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**Statistics Workshop on Capture-Recapture Analysis:  
Frequentist Statistical Analysis using MARK  
and  
Bayesian Statistical Analysis Using MARK and WinBUGS**

**Humboldt State University, Arcata, California  
8 am - 5 pm  
August 2 - 3, 2005**

**Professor Howard Stauffer  
Humboldt State University  
Limited to 24 registrants - Pre-registration required  
[Lodging Information](#)**

This workshop will provide a hands-on practical introduction to the analysis of marked data for natural resource scientists and managers using MARK and WinBUGS statistical software. I will illustrate both the frequentist and the Bayesian approaches to statistical inference with MARK and WinBUGS software. Registration includes lunch and breaks.

The following topics will be introduced:

- (i) Overview of marked data analysis;
- (ii) Theory - the multinomial distribution and maximum likelihood;
- (iii) Cormack-Jolly-Seber models;
- (iv) Comparison of models and model selection using AICc;
- (v) Parameter constraints using PIM's;
- (vi) Multiple group models;
- (vii) Age and cohort models;
- (viii) Linear models using the design matrix;
- (ix) Model averaging;
- (x) GOF testing;
- (xi) Bayesian statistical inference using Markov Chain Monte Carlo (MCMC);
- (x) Multi-strata models;
- (xi) Covariate models;
- (xii) Pradel models;
- (xiii) Robust models;
- (xiv) Nest survival models; and
- (xv) Occupancy models.

The instructor presents enough theory so that the hands-on practical application using the frequentist/Bayesian software MARK and Bayesian software WinBUGS will make sense. The workshop will be held in a fully-equipped computer laboratory with PC desktop computers with MARK and WinBUGS installed so that participants can fully engage in hands-on exercises illustrating the ideas.

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