



First Announcement

UFZ Environmental Modeling & Monitoring Colloquium

Wednesday, 09 November 2022, 2:00-3:30 pm

ONLINE

“Land Management, Ecological Models, and Empirical Research: Case Studies from California’s Redwood Forest Streams”

Dr. Steven F. Railsback

Lang, Railsback and Associates &

California Polytechnic State University Humboldt, Arcata (California, U.S.A.)

Dr. Railsback and colleagues have developed and applied individual-based ecological models (IBMs) to predict effects of land use and water management on stream fish and amphibians. He will present several applications that illustrate how IBMs can be useful for both site-specific management decisions and producing general understanding of problems such as effects of multiple stressors. Further, he will illustrate how modeling management problems led to important discoveries in both empirical (field and laboratory) and theoretical ecology. One application looked at cumulative effects of three stressors from land uses such as forest harvest and agriculture: elevated turbidity due to fine sediment, elevated summer temperature, and loss of deep pool habitat. A second application examined effects of barriers (e.g., poorly designed road crossings and small dams) that reduce the ability of fish to move among connected streams. The third example is an IBM of the reproductive cycle of a frog species that breeds in mountain rivers; the model was designed to identify ways that managing river flows and temperatures to enhance fish populations could impact frogs. Dr. Railsback will conclude by identifying model results that conflicted with widely-held management beliefs and, therefore, changed how we think about important general problems.

All interested colleagues are kindly invited.



Dr. Steven Railsback

... is a research consultant and adjunct professor with the Environmental Modeling Graduate Program at Cal Poly Humboldt (formerly: Humboldt State University). He collaborates with fish and wildlife ecologists, river engineers, and resource managers to develop and apply individual-based models of how management of river flow and temperature regimes, channel shape, etc., affects populations and communities of important species. Steve’s education includes BS and MS degrees in Civil and Environmental Engineering and a PhD from the University of Bergen, Norway; and he spent five years on the research staff of Oak Ridge National Laboratory. He has collaborated with UFZ scientists since 2000, made his first visit in 2003, and co-authored two books with Volker Grimm (RU ModMon/ Dept. OESA).

For more details, see: <https://ecomodel.humboldt.edu>