

Spatio-Temporal Variability in Reciprocal Resource Subsidies across Adjacent Terrestrial and Aquatic Eastern Cape Ecosystems

Authors : Tiyisani L. Chavalala, Nicole B. Richoux, Martin H. Villet

Abstract : Rivers and their adjacent ecosystems are linked by reciprocal ecological subsidies. Rivers receive nutrients and energy from land, and these transfers can represent important food subsidies, a phenomenon known as allochthony. Emergence of adult aquatic invertebrates can also provide important food sources to terrestrial consumers. Reciprocal subsidies are influenced by factors such as canopy cover, river flow rate and channel width, which can be highly variable through space and time. The aim of this study is to identify and quantify the main trophic links between adjacent ecosystems (terrestrial and freshwater systems) in several Eastern Cape Rivers with different catchment sizes and flow rates and to develop an understanding of the factors that affect the strength of these links and their spatial dynamics. Food sources and consumers were sampled during four seasons (August 2016, November 2016, February 2017 and May 2017), and stable isotope ratios will serve as tracers to estimate the food web structures. Emergence traps are being used to quantify the rates of emergence of adult aquatic insects, and infall-pan traps are being used to quantify the terrestrial insects falling into rivers as potential food subsidies.

Keywords : emerging aquatic insects, in-falling terrestrial insects, reciprocal resource subsidies, stable isotopes

Conference Title : ICBEST 2018 : International Conference on Biodiversity, Ecological Science and Technology

Conference Location : Dublin, Ireland

Conference Dates : January 30-31, 2018