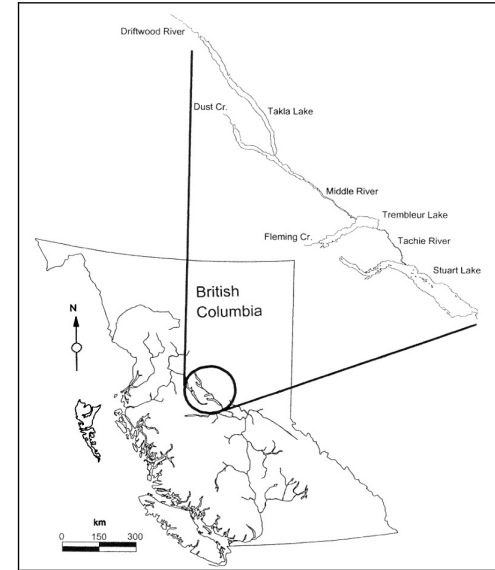


State of the Stock 2023

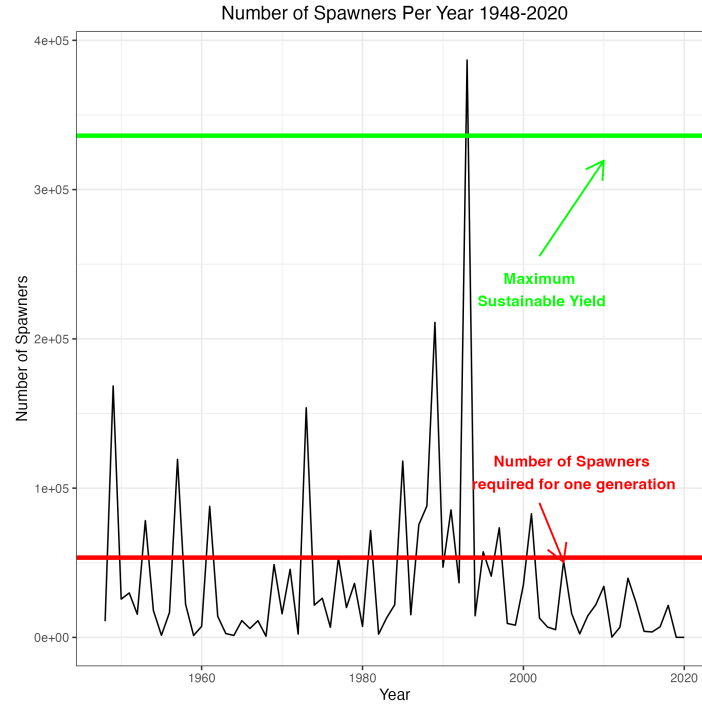
Lukas Van Riel, Effie Gao, Jesus Pascual, Jack A.
Goldman

Fraser River Sockeye Fishery

- 2019 and 2020 lowest recorded Fraser Sockeye return ever
- Management plans led to reduced fishing opportunities
- **Early Stuart**
 - fish that return to spawn in early summer
- 2019 forecast found evidence of population declines
- 2021 forecast suggest the stock will not reach recovery target



