Design of Fishing Derbies for use in Recreational Fisheries Management

# Abstract

# Introduction

* See start of write-up in markdown doc.
* Table on pro’s / limitations of fishery dependent / independent data. See Fishery\_survey\_table.docx
  + Descriptions of what general data each fishery independent survey method brings to stock assessment
  + Contrast with how these data may be biased if collected from fishery dependent methods (specifically Angler atlas).

# Methods

Bridge between fishery dependent and fishery independent data

* How can fishing derbies be designed too minimize bias or allow for bias correction?
  + Common gear types; restricted effort, stratification.
* Could use a simulation approach (because it’s easier than analytical solutions) to demonstrate added precision of adding controlled fishery dependent data (possibly be called hybrid-data?)

Results

* Simulation?

Discussion

Ways to control for this

- Structure surveys via derbies

- Model individual fisher behaviour (maybe we could use age for experience?)

- Use derbies as a way to build catchability effectiveness of gear types?

How this paper should proceed

- Simulation?

- make a table of warts of recreational fishery data

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Here are two sample references: @Feynman1963118 [@Dirac1953888].

#Bridge between fishery dependent and fishery independent data

# Structure of the paper

# Recreational fishing derbies Angling data alone

- truncated measure of size structure

- relative abundance

- Table of common fishery metrics - fishery independent - fishery independent

limitations of fish independent

- expensive, high effort

limitations of fishery dependent

- more effort

Fixed gear

- choice of single or multiple lures

increased power using both methods

#Confounding factors

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## Mark recapture monitoring