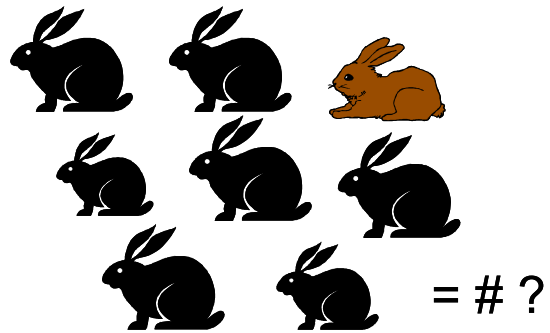
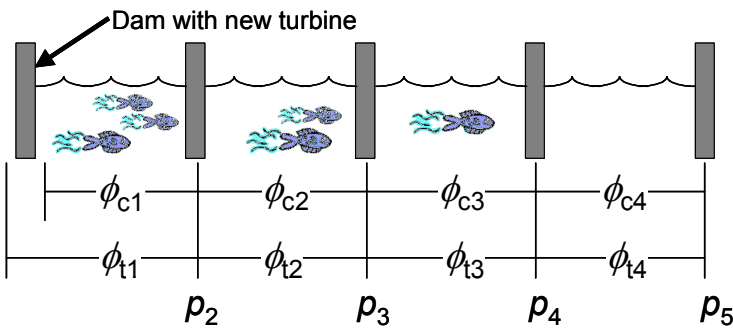


# Short Course: Design and Analysis of Mark-resight Studies with a Focus on Using Program MARK May 8-11, 2012 Utah State University

Co-sponsored by: U.S. Geological Survey (USGS) - UCFWRU,  
and Wildland Resources (WILD), Watershed Sciences (WS)



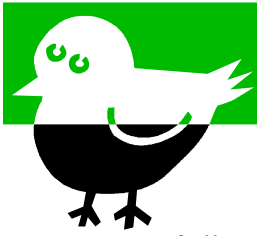
To accurately assess trends in populations or evaluate management actions, such as a new dam or habitat restoration, wildlife and fishery researchers need to accurately estimate population size, vital rates, and movement patterns.

- To this end, this introductory-level short course will introduce participants to fundamentals of:

- Essential elements in mark-resight theory, experimental design, parameter estimation, model selection, and model averaging
  - including use of simulation capabilities of Program MARK
- Special focus on occupancy models for large-scale monitoring studies
- **\*\*\*Special new focus on Barker models for PIT data collected via multiple techniques including continuously by in-stream passive antenna**

**Instructors:** Mary Conner, Research Assistant Professor USU, WATS and Robert Al-Chokhachy, Research Fisheries Biologist, USGS, NRMSC

**Program Coordinator:** Phaedra Budy, Professor, USU & Asst. Unit Leader, Fisheries, USGS - UCFWRU



**Who?** Research and management biologists and graduate students with some knowledge of mark-resight analysis and experience in conducting mark-resight field studies.

**What?** A mixture of lectures and lab exercises with evening sessions to fully cover lab exercises. We will focus on all aspects of data analysis, from formatting data for input to Program MARK, to interpretation of results. Attendees are encouraged to bring their own data for analysis, but should recognize that a thorough analysis will not be completed during the short course.

**Details:** The course fee is \$675 for the public, \$275 for UDWR employees. This fee includes admission, snacks breaks, CDROM software, materials, and USU class credit for non-students (USU students must register and pay for regular USU class credits- see below). Registration and general questions should be directed to Stephen Klobucar, [stephen.klobucar@gmail.com](mailto:stephen.klobucar@gmail.com). Contact Mary Conner, [mary.conner@usu.edu](mailto:mary.conner@usu.edu), 970-217-3404 with specific questions about course content. Registration (SEE ATTACHED REGISTRATION FORM) should be sent directly to Shauna Leavitt, ph: 435-797-7565, fax: 435-797-4025, [shauna.lee.leavitt@usu.edu](mailto:shauna.lee.leavitt@usu.edu). Class limit is 24, first come first serve.

**USU Class Credits** (2) are available by registering (in addition to registering for the short course) for the following class codes. Each section will fill at 10 participants: at the MS level -- WILD 6900 (CRN# TBA) or WATS 6900 (CRN# TBA); at the PhD level -- WILD 7900 (CRN# TBA) or WATS 7900 (CRN# TBA).

***About the instructors:** Mary received her PhD from Colorado State University in 1999, working with Gary White on elk movement, and inescapably, thoroughly learning his then nascent Program MARK. At present, she is a research assistant professor at Utah State University where she works for USFS. Mary's research and professional interests lie at the interface of empirical data and methods and the use of quantitative ecology, estimation of parameters, and population dynamics modeling. She is particularly interested in using these tools to evaluate effects of management actions in the face of temporal and/or spatial environmental variation.*

*Robert received his PhD from Utah State University in 2006, where he used in-depth mark-recapture methods to evaluate the population structure, vital rates, abundance, and trends of bull trout in Oregon. He has been involved in numerous mark-recapture research projects in both aquatic and terrestrial settings. Robert is currently a Mendenhall post-doctoral research fisheries biologist with USGS at the Northern Rocky Mountain Science Center in Bozeman, MT.*