

Science, Service, Stewardship



2015 Assessment Update: Atlantic Halibut

Dan Hennen

NEFSC

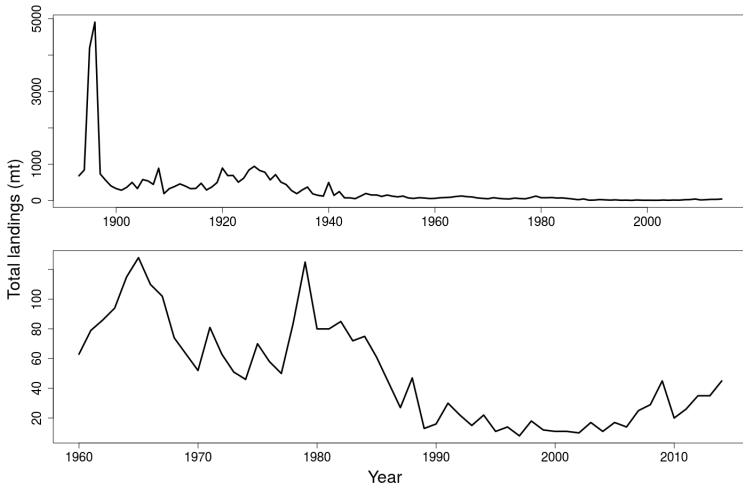
September 15, 2015

NOAA

**NOAA
FISHERIES
SERVICE**

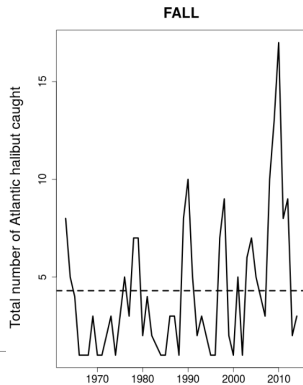
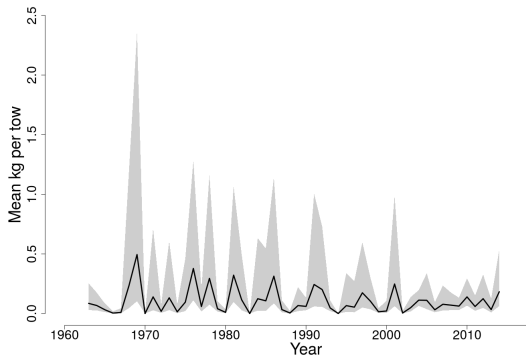


