

# *Catch Comparison Workshop*

*Dec. 8-9, 2004*

**W. Alton Jones Campus, University of Rhode Island**

*Wednesday December 8*

**10:00 AM Introduction to Workshop**

Workshop Objectives and Working Arrangements  
Participant Introductions

**10:15 AM The Need for Catch Comparisons: Examples**

Vessel Standardization and Calibration  
Fishery Independent Surveys  
Gear Standardization and Calibration  
Fishery Dependent Catch Adjustment Factors  
Fishery Independent Surveys

**10:30 AM Setting the Stage**

Specifying Objectives and Developing Hypotheses  
Focus on Estimating the Effect Size of a Treatment  
Calibration/Standardization Coefficients  
Overview of Hypothesis Testing  
Variables for Measurement  
Catch in Weight and Numbers  
Size Composition  
Cluster Sampling for Biological Data  
Subsampling Issues  
Expansion Factors  
Selectivity and Retention Curves  
Descriptive Statistics and Data Exploration  
Coping with Null Hauls  
Coping with Missing Data  
Designing the Experiment  
Spatial and Temporal Considerations in Design  
Spatial Heterogeneity  
Diurnal Differences  
Paired Haul Design  
Side by Side Comparisons  
Randomized Complete Block Design  
Ad Hoc Comparisons

Power Analysis and Target Levels of Precision  
Using Pilot Studies or Previous Work

**12:00 PM**    **Lunch**

**1:00 PM**    **Analysis of Comparative Fishing Trials**

Estimating the Effect Size and its Variance  
Ratio Estimator  
    Analytical Estimator  
        Assumptions  
    Bootstrap Estimator  
        Assumptions  
Regression Estimator  
    Model I Regression  
        Assumptions  
    Model II Regression  
        Assumptions  
Analysis of Variance  
    Standardization and Model Coefficients  
        Assumptions  
MetaAnalysis of Catch Data

**3:00 PM**    **Break**

**3:30 PM**    **Analysis of Comparative Fishing Trials *Continued***

Hypothesis Testing  
    Concepts of Likelihood and Quasi-Likelihood  
Parametric Tests  
    Testing Assumptions  
        Checking Distributional Assumptions  
        Checking Variances  
Non-Parametric Tests  
    The Rank Transform  
Randomization Tests  
Using Covariates

**5:00 PM**    **Dinner**

**7:00 PM**    **Case Study:**  
***Trawl Warps Revisited: Piecing Together Evidence from Multiple Sources***

***Thursday December 9***

**9:00 AM      Analysis of Size Composition Data**

Comparing Size Compositions  
    Some Implications of Cluster Sampling  
        Effective Sample Size  
    Kolmogorov-Smirnov Test  
        Limitations  
Absolute Selectivity  
  
Relative Selectivity

**10:30 AM      Break**

**10:45 PM      Bayesian Perspective on Catch Comparison Analyses**

Bayesian and Frequentist Perspectives  
    Prior Distributions  
        Uniform Priors  
        Informative Priors  
            Using Previous Information  
    Posterior Distributions and Measuring Effect Size

**12:00 PM      Lunch**

**1:00 PM      Participant Roundtable**

Help with Designing Your Experiment or Analyzing Your Data  
  
    Designing an Upcoming Experiment?  
    Trouble Analyzing an Existing Data Set?  
  
Open Forum for Discussing Workshop Concepts

**2:45 PM      Workshop Closing Remarks and Discussion of Future Plans**

**3:00 PM      Adjourn**