ForecastR use and deployment

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History

- Model improvement funds with 2009 PST
  - Base period re-calibration
  - Maturation rate improvements
  - Forecasting
- Original contract development and award-from model improvement funds
  - Gehment consulting
  - Southern Boundary Grant-later iterations
- Small group within CTC
  - Terminal management agencies charged with forecasting Chinook

Review of Methods for Forecasting Chinook Salmon Abundance in the Pacific Salmon Treaty Areas. Report to the Pacific Salmon Commission.

Randall M. Peterman
Ray Beamesderfer
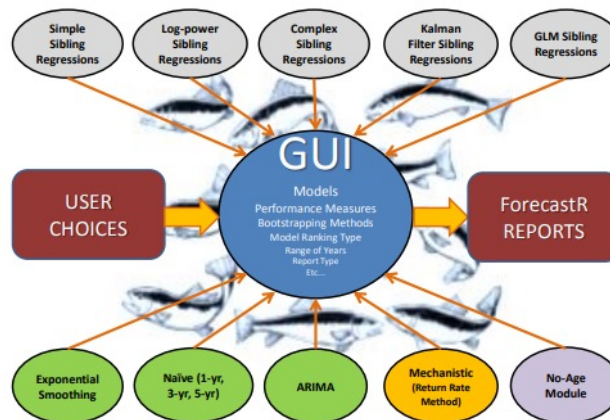Brian Bue

November 2016

Current users

- Oregon Coastal Fall Chinook
  - Nehalem to Elk
- Canada
  - All PSC managed Chinook stocks

Data loading-Shiny app use

- https://psc1.shinyapps.io/ForecastR/

- https://github.com/SalmonForecastR/ForecastR-Releases/wiki

- CSV file samples
- Serape template

ForecastR: tools to automate forecasting procedures for salmonid terminal run and escapement

Final Report submitted to the Southern Boundary Restoration and Enhancement Fund, Pacific Salmon Commission, Vancouver BC

Vélez-Espino, L.A.[1], Parken, C.K.[2], Clemons, E.R.[3], Peterson, R.[4], Ryding, K.[5], Folkes, M.[1], and Pestal, G.[6]

1   Fisheries and Oceans Canada, Pacific Biological Station, Nanaimo BC
2   Fisheries and Oceans Canada, Kamloops BC
3   Oregon Department of Fish and Wildlife, Newport, OR
4   Alaska Department of Fish and Game, Juneau, AK
5   Washington Department of Fish and Wildlife, Olympia, WA
6   SOLV Consulting Ltd.

March, 2019

Version 2.1: 2024-04-23

You are working with an updated version of the *second* full release of the SalmonForecastR App. The ForecastR team is trying to address quirks and bugs as they are found by users like you.

To check a list of know bugs/issues with this prototype, and to add any new bugs/issues with this prototype, go to **this github thread**

For more information about the app, check the *Help* and *About* tabs.

Important Reminders

- Legal: The *ForecastR* app and package are being shared as free, open-source products without any warranties or liabilities. For details, check the GNU General Public License v3.0
- Statistical: *ForecastR* doesn't have a quality-control step evaluating the data you feed in. It can't decide which candidate models make sense for your data set, and which candidate forecast is the most appropriate. The design focus has been on automating the number-crunching steps to free up analysts' time for exploration and interpretation.

What's New?

Version 2.1: Spring 2024 Update ——————————————

The only revision in this update deals with rounding of the abundance input data. Some models (e.g., complex sibling regression) can crash if input variables like escapement or terminal run included values with decimals. The new default is to round these numbers when inputs are being read in, but for some cases (e.g., time series model of survival rates) the rounding needs to be turned off on **Setting Up/Data Treatment Settings**.

Version 2: 2023 Update ——————————————

This round of work focused on improving the user experience, but we also added a new type of forecasting model to both the R package and the app:

- *NoAgeCovar*: For data sets without age classes (e.g., only have total run or escapement) that have covariates, fit generalized linear models (GLM) and select the best combination of covariates.

