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ÖKOLOGISCHES KOLLOQUIUM

des Instituts für Zoologie in Person in Raum 0.024

Wednesday, 10.04.2024, 01:15 pm



Dr. Kristin Scharnweber

Ökol. Forschungsstation Rees-Bienen

Host: Prof. Dr. Eric von Elert

Food web interactions within and among ecosystems

Food webs depict the trophic interactions that occur in biological communities, i.e. who eats whom. Trophic interactions are of fundamental importance to understand the dynamics of species in a system, but also the functioning of ecosystems.

My talk will focus on the structuring factors of aquatic food webs, but also on trophic interactions across ecosystem boundaries. I will start with the structuring role of important biomolecules and their consequences for phenotypic adaptations in consumers. Besides the important macronutrients (i.e. carbon, nitrogen, and phosphorus), consumers are highly reliant on complex organic compounds, such as polyunsaturated fatty acids (PUFAs). These biochemical compounds are parts of lipids and play major functional and structural roles in cell membranes, and many other physiological processes. Aquatic consumers, such as freshwater fish are facing the challenge to meet their physiological need despite a heterogenous distribution of PUFAs in their resources. They can either acquire food sources rich in a given PUFA or invest in the internal synthesis to obtain the molecule from more accessible dietary precursors. I will illustrate the resource acquisition -synthesis trade-off using the ecotype-system of Eurasian perch as an example.

In the second part of my talk, I want to expand the horizon of aquatic food webs to the landscape level. Aquatic and terrestrial systems are linked via multiple fluxes and pathways. This view on connected ecosystems is important, as much of global biodiversity loss occurs in fragmented and altered landscapes, and understanding the importance of spatially connected ecosystems via resource flows is critical to conserving and managing ecosystems in an era of global change. Here, I want to focus on the contribution of terrestrial insects to the diet of fish inhabiting river sections that are highly disturbed by mining activities. I will demonstrate the potential of mining activities to restructure aquatic food webs, forcing the fish community to an increased reliance on terrestrial insects.

Gäste sind herzlich willkommen!
Die Mitarbeiter/innen der Ökologie

→ bei Rückfragen: 470-8242 (Niedeggen)