State of the population



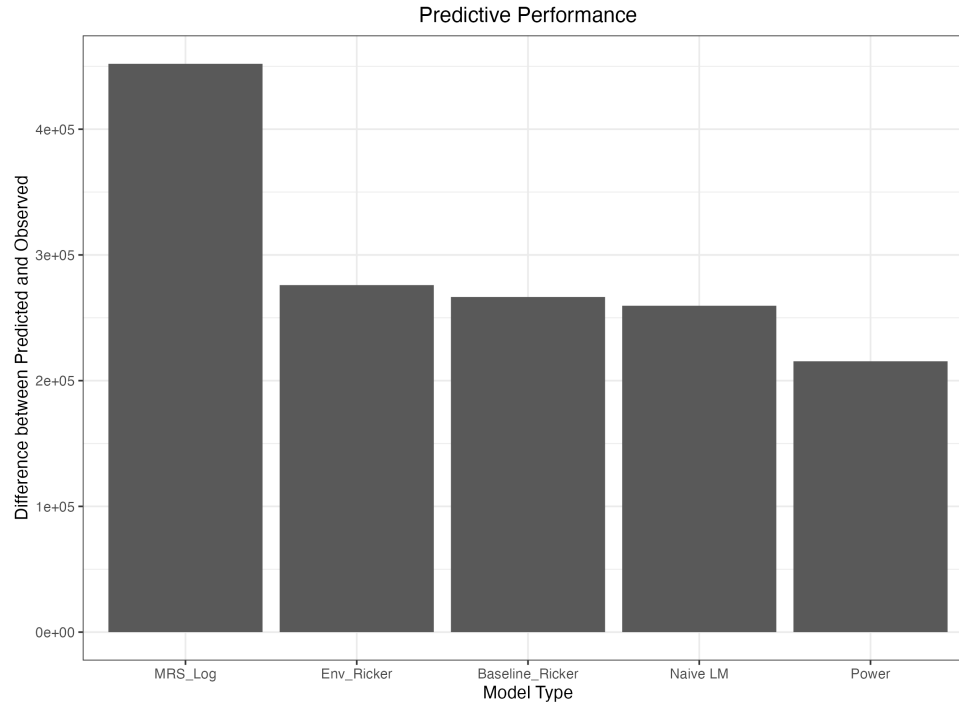
Goals

- Previous forecasting methods are old and out of date
- **Goal:** develop new forecasting methods and evaluate performance

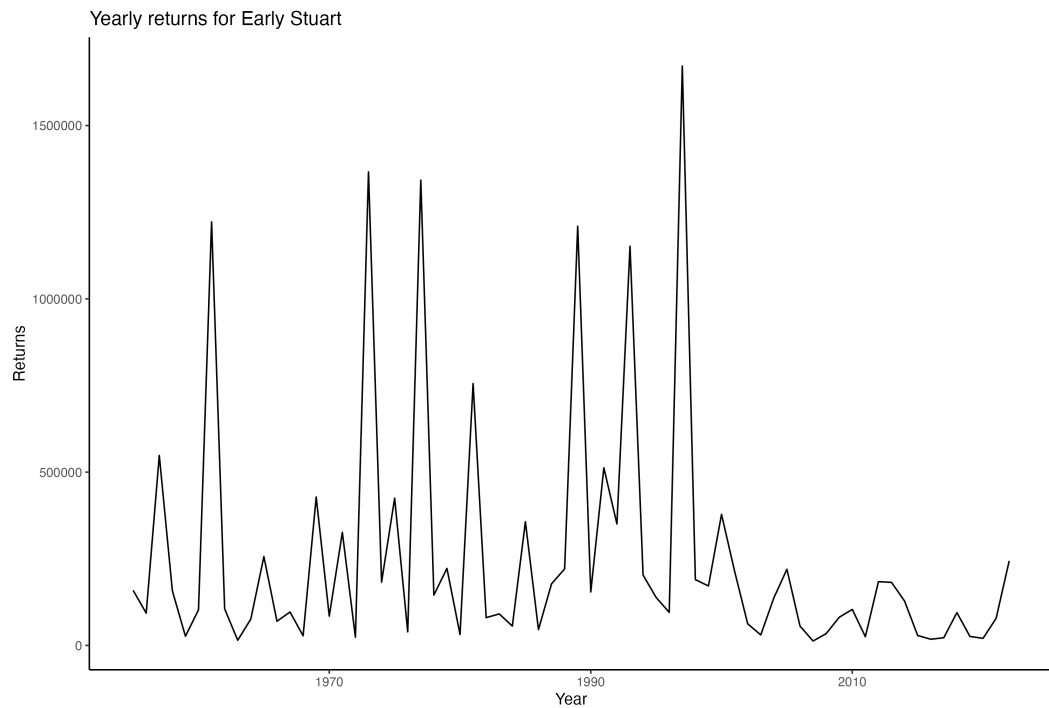
Candidate models

- Five models:
 - Basic Ricker
 - Ricker with Env. Covariate
 - Power Model
 - Naive
 - Naive Linear Model
- We compared the performance of the models using RMSE

