Graduate School of Oceanography - OCG 695
April 7, 2008 3:30 PM, Corless Auditorium
Seminar Abstract
Matt Schult

A survey of benthic macrofaunal assemblages (>2 mm) in Narragansett Bay, RI with correlations to anthropogenic disturbances

The objective of this benthic study was to examine the structure of regional macrofaunal communities with respect to species diversity, abundances and biometric analyses. The goal of these measurements will be to correlate benthic fauna with regional impacts from varying sources of disturbance including seasonal hypoxia, pollutants, nutrients and heated waters from power-plant cooling systems. In June of 2006 samples were collected at four sites within upper Narragansett Bay: Conimicut Point, Greenwich Bay and Mount Hope Bay (June 16th) and a control station off the northern tip of Conanicut Island (June 20th).

Substrate was collected in three replicates with a modified 0.44 m^2 Van Veen grab and sieved on site through 2.0 mm square mesh. Preservation of samples with 10% buffered formalin and staining with Rose Bengal was completed on the day of collection. Collected fauna were sorted according to three taxonomic groups: Arthropoda, Mollusca and Polychaeta, with subsequent classification of individuals to species level. Sampling in this manner targets a niche of faster-moving or deeper-burrowing fauna that may evade other (diver-coring collection) sampling regimes. However, non flow-through sampling devices (i.e., Van Veen grabs) have been criticized for creating a bow-wave that disrupts the sediment-surface flocculent layer prior to contact, introducing loss of smaller surface-dwelling species. Sieving with a coarser mesh size is thought to retain larger organisms not significantly affected by this sampling complication. In addition, this larger size class of benthic fauna can be used to improve estimations of biomass distribution within a community.

Presently, all individuals of the Arthropoda and Mollusca groups have been positively classified to species, while Polychaeta members are undergoing identification and enumeration. Upon classification, species will be measured according to station for formalin-wet and dry biomass, followed by ash-free biomass. This dataset of species abundance and biomass distributions will be analyzed to assess the structure of benthic assemblages within the four sites. Results of this study will be compared to a similar study of smaller fauna at the same four sites; together these studies will contribute to present understandings of benthic community responses to anthropogenic stressors in Narragansett Bay

Matt Schult received a B.S. in Biology from the University of Pittsburgh in 2002. He entered GSO as a M.S. candidate in the fall of 2006. His major professor is Candace Oviatt. James Heltshe is also contributing as a core committee member.

Please rank the abstract and presentation in areas A-G using the scale below:

0=Decline to Evaluate 2=Above Expected Standards 4=Below Expected Standards
1=Outstanding 3=Acceptable 5=Poor

A. Quality of Abstract _____
B. Preparation of Material _____
C. Timing _____
D. Scientific Content _____
E. Quality of Verbal Communications _____
F. Adequacy of Visual Aids _____
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