

Annual Report Summary Format

Period Covered by the Report: April 2002-December 2002

Date of Report: January 24, 2003

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 (non-cost extension granted till 09/2003)

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 proceeding satisfactorily. Ever since the beginning of the Project (October 2001) we have been sampling our study sites approximately every six weeks. We are also keeping the lab work up to speed, and at present we have about 75% of the samples analyzed. We are pleased with the results and at this point, after having sampled each season at least several times and having replicated the fall and winter seasons for 2001 and 2002, we feel that we can start drawing some robust conclusions. This project is generating a substantial part of one Ph.D. and at least two publications. We are so pleased with how the project is coming along that we have requested (and been granted) a non-cost extension. We are planning to match this project with on-going funds in the PI lab. The anticipated termination date is 09/2003.

Publications/Presentations: We will present part of the results in the upcoming 2003 bi-annual ERF meeting in Portland (Oregon). As mentioned above, we anticipate at least two publications out of the work done here. In addition, this work will also complement other publications coming out of the PI'S lab.

Future Activities: We will follow our sampling schedule every six weeks till September 2003. Within two years from now or so, the Ph.D. student being partly funded with this project will graduate and the publications will be submitted. This work will also served as a template for further studies and proposals.

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

Relevant Web Sites: <http://ecosystemslab.disl.org>

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