Projections via proj.exe

The basic sablefish model runs projections internally, but they are slightly different than the “official” proj.exe in 2 ways. 1) It uses lognormal recruitment instead of inverse-gaussian draws, and 2) the catch estimates used in that projection will tend to be slightly different than those manually input into the proj.exe. The results in year 1 tends to be less than 0.1% different, the next year tends to be a bit more because of catch assumptions, but still small.

Projection model develops a distribution for recruitment based on 1000 inverse-gaussian draws based on the input recruitment values, this is used to estimate uncertainty in all parameters (i.e., conf intervals based on the 1000 draws), but then use the mean from the distribution as the final values for management (i.e., mean ABC from the 1000 draws)

**\*The SSB values and 2023 max ABC in the summary table use the specified catch projections to develop ‘more realistic’ management advice based on what is likely to be harvested**

**\*Specified catch is based on the most recent year catch/ABC (in 2021 it was ~66%), this ratio is then multiplied by max ABC in future years to determine specified catch**

**\*Scenario 2 is either specified catch or author ABC (if suggesting below max ABC based on risk table)**

Here are the steps that I use to run an individual projection model

**Files in data folder (these will all be edited):**

Goa\_sable.dat (just proj.dat)

Goa\_sable\_max.dat (just proj.dat)

Goa\_sable\_max\_spcat.dat (specified catch for first run)

Goa\_sable\_spcat.dat (specified catch for scenario that uses the yield ratio to determine ‘estimated catches’)

**Files in the main folder:**

Main program files (don’t change)

A1.awk

Awk.exe

Awk1.bat

Libiconv2.dll

Libintl3.dll

Main.exe

Main.tpl

Run.bat

Dat Files to alter

Setup.dat (just update current year)

Tacpar.dat (do not alter, just used for multispecies stuff with BS pollock…)

Results File

Sable\_Projections\_2021.xlsx (where copy results into to get final tables)

1. Locate proj.dat in the sablefish model run you are utilizing
2. Open proj.dat with a text editor, Ctrl-A, Ctrl-C
3. Find folder Projections/data
4. Open goa\_sable\_max.dat, Ctrl-A, Ctrl-V, save
   1. Open goa\_sable.dat, Ctrl-A, Ctrl-V, save
5. Open goa\_sable\_max\_spcat.dat
   1. Scroll to bottom, comment out last year, add current year and current estimate of this year’s catch in kt, take directly from the .dat file (**make sure to get total catch not just fixed gear**)
   2. Save and exit
6. Return to Projections folder
7. Open setup.dat
8. Scroll to bottom
9. Change last entry, begin\_year to current year
10. Save and close
11. Type in CMD prompt (type cmd in folder directory and press enter to get cmd prompt to open in that fodler) in that directory “run goa\_sable\_max”
12. Go into new directory goa\_sable\_max\_out
13. Open percentiles.out in a text editor, Ctrl-A, Ctrl-C
14. Go to Spreadsheet Table 3.11 Sable\_Projections\_YEAR.xlsx (ie previous year projections spreadsheet)
    * + - 1. Go to summary table and copy and paste cols AN and AO (paste value) to cols AL and AM (last years projection results move to last year columns)
15. In cell A1, paste the percentiles.out data, you’ll need to do text-to-columns the first time
16. In Summary table on the right make sure the right numbers are in the columns for AL and AM from last year… the ABC (i.e., that pasted over from adjacent columns in step 14a)
17. In cells AH17:AH19 update years to reflect curr\_year : curr\_year+2 (i.e., terminal year to end of ABC specification year…usually 2 year projection)
18. The associated catch (AI17:Ai19) should now reflect the terminal year actual catch, and for future years the harvest ratio in the terminal year (i.e., proportioin of quota harvested in terminal assessment year) multiplied by the ABC---these will be used for specified catch projections that are meant to give a more accurate portrayal of future dynamics by accounting for the amount of the quota likely to be harvested based on recent dynamics
19. Copy the years and catches in cells AH17:AI19 (projected catches) which will be pasted in the specified catch projection .dat file
20. Go back to projections/data folder
21. Open goa\_sable\_spcat.dat
22. Put these three years of catches at the bottom, # comment out old ones or delete and save
23. Go back to command prompt in projections dir and “run goa\_sable”
24. Go to goa\_sable\_out
25. Open percentiles.out in a text editor, Ctrl-A, Ctrl-C
26. Go to spreadsheet cell M1, Ctrl-V
27. Go to goa\_sable\_out
28. Open bigsum.dat in a text editor, Ctrl-A, Ctrl-C
29. Go back to spreadsheet cell Y1, Ctrl-V
30. Sort columnsY-AG, by Alt and Year (smallest to largest)
31. Summary table values should be maybe right in the projection years
32. Tables to the right of summary are for scenarios in Table 3.11
33. Should be done…
34. Run other scenarios by making new dat files from the four base files here… so copy goa\_sable.dat to sable\_16\_5.dat and goa\_sable\_spcat.dat to sable\_16\_5\_spcat.dat… etc. and make a new tab on the spreadsheet and repeat above procedures.