

Water Resources Modeling 101: How Computer Simulations Support Lake Scientists and Managers

Wednesday, September 26, 2018, 1:00-4:00

Portland State University, Room TBD, Cost:\$20

Lead instructor: Rich Wildman, Ph.D., Water Resources Scientist, Geosyntec Consultants, Inc.

Computer simulations of lakes, reservoirs, rivers, and their watersheds can add much to the traditional toolbox of the lake scientist or lake manager. These simulations, usually called “models”, leverage hard-earned field data to A) interpolate temporally and spatially, B) understand influences on key water quality variables, and C) evaluate management scenarios that are difficult or undesirable to test at the lake itself. Modeling begins with a simulation of the volume of water in a lake and the circulation of that water. Then, abiotic variables like temperature and suspended sediment can be added to a model, followed by nutrients, dissolved oxygen, algae and zooplankton, and other water quality and ecosystem variables of interest. How can you start a modeling effort at *your* lake? What data sets will you need, and how much time does it take? What types of modeling software do lake managers use, and how do you decide which is right for you? How do lake models differ from watershed models? Why create a model when you could just collect more field data? These questions and more will be addressed in an interactive (i.e., audience participation is required, so come with your site-specific management stories and problems!) workshop run by a modeling group that has solved a wide range of water quality problems. This workshop is meant to connect lake managers and scientists to this powerful technology for the first time.