

Annual Report Summary Format

Period Covered by the Report: October 2001-March 2002

Date of Report: April 1, 2002

Title: Evaluating trophic processes as indicators of anthropogenic eutrophication in coastal ecosystems: an exploratory analyses

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Institution: Dauphin Island Sea Lab

Research Category: SGER

Project Period: 10/2001-09/2002

Objective(s) of the Research Project: The proposal aims at testing the hypothesis whether anthropogenic eutrophication uncouples the trophic transference of primary production to consumers. Based on existing evidence, eutrophication is expected (1) to depress consumption of primary production by herbivores, (2) to depress decomposition of plant detritus, and (3) consequently to increase accumulation of plant biomass and detritus. The importance of testing these hypotheses is two-fold. First, it will improve our understanding of the effects of anthropogenic eutrophication on the ecology of coastal ecosystems. Second, it may identify a series of ecological processes, such as trophic transference and carbon storage, as efficient indicators of eutrophication, thereby offering appropriate new tools to environmental managers.

Progress Summary/Accomplishments: Our work is right on schedule. As indicated in the proposal, we started our project in October 2001, and we make a sampling trip every two months. We are also analyzing the samples within a few weeks after each sampling trip. At present, more than 75% of all the samples taken are analyzed. Yet, it is still too early to make any sound conclusions, since the time of maximum biological activity, i.e. spring and early summer, remain to be sampled. Nevertheless, the fall and winter data obtained suggest that our hypotheses could hold true when the project is concluded.

Publications/Presentations: no presentations yet due to the reasons explained above.

Future Activities: We will follow our sampling schedule as explained (every two months) till September 2002. This one-year project, besides setting the template for further studies and proposals, will per se generate a number of contributions in scientific meetings and at least one publication in an international journal

Supplemental Keywords: herbivory, decomposition, metabolism, coastal ecosystems, anthropogenic eutrophication

Relevant Web Sites: not developed yet, but it is planned within the next two years (as part of a general web page for my lab)

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