

**Letters of Intent: EPR**  
**Target Date: August 15, 2003**

**Bottom-up control of community structure in mussel beds at 9N, East Pacific Rise: A pilot project.**

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Chemoautotrophic endosymbiotic and free-living bacteria are presumed to be the primary producers within mussel-bed habitats. The two types of primary producers must compete for available sulfide, yet the effect of this competition on resources available to the heterotrophic invertebrate fauna associated with mussel beds has not been explored. Tests of the hypothesis that there may be bottom-up control of invertebrate populations within mussel beds requires demonstration of the logistical feasibility and determination of the replication required to produce the statistical power required before investing in a large-scale program involving multidisciplinary studies. I will propose a relatively short-term, low-cost pilot project to develop methods and demonstrate the feasibility of an experimental approach to this issue.