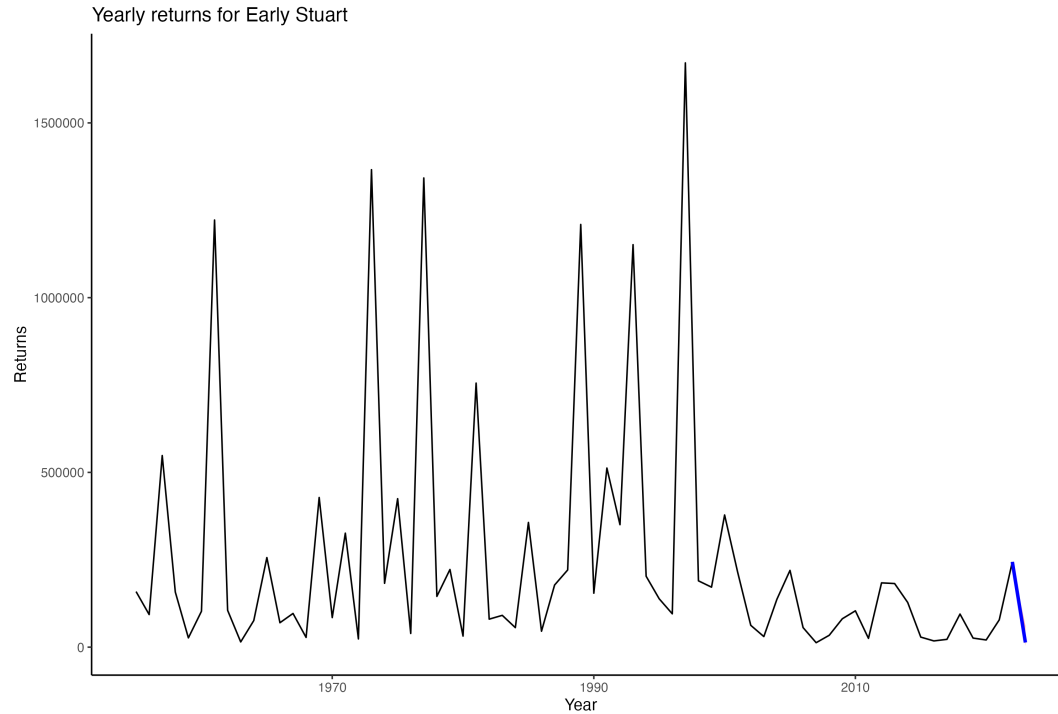
Model comparisons



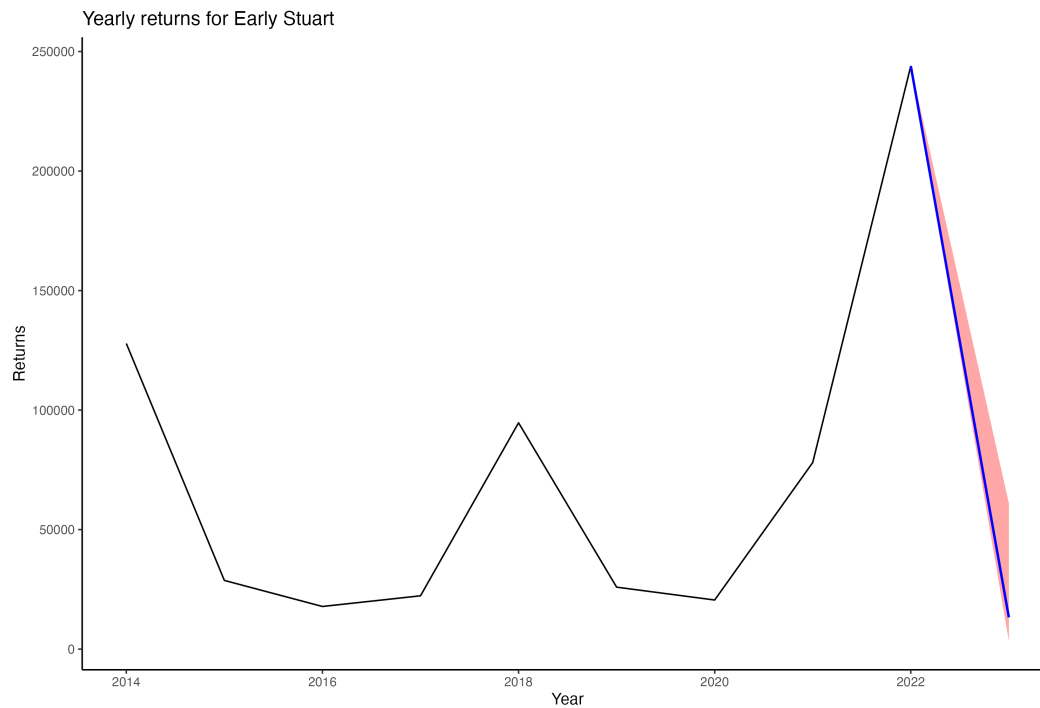
Proof of Concept Forecast



