Improving Catch Estimation Methods in Sparsely Sampled Mixed-Stock Fisheries.

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Introduction

- I am Nick
- describe the california spp comps. port sampling data for modeling
- describe our modeling efforts for estimating ssp comps.

MCATS in Time

- **Top Panel:** Number of samples in rockfish market categories (1978-2015)
    - Colors represent different market categories
    - Thickness shows the number of samples
- **Bottom Panel:** Number of rockfish market categories
    - Count the colors
    - ~20 mcats in the late 70s
    - ~50 mcats in the recent times
- **Middle Panel:** Average number of samples per stratum
    - Find samples for each stratum (mcat, gear, port, year, qtr)
    - Average them
- 1978-1982
- 1983-1990

78-82 Bars

- **Top Panel:**
  - For each market category
    * Proportion landings by weight (blue)
    * Proportion samples by # (red)

- **Bottom Panel:** Aggregated Species Compositions
  - Colors represent species
  - Number above is the # species present
  - Hatching is MCAT nominal species

- Sampling Opportunistic
  - Sampling co-occurs with landings
  - Often as more species are present there are more samples
  - This is lucky for modeling
    * Most landings are modeled
      · 78-82: 96.8%
      · 83-90: 98.3%

83-90 Bars

Likelihood Forms

Likelihood Graphs

Likelihood Table

Beta-Binomial Model

Time Models

Priors

Beta-Binomial Fits

LUNCH

Posterior Predictive Species Comps.

Sinlge Quarter Hindcast

78-82 Prediction

83-90 Prediction

Speciating Landings

BMA Story

BMA Math

78-82 BMA Results

83-90 BMA Results

Conclusions

91-99 Bars

00-15 Bars

ρ Posterior