio* (Newman, 1839) from family of Perlidae is reported, but the genetic diversity is very poorly documented in many areas of West Africa. The results revealed that abundances of stonefly varied between countries, and decreased drastically, and foreseen to decline in Burkina Faso. The lower number of species reported here could be explained by (1) the lack of taxonomic knowledge, (2) the poor richness of Stoneflies Western Africa region, or (3) threats of land use and climate change exacerbating species erosion. From Our results, stoneflies survival is critical in the Western Africa region, and this call for urgent action to support research, promoting awareness to protect their habitats, that may help to ensure the continued presence of these fascinating and ecologically important insects for future generations.

**Keywords:** Burkina Faso, distribution, freshwaters, stoneflies, threats, Western Africa