

The effects of Lycosoid spider density within trophic cascades

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In a trophic cascade an organism can indirectly have a beneficial impact on another organism by directly impacting an organism that interacts with that organism. This idea is useful in conservational practices because keystone predators can be used to control the populations lower down on the food chain, ultimately benefiting producers. In the grasslands of western Montana, grasshoppers are considered a large pest by local farmers and it was the goal of this project to determine if Lycosoid spiders played the role of a keystone predator within this ecosystem by preying on early developmental stage grasshoppers. This project also looked into how the grasshoppers reacted to the Lycosoid spider presence, and if a potentially resulting trophic cascade had a positive effect on plant biomass. After analyzing data collected along similar transects and at the study site, it was found that while early developmental stage *Melanoplus sanguinipes* and *Melanoplus femurubrum* exhibit risk behaviors in the presence of Lycosoid spiders and that the number of individuals practicing these behaviors increased with the number of spiders added, no trophic cascade resulted.