Comes from commercial landings



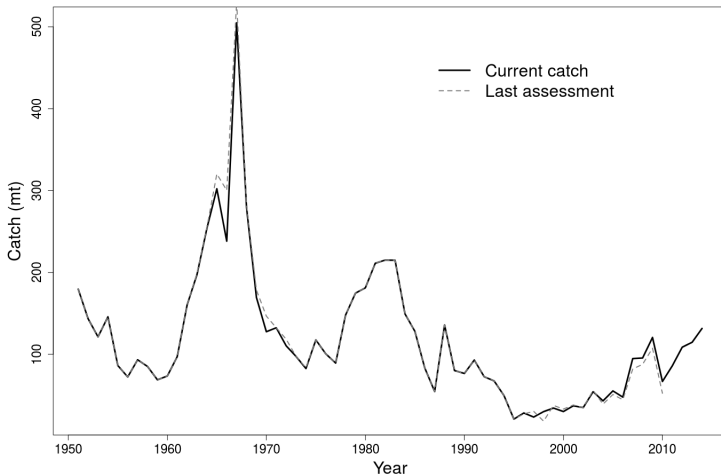


NEFSC Fall survey





Average discards updated, high seas catch removed

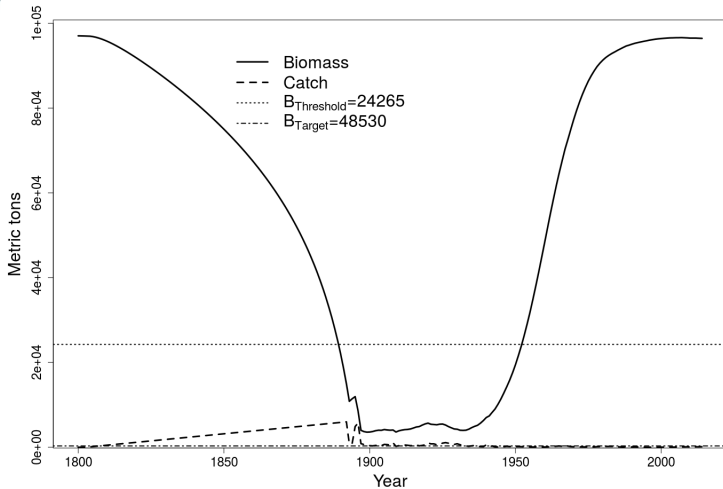




"Replacement Yield" model

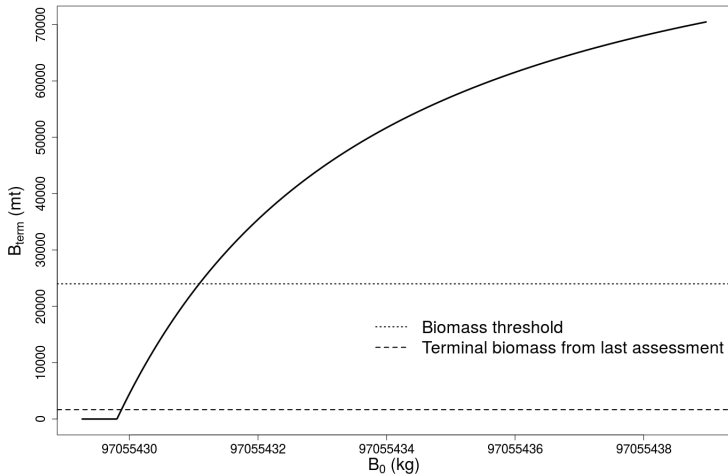
- Surplus production style population dynamics
- Intrinsic growth rate from YPR
($r = 2 * F_{0.1} = 2 * F_{MSY(proxy)}$)
- Estimates one parameter (B_0) tuned to survey index

!?



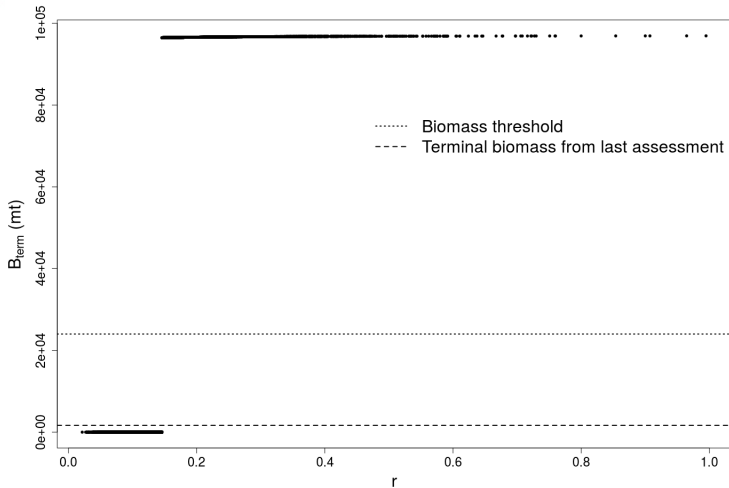


Very sensitive to initial conditions



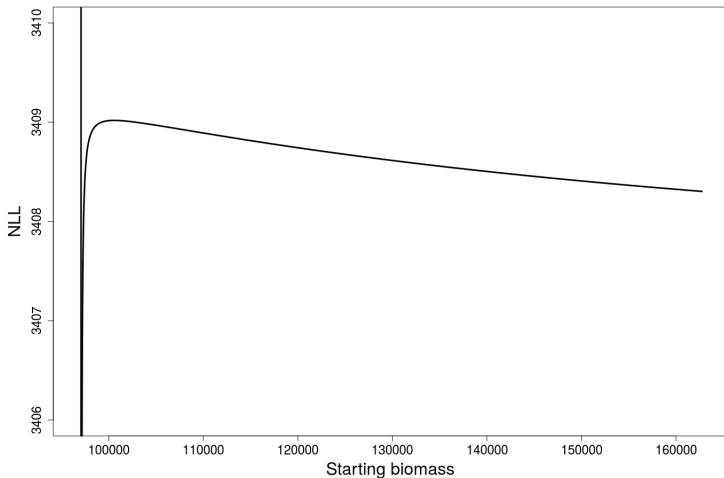


Sensitive to growth rate as well





Likelihood profile over B_0





Problems with the current model (uncertainties)

- Violation of assumptions (e.g. immigration, surplus production does not depend on size composition, time-invariant r)
- Equilibrium model with long time series, 1 way trip, and low $F = \text{yuck!}$
- Doesn't leverage all available information



What now?

- Model provides no useful information, but
- No evidence things are getting worse
- Recent avg. catch or status quo (current rule is one fish per trip)
- **BENCHMARK!**



Stock status was overfished, overfishing not occurring, but is now unknown

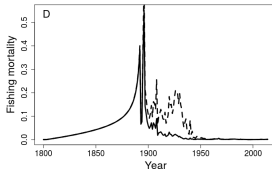
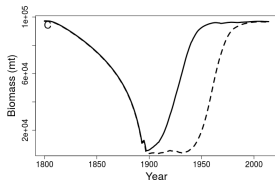
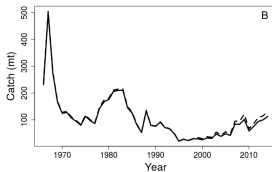
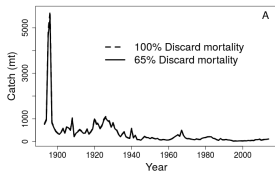
The End



- If metapopulation - collaborate with CA
- MSE
- BENCHMARK!



Sensitivity to discard mortality





Compare solutions

