Release notes for Stock Synthesis 3.30.21

Feb 10, 2023

Greetings Stock Synthesis Users,

A new [release of Stock Synthesis](#) is now available. The most notable changes in 3.30.21 are:

- Introduction of the capability to have a different Dirichlet-multinomial parameter for discard length comp rather than sharing the same parameter as retained catch length comp. We did not extend this split capability to age composition or generalized size composition as it seemed unlikely that differential weighting of comps would be needed in those cases. This change comes with a new input structure only if you are using the new feature. With the new input approach we did not keep a way to share the same parameter for both discard and retained and combined comps. While that would have given more backward compatibility, it is illogical to think that discard and retained catch would have the same sampling characteristics.
- SS3 is now compiled with ADMB 13.1. Note that SS3.30.20 used ADMB 13.0 which made several helpful revisions to the console output and we made corresponding revisions to the SS3 specific console output. 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.
- 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](#).
- New Team Member: Elizabeth Gugliotti has joined the SS3 team. She brings great skills in R and Git to continue our enhancement of the SS3 ecosystem of tools.
- Unfortunately, we did not get to making [Multivariate Tweedie](#) composition weighting operational, but it is close.
- Upcoming: Following the CAPAM workshop on good practices, I've begun thinking that the SS3 philosophy of great flexibility in options needs to be tempered with a good practices approach. The old options won't disappear, but more suggestions will appear.

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 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.

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

r4ss updates: r4ss has been updated to maintain compatibility with Stock Synthesis 3.30.21.

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 [forums](#), or emailing nmfs.stock.synthesis@noaa.gov.