# SCIENTIFIC AND STATISTICAL COMMITTEE REPORT ON SWORDFISH MANAGEMENT AND MONITORING PLAN HARDCAPS

Dr. Stephen Stohs (Southwest Fisheries Science Center) presented the results of the "Ecological Applications" manuscript (Martin et al. 2015) that evaluated an alternative Bayesian method to estimate bycatch rates for rare event bycatch species. The manuscript presents a model-based approach to better characterize bycatch rates inferred from observed bycatch counts, as well as to predict unobserved bycatch counts or rates for unobserved fishing effort. The Scientific and Statistical Committee (SSC) concludes that the approach developed here is an improvement over existing ratio estimators, particularly in the face of less than 100 percent observer coverage in this fishery. However, the SSC highlighted two concerns regarding specific elements of the modeling: 1) the inability to address potential behavioral changes of fishermen in response to observer coverage (also recognized to be a concern with the existing method), and 2) the potential to underestimate uncertainty for species that occur in aggregations (as the current model assumes that encounters are independent events).

With respect to the question of an appropriate level of observer coverage in this fishery, the SSC notes that the Bayesian framework could be used to conduct an analysis evaluating observer coverage. However, that analysis will require information on bycatch rates and fisheries effort, total bycatch limits (hard caps), and acceptable threshold probabilities of exceeding those limits.

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