

SCHOOL OF ENVIRONMENT AND NATURAL RESOURCES

SENR Seminar Series

Consumer Aggregations Act as Hotspots of Ecosystem Services in Rivers



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Aggregations of consumers create local patches (hotspots) of nutrient regeneration and material flux that promote resource heterogeneity, increasing biodiversity. Freshwater mussels are long-lived, sedentary filter-feeding consumers that often occur as dense, speciose aggregations in streams (mussel beds). Integrated field studies, field experiments, mesocosm experiments, and laboratory experiments, conducted by our lab over the past 15 years, have shown that mussel beds are hotspots of biological activity in streams. Mussels provide and modify habitat. Nutrients excreted by mussels alleviate nutrient limitation, shorten nutrient spirals, and subsidize aquatic and terrestrial food webs. Mussel effects on ecosystem processes are context dependent and vary with temperature, discharge and nutrient loads. Ecosystem processes performed by mussels can be framed as the ecosystems services that they supply to humans, such as filter-feeding providing biofiltration. These ecosystem services are being lost because of global declines in mussel abundance.



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THURSDAY

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4:10–5:30 P.M.

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