App improvements since the last major release include:
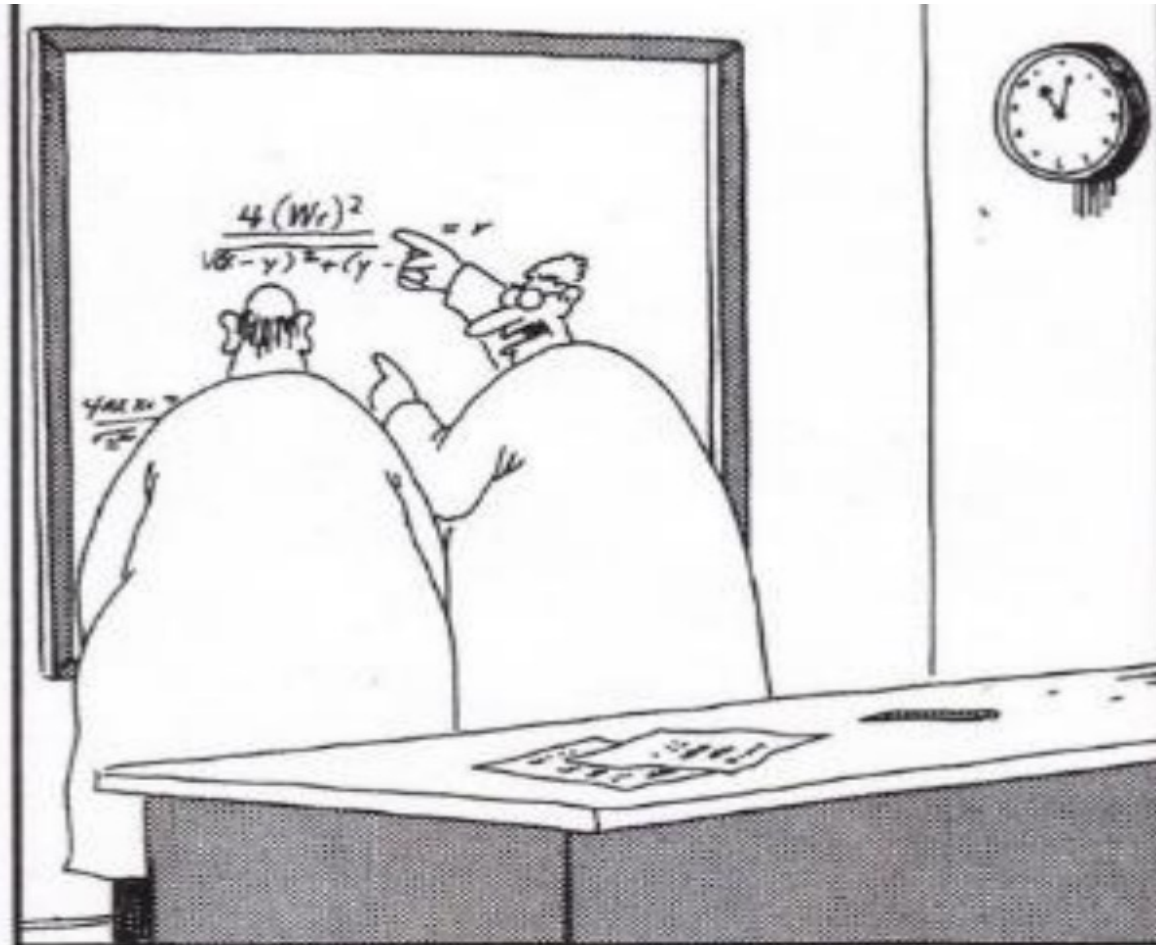
What to do about "0"

- May have or may yet have this as topic of discussion
- Can't have "0"s in input data

Running ForecastR

- Left to Right

- Stopwatch and run timing
  - Crashing/hanging/warning signs
  - Timeout issues with large # of iterations-dependent on bandwidth available

Interpreting ForecastR results/output

- Performance measures
- Model Ranking

"Yes, yes, I *know* that, Sidney ... *every*body knows *that!* ... But look: Four wrongs *squared*, minus two wrongs to the fourth power, divided by this formula, *do* make a right."