

## • ECOLOGÍA DE POBLACIONES Y COMUNIDADES ACUÁTICAS

### 013-glo3n. Sub-Antarctic streams break the rules: functional feeding groups along watershed gradients with and without urban impact

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#### Resumen:

The River Continuum Concept (RCC) has been widely used to understand the relationship between abiotic conditions, basal resources and aquatic communities, including longitudinal patterns of benthic macroinvertebrate functional feeding groups (FFG). However, the RCC has been questioned for southern hemisphere temperate streams, and we asked whether it applies to sub-Antarctic streams in southern Patagonia? We studied FFG assemblages in Fuegian stream gradients with urbanization (Urb) and reference conditions (Ref). We assessed physicochemical characteristics and basal resources in 6 streams (54°50' S, 68° W). We measured FFG abundance with 4-5 benthic samples using a Surber net (450  $\mu$ m mesh) in each watershed's upper, mid and lower reaches (N = 85). We conducted ANOVAs and perMANOVAs to evaluate differences due to stream type (Urb vs. Ref) and reach (upper, mid and lower) on the proportion of each FFG and overall FFG assemblage, respectively. Urb streams had lower canopy cover, dissolved oxygen, and substrate size and higher temperature and nutrient concentration, compared to Ref streams. The overall assemblage differed among stream reaches and type. While RCC hypothesized higher proportion of shredders in headwaters, scraper in mid-, and collector-filterers in lower-reaches, In Ref reaches, shredders were more abundant in midstream, and no differences were found for the other FFGs between reaches. In Urb, collectors-gatherers were more abundant downstream; scrapers increased towards midstream, decreasing downstream, and collector-filterers had the greatest abundance upstream. Moreover, shredders were more abundant in Urb, and collector-filterers in Ref. FFG distribution in Fuegian streams differed from the expectations of the RCC, which relies on gradients in basal resources. This might be due to extreme upstream conditions (e.g., low temperature and nutrient concentrations). Similarity in downstream areas between RCC and Urb streams due to the high proportion of collector-gatherers might be consequence of their tolerance to urban conditions and the availability of resources.

#### Palabras clave:

Tierra del Fuego, Urbanización, longitudinal distribution, macroinvertebrates.