Proof of Concept Forecast

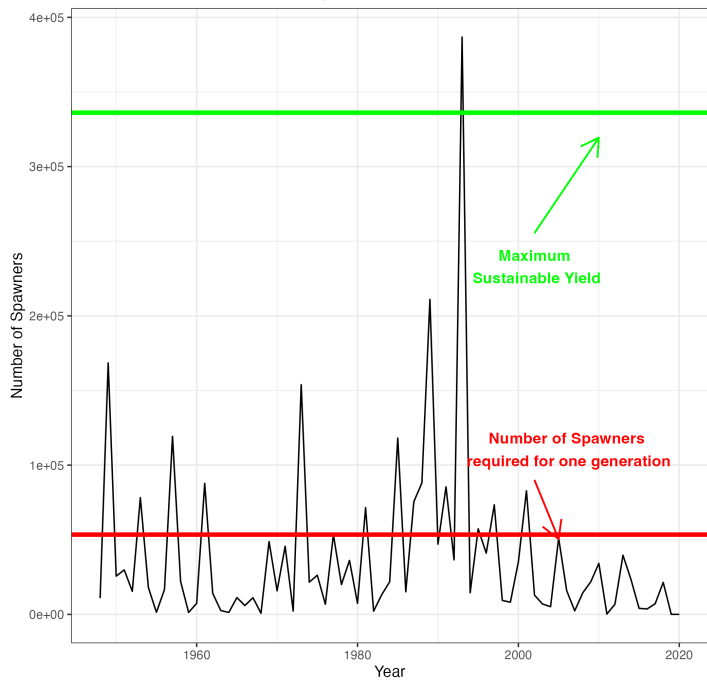


Proof of Concept Forecast

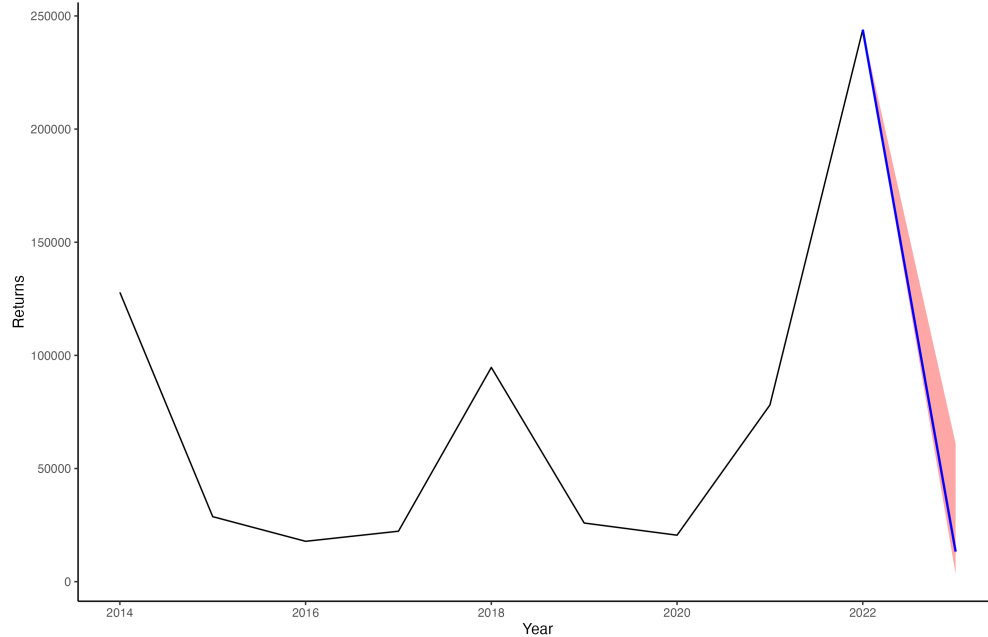


Recommendation

