Sensitivity analyses summary.

	Author	Date	Folder[a]	Script model[b]	Script results[b]	Base model[c]	New model[c]	Object	Features
0. Transition									
Item 0.0	The team	2023-02-17 09:09:21	model/2013_SST_SSV3_30_21	v324_v330_transition.R	2013_v324_v330_bridge_comparison.R	13.sq	23.sq.fixQ	Bridging	
Item 0.1	Matthieu VERON	2023-03-14 20:38:28	0.1_Bridging_models	0.1_Bridging_models_Analyses.R	0.1_Bridging_models_Outputs.R	23.sq.fixQ	23.sq.fix	All Param fixed	Revisiting the transition of the 2013 model. For the transition, the model created was based on the 2013 model except that the catchability parameters were set to the “estimated” value from the 2013 assessment (which used a floating approach by setting Q as a scaling factor such that the estimate is median unbiased). Three models are developed here: i) a model where all the parameters are fixed to their estimated value from the 2013 assessment, ii) a second model which consider a floating approach for Q (i.e., an analytical solution is used and Q is not estimated as an active parameter) and iii) a third model where all parameters are freely estimated (Q included).
	Matthieu VERON	2023-03-14 20:38:28	0.1_Bridging_models	0.1_Bridging_models_Analyses.R	0.1_Bridging_models_Outputs.R	23.sq.fixQ	23.sq.floatQ	Floating Q	
	Matthieu VERON	2023-03-14 20:38:28	0.1_Bridging_models	0.1_Bridging_models_Analyses.R	0.1_Bridging_models_Outputs.R	23.sq.fixQ	23.sq.est	All Param estimated	
Item 0.2	Team Thornyheads	2023-04-05 10:48:24	0.2_Update_Data	0.2_Update_Data_Analyses.R	0.2_Update_Data_Outputs.R	23.sq.floatQ	23.land.update	Update landings	Updating the data sets from the 2013 assessment to the 2023 assessment without changing the structural assumptions. The data sets that are updated as part of this analysis include fishery landings (using the status quo four fleet structure), discards, new geostatistical indices from glmTMB, composition data, and biological parameters. The growth parameters are new and are based on Butler data. Maturity parameters are new and based on Melissa Head's data. Fecundity parameters are new and based on Cooper et al 2005. Natural mortality is new and based on Hamel and Cope 2022 longevity estimator. These updates are collectively considered "best avail science."
	Team Thornyheads	2023-04-05 10:48:24	0.2_Update_Data	0.2_Update_Data_Analyses.R	0.2_Update_Data_Outputs.R	23.land.update	23.disc.update	Updates discard rates	
	Team Thornyheads	2023-04-05 10:48:24	0.2_Update_Data	0.2_Update_Data_Analyses.R	0.2_Update_Data_Outputs.R	23.disc.update	23.surv_geo.update	Update survey geostat indices	
	Team Thornyheads	2023-04-05 10:48:24	0.2_Update_Data	0.2_Update_Data_Analyses.R	0.2_Update_Data_Outputs.R	23.surv_geo.update	23.lcs_survey.update	Update survey length comps	
	Team Thornyheads	2023-04-05 10:48:24	0.2_Update_Data	0.2_Update_Data_Analyses.R	0.2_Update_Data_Outputs.R	23.lcs_survey.update	23.lcs_fisheries.update	Update fisheries length comps	
	Team Thornyheads	2023-04-05 10:48:24	0.2_Update_Data	0.2_Update_Data_Analyses.R	0.2_Update_Data_Outputs.R	23.lcs_fisheries.update	23.disc_weight.update	Update discard mean weights	
	Team Thornyheads	2023-04-05 10:48:24	0.2_Update_Data	0.2_Update_Data_Analyses.R	0.2_Update_Data_Outputs.R	23.disc_weight.update	23.growth.update	Update growth	
	Team Thornyheads	2023-04-05 10:48:24	0.2_Update_Data	0.2_Update_Data_Analyses.R	0.2_Update_Data_Outputs.R	23.growth.update	23.maturity.update	Update maturity	
	Team Thornyheads	2023-04-05 10:48:24	0.2_Update_Data	0.2_Update_Data_Analyses.R	0.2_Update_Data_Outputs.R	23.maturity.update	23.fecundity.update	Update fecundity	
	Team Thornyheads	2023-04-05 10:48:24	0.2_Update_Data	0.2_Update_Data_Analyses.R	0.2_Update_Data_Outputs.R	23.fecundity.update	23.mortality.update	Update natural mortality	
5. Model									
Item 5.1	Team Thornyheads	2023-04-10 13:43:47	5.1_Explore_RecDevs	5.1_Explore_RecDevs_Analyses.R	5.1_Explore_RecDevs_Outputs.R	23.mortality.update	23.model.recdevs_termYear	Update Terminal RecDev Year	Exploration of recruitment deviation options including the initial and terminal years, steepness assumptions, and bias adjustment.
