

# Conspecific Cases as Alternative Grazing Surfaces for *Glossosoma intermedium*

by

Jennifer C. Cavanaugh

## ABSTRACT

Larval *Glossosoma intermedium* are benthic grazers that deplete periphyton patches on stream substrate to extremely low levels. During periods of high grazer density or low net primary production, periphytic resources on the substrate can become limited, which forces these keystone grazers to employ alternative foraging strategies. *Glossosoma intermedium* have exhibited a facultative feeding behavior during which they graze periphyton from conspecific cases. In this study, I monitored three populations of *G. intermedium* to determine the conditions under which this feeding behavior occurs. *In situ* observations of conspecific case grazing were conducted for one year. Periphyton biomass ( $\mu\text{g}/\text{cm}^2$  chlorophyll *a*) was measured from larval cases and the substrate from which the larvae were removed. I also examined diatom community composition on *G. intermedium* cases and the substrates from which the cases were removed. Grazing of conspecific cases was significantly correlated to larval densities at all streams. Chlorophyll *a* concentrations were evaluated against *G. intermedium* density, age, and size structure. Regardless of *G. intermedium* density, age, or size, levels of chlorophyll *a* were significantly higher on larval cases than on the surrounding stream substrates. There was also greater diatom species diversity on *G. intermedium* cases than on the surrounding substrates. These results suggest that *G. intermedium* cases support a diverse diatom community, and that periphyton growing on cases of conspecifics provides a previously unrecognized and unevaluated food source.