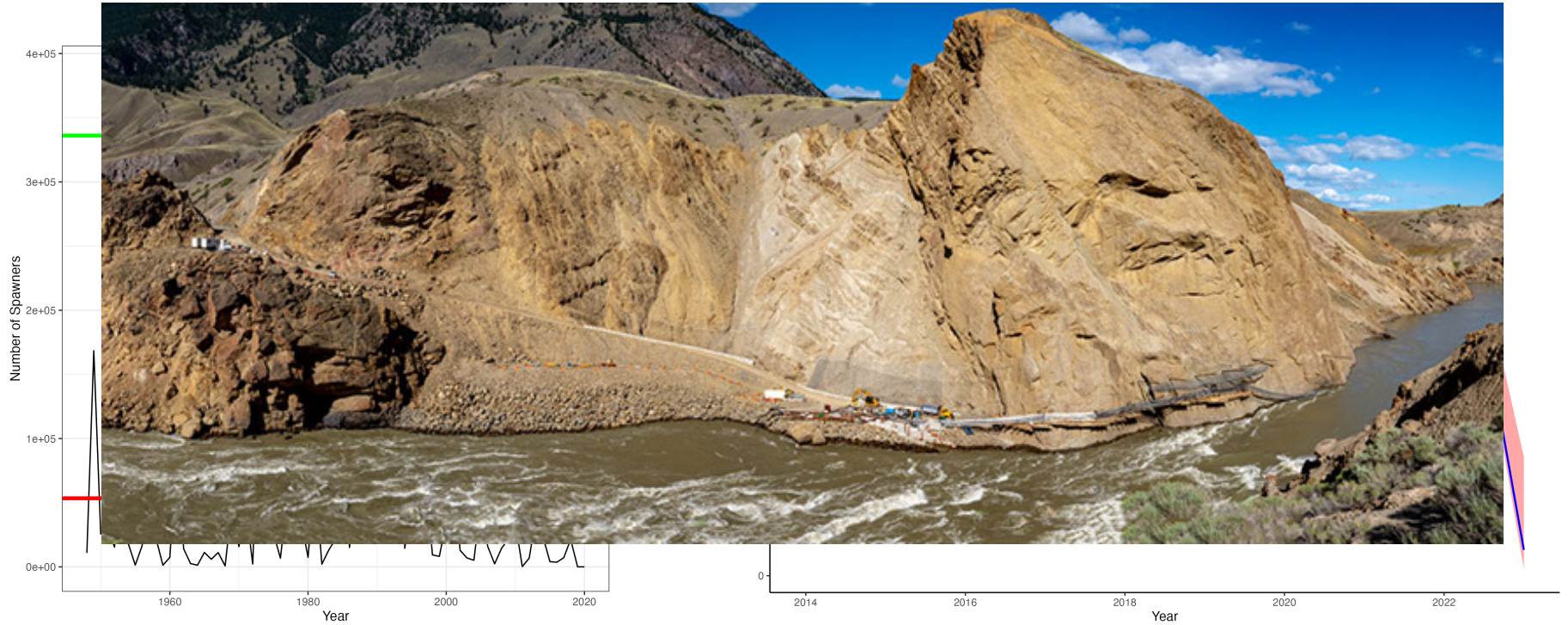
Number of Spawners Per Year 1948-2020



Yearly returns for Early Stuart



Recommendation



Thank you