Summary comments on the Penguin Island Closure Experiment

By

Mike Bergh
OLSPS Marine
Silvermine House
Steenberg Office Park
Tokai 7945

20 September 2020

Agreement on the next steps to take with regard to the Penguin Island Closure Experiment is being impeded by the following:

1. Different researchers have analysed a different set of response variables.

2. Results presented by different researchers (FISHERIES/2020/JUL/SWG-PEL/***53REV*** and FISHERIES/2020/JAN/SWG-***PEL/09***) have been produced using different methods. This is in addition to the fact that FISHERIES/2020/JUL/SWG-PEL/***53REV*** analyses individual bird data while FISHERIES/2020/JAN/SWG-***PEL/09*** analyses aggregated bird data.

3. Some researchers have used data that were not available to other researchers.

4. Results produced by different researchers differ in a number of important respects.

5. No common ground has been established between different researchers about using a default method that provides a basis for such common ground. Non-technical participants in the debates cannot therefore rely on this to judge the reliability of the results.

6. The analytical methodology used in FISHERIES/2020/JUL/SWG-PEL/***53REV*** is not consistent with IWS panel recommendations dating back to 2015. Those produced in FISHERIES/2020/JAN/SWG-***PEL/09*** are.

7. There are a number of outstanding technical issues with the methods and results in FISHERIES/2020/JUL/SWG-PEL/***53REV*** that have not been answered.

These unresolved matters weigh heavily on the scientific deliberations which are now ongoing, and force participants to take a position on one or the other set of results, since both cannot be reliable.

In addition, there is now a mathematical proof (see the annex of FISHERIES/2020/AUG/SWG-PEL/82) that the standard error of the island closure effect achieved using aggregated bird data cannot be improved upon by using data from individual bird data. In the absence of any submission that contradicts this proof, there is no reason to question the correctness of this proof. It follows that any results that provide estimates with

standard errors that are smaller than the s.e. achieved using aggregated bird data must either be in error, or be negatively biased (presumably because the random effect used to adjust for pseudo-replication in the case of analyses using individual bird data is failing to account fully for this pseudo-replication). These results are therefore producing a misleading impression of the precision of estimates of the island closure effect.

Another consideration is that since decisions on the Penguin Island Closure Experiment must be made this year, it is likely that, given the complexities associated with the statistical analyses and the time it will take to resolve these, decisions will have to be made on the basis of results that have been tabled thus far. Given the problems that are pointed out above regarding the results reported in FISHERIES/2020/JUL/SWG-PEL/***53REV***, it is ill-advised to allow these to inform decisions that must be made this year.

It is proposed therefore that

1. A halt be called with regard to any new analytical results for 2020, or until management decisions can be finalised.

2. The results produced in FISHERIES/2020/JAN/SWG-***PEL/09 and*** MARAM/IWS/2019/PENG/P2 form the basis for decisions that are made in 2020. It should be noted that for some response variables at some islands there is a meaningful island closure effect. But the deliberations cannot ignore the totality of the results nor that some of these response variables offer contradictory results.

3. A deliberative process be initiated involving a forum created by DEFF Fisheries Branch to move towards a decision on the experiment, and any management decisions that flow from this.