

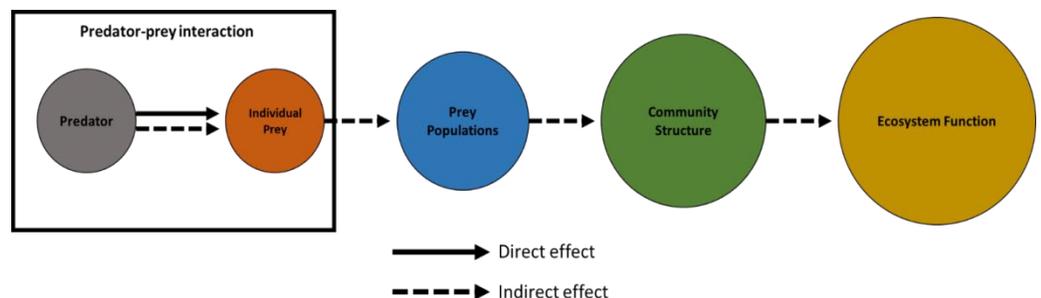
From individuals to ecosystem: The consequences of predator-prey interactions across ecological scales

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Predators shape community structure and function by indirectly affecting primary producers via trophic cascades. These trophic cascades are generated by predators consuming prey [termed density-mediated indirect interactions (DMII)] or by predators inducing phenotypic changes in their prey [termed trait-mediated indirect interactions (TMII)]. Knowing the magnitude of, and mechanism (i.e., DMII vs. TMII) underlying, trophic cascades is important, as these indirect effects can ultimately impact ecosystem-level processes. However, our ability to generate predictive theory regarding how predators influence community and ecosystem processes is limited, as we lack a good mechanistic understanding of how predator effects cascade between levels of ecological organization. Here, I will discuss a series of studies in diverse systems (e.g., salt marshes, sub-arctic lakes, deserts) that aim to develop predictive theory regarding how predator effects cascade across levels of ecological organization and how such predator effects are mediated by predator function traits (e.g., hunting mode and diet breadth).



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