BlueBRIDGE - Task #8503

Project WP # 641 (Closed): WP5 - Supporting Blue Assessment: VREs Development [Months: 1-30]

Project Task # 642 (Closed): T5.1 Stock Assessment VRE [Months: 1-30]

Project Activity # 1674 (Closed): VRE Stock Assessment Workplan

Task # 5238 (Closed): WECAFC Stock assessment support

Task # 8500 (Closed): DLM Toolkit for WECAFC cases

CMSY / DLMtool Integration

May 12, 2017 10:23 AM - Anton Ellenbroek

Status:	Closed	**Start date:**	May 29, 2017
Priority:	Normal	**Due date:**	Jul 31, 2017
Assignee:	Enrico Anello	**% Done:**	0%
Category:		**Estimated time:**	0.00 hour
Sprint:	WP05		
Infrastructure:	Development		

Description

Incorporate CMSY into DLM Tool package; consider both the standalone and integrated versions.

The aim is to have a scalable solution in the infrastructure in a VRE.

History

#1 - May 18, 2017 04:53 PM - Nathan Vaughan

Following investigation of the latest CMSY model it appears that the JAGS approach will not be rapid enough for simple integration into DLMtool. We will focus on using the current standalone VRE implementation.

#2 - May 25, 2017 05:40 PM - Nathan Vaughan

Based on a further investigation of the latest cMSY model in comparison with the existing DLMtool implementation we are currently working on porting the non-Bayesian portions of the code to DLMtool. Furthermore, we will consider adding accounting for CPUE data as per the BSM methodology without Bayesian fitting if possible.

#3 - May 25, 2017 06:18 PM - Gianpaolo Coro

Dear Nathan, CMSY (summary presentation here https://goo.gl/8tnBpC) is made up of a Monte Carlo process and a Bayesian process using a Markov Chain Monte Carlo method. Indeed, the latter is usually more powerful and much faster than the former, and can also use CPUE data. Thus I'm wondering why you want to use only the Monte Carlo process. Further, both the processes can be disable through a flag at the beginning of the code.

#4 - Jun 02, 2017 10:16 PM - Nathan Vaughan

Thanks Gianpaolo, we are working to see what parts of CMSY can be incorporated into DLMtool as from a practical standpoint any DLMtool functions need to be able to run in <5seconds which we believed was an inherent block on using the bayesian component. However we hoped that the Monte Carlo approach could be scaled to produce some output within that timeframe. The primary requirement for DLMtool would be reasonable MSY outputs to test performance while the more accurate r/K results of the full CMSY package could be used for the final analysis. We will discuss this more with you and Anton once a prototype implementation is running. However any suggestions from you on how to speed the runtime to this 5sec range would be greatly appreciated. Cheers, Nathan

#5 - Jun 29, 2017 05:38 PM - Nathan Vaughan

Have had some initial success in accelerating the CMSY Monte-Carlo procedure to interface with DLMtool. Now moving on to comparing the code for all example species. If successful applying CMSY in the DLMtool should be possible.

#6 - Jun 30, 2017 04:23 PM - Gianpaolo Coro

Dear Nathan, if you produce a new version of CMSY, please share it with me and I can integrate it with the e-Infrastructure. We are currently gathering new computational resources to support the CMSY/DLM tool case. I would propose a Skype call on the 11th of July at 16.00 to exchange updates (unfortunately I'll be in a meeting next week).

#7 - Jun 30, 2017 04:44 PM - Nathan Vaughan

Hey Gianpaolo, I will forward the code to you as soon as I complete the validation. Would you be able to join the weekly Skype call with Anton, Enrico, Nancie and me on July 13th or 20th? I'm sure they will also be interested to hear about the progress on the computational resources front.

#8 - Jun 30, 2017 04:47 PM - Gianpaolo Coro

OK for the 13th.

#9 - Jul 31, 2018 03:38 PM - Nathan Vaughan

- Status changed from New to Closed

- Infrastructure Development added