

# Release notes for Stock Synthesis 3.30.22

Oct 31, 2023

Greetings Stock Synthesis Users,

[Release 3.30.22 of Stock Synthesis](#) is now available. Our development team continues to advance our use of GitHub features. Notably, you can now view the [change log](#) as a GitHub project board incorporating links to the list of issues worked for this release. Find more information at the GitHub SS3 [readme](#). The most notable changes in 3.30.22 are:

- Introduction of the platoon ratio as a parameter rather than an assigned constant. Uncertain about what value to assign to this factor has impeded routine adoption of the platoon approach. Our recent investigations show that a reasonable default is 0.75 with a range of 0.5 to 2.0, where higher values create more overlap between the platoons. We also found that with informative data (time series of size and age data showing decline in mean size-at-age over time), the factor becomes estimable. The biggest impact of platoons will be seen where there is high  $F$ , steep size-selectivity, and high variability in size-at-age. Incorporation of the platoon feature in your assessments may result in improved estimates of  $L_{\infty}$  and the degree of domed selectivity. We highly encourage you to try it out and report to us your experience.
- Revision of the controls for the forecast year ranges. This revision provides much improved capability for averaging biology and other factors over a range of years rather than continuing them from the time series into the forecast as a time-varying factor. See issue #493
- Numerous small improvements in the text of warnings and control.ss\_new labels to help users understand usage of model features.
- Added information to some tables in report.sso.
- The relationship between the fleet-specific vectors of  $F$ -at-age and the single value of  $F_{std}$  continues to be challenging to communicate. We hope the revised text in starter.ss\_new and the user manual will help. Also examine the values as reported in the table: EXPLOITATION report:14 which shows  $F_{std}$ , annual\_ $F$ , and fleet-specific apical  $F$ . Finally, even apical\_ $F$  benefits from clarification. It is the  $F$  for the age with selectivity = 1.0, but with size-selectivity and some age selectivity options, all ages may have selectivity < 1.0. To help, we have added a table of “maximum\_ASEL2” to show the maximum derived age selectivity for each fleet. It is found immediately after the report: AGE\_SELECT report:32.
- SS3 is now compiled with ADMB 13.1. We highly recommend that you study the new features of ADMB (listed [here](#)) so you can use its advanced command line features. In particular, the -hess\_step command lets ADMB use the inverse Hessian to make additional iterations to achieve exact convergence, and the -nuts command enables more efficient MCMC sampling.
- Introduction of a [github discussion board](#). We encourage you to follow it to stay up-to-date with discussions about features and to ask questions.

- Team Member retirement: **Neal Schindler** has retired. His big contribution to the SS3 project was the SSI interface which was built using Qt. He also made the SS3 tpl code base much more consistent in its formatting.. The SSI continues to be available, but we will not be continuing development of the SSI due to continued advancements with the ss\_write features in r4ss and the new tool in the next bullet.
- Jason Cope has made great strides with his [Stock Assessment Continuum Tool](#) which provides a R Shiny app to access most common SS3 and r4ss features.

There are no mandatory input changes. As always, we recommend that you update to the latest version of Stock Synthesis to take advantage of augmentations and bug fixes. Updating to the newest version, even if no new features pertain to your model, ensures that you will see new tips and warnings and the \*.ss\_new files created whenever you do a run contain updated notes on what we consider to be good practices with respect to SS3.

**Change Log:** Now directly linked to the included issues on GitHub.

**VLAB updates:** No updates at VLAB as we are migrating more resources to GitHub. See the [Stock Synthesis homepage](#) for the latest links. The message forum at VLAB is still a good way to post inquiries.

**GUI - Stock Synthesis Interface (SSI) updates:** The [GUI](#) has been updated to accommodate changes for this release of Stock Synthesis. This is the last planned update to the SSI.

**ss3sim updates:** See the [ss3sim vignettes](#) for information on getting started.

**r4ss updates:** r4ss has been updated to maintain compatibility with Stock Synthesis 3.30.22.

**SS3 User Manual:** Most documentation for Stock Synthesis can be viewed at <https://nmfs-stock-synthesis.github.io/doc/>. In particular, there is now an [html version of the user manual](#).

**Contact us:** Please do not hesitate to report bugs, ask a question about SS3, or request a feature. Contact the SS3 development team by opening an [issue](#) (for those with GitHub accounts), posting on the VLAB [forums](#), or emailing [nmfs.stock.synthesis@noaa.gov](mailto:nmfs.stock.synthesis@noaa.gov).