Team EcoMod News

eco mod

Jan 2023

Eco Mod Team Bio

The Integrated Ecological Modeling team (EcoMod) was formed in 2011 by ecologist Todd Swannack and engineer Candice Piercy. We're a multidisciplinary team of ecologists and engineers that are focused on furthering the use of modeling to forecast the benefits of ecology-informed engineering.

ANSRP Next Generation Modeling Phase I

As phase I of our focus on Next Generation Modeling winds down, we are looking forward to the kicking off phase II in FY23. During a productive meeting in August 2022 with our collaborators of the Texas Research Institute for Aquatic & Groundwater Ecology (TRIAGE), we brainstormed how to integrate and parameterize our models with the multiscale field data collected during phase I. Our phase II roadmap includes three main focus areas: ecological interactions, community dynamics, and model communication and evaluation.
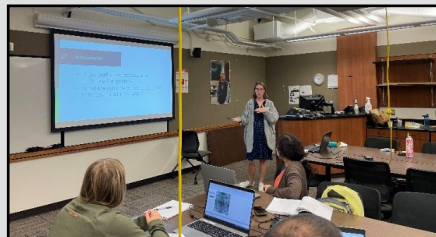
We are also kicking off a monthly seminar to showcase the data and model formulations that came out of the projects of phase I. The first webinar will be titled *Next Generation Ecological Models.*

Dr Weston Nowlin of Texas State University leads a brainstorming session

Dr. Candice Piercy at the CWG meeting

National Collaboration

A new start project under Engineering With Nature® (EWN®) is providing a great ERDC cross-lab collaboration. EcoMod's Dr. Candice Piercy is teaming up with co-PI Marissa Torres of CRREL, along with a team from CHL, to study the use of oyster reefs in water attenuation. EL is interested in the biological construction of the reefs, while CHL and CRREL are looking into modeling wave-reef interactions under varying environmental conditions. One of the first tasks was leading a fact-finding workshop with USACE districts at the Coastal Working Group meeting in October 2022.

Dr. Candice Piercy, Ashley Schutt, and Dr. Emily Russ at CWG

Agent-Based Modeling courses

A one-week boot-camp style modeling course on agent-based modeling has been developed by Dr. Todd Swannack and Carra Carrillo. This course is targeted towards professionals who want to take their modeling to the next level by simulating the behaviors of individuals They debuted this course at Oregon State University in September 2022, and are already planning two more in 2023. If you are interested in hosting a course, contact us at ecomodteam@usace.army.mil

Carra Carrillo presents course to Oregon State University students
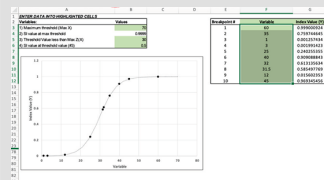
Model development using the TAM

Model Spotlight: TAM

The Toolkit for interactive Modeling (TAM) is a user-friendly platform that allows users to rapidly develop, quantify, and document index-based models. The TAM was designed to help demystify the modeling process as users can develop and visualize models in real time. The TAM toolkit is available for download here: https://hdl.handle.net/11681/45101