Modeling Nitrogen in the Watershed, II
Using a decision-support system for evaluating management alternatives to improve nutrient-use efficiency in the Elkhorn Slough watershed

Workshop Agenda

Monday, June 7th 2004
1:00 pm – 4:15 pm
Location: **Elkhorn Slough National Estuarine Research Reserve**

12:30 – 1:00   Registration

Introductions   Dr. Grey Hayes (Elkhorn Slough NERR)

Workshop Objectives   Dr. William Salas (Applied Geosolutions)
Dr. Salas will provide an overview of the project funded by NOAA's Cooperative Institute for Coastal and Estuarine Environmental Technology. This project utilizes a process-based biogeochemical model called Denitrification-Decomposition, or DNDC, to develop a geospatial tool for assessing the effectiveness of agricultural management options for reducing trace gas emissions and nutrient loading to the Elkhorn Slough NERR.

Participant Introductions   All
Participants will introduce themselves and their interests in nutrient and nitrogen management in the region.

DNDC Model Overview and Updates   Dr. Changsheng Li (UNH)
DNDC, a process-oriented computer simulation model, was developed based on the biogeochemical concepts for predicting soil carbon and nitrogen biogeochemistry. Dr. Li will provide a more detailed description of the DNDC model (drivers, input variables, outputs, etc.) and brief overview of validation studies and results from some sample applications, along with updates on development since last year's workshop.

2:30 – 2:45   Break

Watershed Results, ES-DNDC   Dr. Salas and Dr. Li
        Results from initial analyses of N-leaching and trace gas emissions from agricultural systems in Elkhorn Slough watershed will be provided. Results of validation studies and alternative management scenarios will be addressed.
        Data from uncertainty analyses using Most Sensitive Factor (MSF) and Monte Carlo approaches will be presented.
        This period will also be spent discussing management scenarios under consideration in the region. Based on these discussions a candidate management alternative will be selected for the model demonstration and training sessions to follow.

Product Generation with ES-DNDC   Steve Boles and Mike Routhier (UNH)
Demonstration of how to use product generation system to create output products.

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Tuesday, June 8th 2004
9:00 am – 4:45 pm
Location: **Moss Landing Marine Labs**

8:30 – 9:00   Registration and Coffee

Training and Model Demonstration   Dr. Li and Dr. Salas
Participants will be trained on how to run the ES-DNDC model using the Moss Landing Marine Lab computer facilities. Training will include how to install ES-DNDC, how to build input databases, how to run scenarios, and how to create output products.

10:45 – 11:00 Break

Training and Model Demonstration (continued)   All
Demonstration on how to use the ES-DNDC model to examine baseline conditions, alternative management scenarios and perform uncertainty analyses.

12:15 – 1:30   Lunch (provided by workshop)

Training and Model Demonstration (continued)   All
Participants will run the model and have an opportunity for more detailed discussions of management scenarios. Based on the candidate management alternatives, the participants will analyze the impacts of alternative management strategies on N-leaching, NH_3 volatization and trace gas emissions.

3:30 – 3:45   Break

Closing Question & Answer Period   All
Closing question and answer period. Opportunity for participant feedback, including discussions on ways to enhance the utility of decision-support system and changes/improvements to the interface.