	Team Thornyheads	2023-04-10 13:43:47	5.1_Explore_RecDevs	5.1_Explore_RecDevs_Analyses.R	5.1_Explore_RecDevs_Outputs.R	23.model.recdevs_termYear	23.model.recdevs_initYear	Update Initial RecDev Year	
	Team Thornyheads	2023-04-10 13:43:47	5.1_Explore_RecDevs	5.1_Explore_RecDevs_Analyses.R	5.1_Explore_RecDevs_Outputs.R	23.model.recdevs_initYear	23.model.recdevs_steep	S-R Steepness	
	Team Thornyheads	2023-04-10 13:43:47	5.1_Explore_RecDevs	5.1_Explore_RecDevs_Analyses.R	5.1_Explore_RecDevs_Outputs.R	23.model.recdevs_steep	23.model.recdevs_bias	Bias Adjustment Years	
Item 5.3	Team Thornyheads	2023-04-17 10:43:44	5.3_Francis_Reweighting	5.3_Francis_Reweighting_Analyses.R	5.3_Francis_Reweighting_Outputs.R	23.model.fleetstruct_5	23.model.francis	Francis Reweighting	Applying Francis Data Weighting method to the 2023 condensed fleet structure model. As the the number of fleets have changed, and a new abundance index method is used, the old 2013 weights are no longer valid and need to be recalculated.
Item 5.4	Team Thornyheads	2023-04-18 14:48:28	5.4_SS_Model_Warnings	5.4_SS_Model_Warnings_Analyses.R	5.4_SS_Model_Warnings_Outputs.R	23.model.francis	23.model.survey_timing	Survey Timing	These models will fix outstanding warnings from SS.
	Team Thornyheads	2023-04-18 14:48:28	5.4_SS_Model_Warnings	5.4_SS_Model_Warnings_Analyses.R	5.4_SS_Model_Warnings_Outputs.R	23.model.survey_timing	23.model.settlement_events	Settlement Events	
Item 5.5	Team Thornyheads	2023-04-20 13:16:01	5.5_Improve_LC_Fits	5.5_Improve_LC_Fits_Analyses.R	5.5_Improve_LC_Fits_Outputs.R	23.model.settlement_events	23.model.sample_sizes	Remove small sample size LCs	Improve fits to length composition data by modifying estimated selectivity parameters and remove poor data. This includes removing LCs where sample sizes are <11.5, using sex-specific selectivities for survey length comps, and modifying selectivity pars for the fisheries fleets.
	Team Thornyheads	2023-04-20 13:16:01	5.5_Improve_LC_Fits	5.5_Improve_LC_Fits_Analyses.R	5.5_Improve_LC_Fits_Outputs.R	23.model.sample_sizes	23.model.sexed_survey_selectivity	Sex-Specific Survey Selectivity	
	Team Thornyheads	2023-04-20 13:16:01	5.5_Improve_LC_Fits	5.5_Improve_LC_Fits_Analyses.R	5.5_Improve_LC_Fits_Outputs.R	23.model.sexed_survey_selectivity	23.model.improve_trawln	Improve Trawl_N LC Fit	
	Team Thornyheads	2023-04-20 13:16:01	5.5_Improve_LC_Fits	5.5_Improve_LC_Fits_Analyses.R	5.5_Improve_LC_Fits_Outputs.R	23.model.improve_trawln	23.model.improve_other	Improve Other LC Fits	

Note:
Here is a general comments where to find scripts, folders, and models.
[a] The **Folder** is housed in the 'model/Sensitivity_Anal' repertory;
[b] The scripts are housed in the 'R/ss/Sensitivity_Anal' repertory;
[c] The models are housed in the 'model/Sensitivity_Anal/**Folder**' repertory