**Expected Improvements in Precision when Integrating Opportunistic Close-Kin Mark-Recapture Data into Fisheries Stock Assessments**

Nicholas Fisch1

1Pacific Biological Station, Fisheries and Oceans Canada, Nanaimo, British Columbia, Canada

Abstract

Introduction

Here I simply show what one should expect in terms of improvements in model performance if close-kin mark-recapture (CKMR) data is collected and integrated within the stock assessment

The precision of then normal CKMR estimator is reasonably standard, however the information it provides to fisheries assessment is a little more complicated given all of the different data sources.

We know it will depend on N.

Methods

I do not distinguish “juveniles” and “adults” as I am modeling an age structured population with proportional maturity at age. Thus any individual whose age difference with another (backdated to year of birth) places them in a potentially mature age (at the year of birth of younger individual) has the potential to be a parent of the individual. I make comparisons between “younger” and “older” individuals in reference to both potential POPs and HSPs (rather than say, juveniles and adults). Although this will be moot given the probability should be zero if a potential parent is not mature at year of youngers birth.

Simulator

Here show how the data were simulated

Estimator

Here the CKMR equations in the assessment model.

Acknowledgements

References