

**FOODWEB SERVICES AND DISSERVICES: DOES BOTTOM UP REGULATE TOP DOWN? Howard Ferris and Sara Sánchez-Moreno. Department of Nematology, University of California, Davis, CA 95616, USA; Email**

[hferris@ucdavis.edu](mailto:hferris@ucdavis.edu). In the soil food web, resources produced by autotrophs pass through channels mediated by herbivores, bacterivores and fungivores. Flow through the herbivore channel is controlled by consumer abundance and moderated by plant defenses. The bacterivore and fungivore channels are bottom-up controlled by plant resources. Carbon flow in all channels is potentially regulated by generalist predators whose abundance is resource-dependent and which are sensitive to environmental conditions. Resources are exploited by a diversity of functional guilds which are, in turn, exploited by their predators in an equilibrium of bottom-up and top-down forces. The potential exists for an auto-regulatory process; diverse communities create diverse resources that maintain diverse communities. But, field observations indicate that the two regulatory forces are asynchronous and do not equally affect all trophic or functional groups; that is, the equilibrium between the forces is in dynamic flux. In agricultural fields, where bottom-up resources are abundant, soil microbial biomass is often many times greater than that of all microbial-feeding organisms and higher-level predators are almost absent; other regulatory forces, such as slower rates of increase, inter-guild competition, environmental quality, or recovery from recent disturbance, may be affecting microbial feeder abundance. Under natural conditions, generalist predator guilds are often abundant and may impose top-down pressure on microbial- and plant-feeding nematodes while bottom-up resources may be limiting.