

Internal Peer Review

Limitation and gaps of Length-based Thompson and Bell model on blue swimming crab in 2020

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Reviewed on 1st June 2022

1. The blue swimming crab assessment in 2020 was based on data collected from all fishing gears operated in the Gulf of Thailand, including artisanal and commercial fisheries. Therefore, the assessment results in 2020 were the stock status of blue swimming crab in the Gulf of Thailand (within Thai waters), not particularly in Surat Thani province.
2. The input data in the model (Length-based Thompson and Bell model) were width length and catch of blue swimming crab, which be processed to get several parameters e.g. growth parameter, natural and fishing mortality, for further assessment. The size sampling error that is not cover all size of crab, or inaccurate on catch may affect to the results.
3. Due to COVID-19 pandemic, several provinces have taken individual public health measures that causes constrains on data collection. The officers were difficult to collect fisheries data or cannot do in some months. That causes uncertainty in the assessment results.
4. For particularly assess the blue swimming crab stock in Surat Thani province, it should organize or have a specific procedure on data collection in consist with the area. That includes fishermen who exploit the crab resources, used fishing gears, area boundary, and environmental factors in the area, such as monsoon.

Uncertainty Factors from LB-SPR

Internal Peer Review

Reviewer :

- Prof. Tuanthong Jutagate, Ph.D., Ubon Ratchathani University.
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Review on 6th May, 2022

Results :

1. In 2021, data is collected from June to December 2021. There may be slight discrepancies in the estimates. (Corrected by comparing the available data with previous research.) However, there are sufficiently large samples to represent a status analysis. The researchers suggest that data should be collected every two months to provide the data distribution and can represent information throughout the year.
2. Budget constraints make it very necessary to plan for data collection in advance.
3. The data to evaluate size distribution, there is a distribution of length-frequency data which lacks some stock sizes due to the fishing gear. The researchers propose an additional survey to study size distribution in the next year. However, catch sizes already cover pre-reproductive sizes that are representative of the fishery and can be used for further management.
4. Sampling should be selectively performed on days related to seasonal and lunar influences to obtain a well-represented sample of the entire population.
5. During the monsoon season, fishermen do not fish that making it difficult to collect the data.
6. The COVID-19 epidemic has made it difficult to collect the data in FIP site. However, researchers have been able to adjust their data collection plans according to their close relationship with fishermen.

External peer review on the BSC resources status in Surat Thani 2021 with LB-SPR technique.

Reviewer : Assoc. Prof. Thanitha DARBANANDANA

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May 2022

According to the research project proposals, there are 5 sub-projects. In this case, recommendations will be made specifically for **Sub-project 1: assessment of BSC fishery resources to propose guidelines for sustainable management of BSC resource utilization in accordance with international standards: case study of Surat Thani Province**, 2 summary reports of studies have been submitted by milestones 19 and 19A with very similar content and there was a little more discussion. From reading the report, Milestone 19A was a pre-review of the Milestone19 study. Therefore, Milestone 19A should be introduced first. However, when considering the process of collecting data, will be report as the following:

1. The research team presented in the research project that *“data collection was conducted for a period of 14 months between October 2017 to November 2018 by collecting data for all seasons and academic years.”* But in fact, the research team did not collect data during January to April 2018 without stating the reason for no data collection during this period.

2. The research team presented in the research project that *“to collect BSC data from 2 types of fishing gear; BSC gill nets and trap both of local fishing vessels and commercial fishing vessels.”* In fact, trawler vessels should be kept as well as to cover all BSC samples from all fishing gear.

3. The research team presented a comprehensive and detailed research project on the study of reproductive biology. However, no study results were reported on this subject. Although it may not be done because it takes time to work in the laboratory and analyze the results. But there should be at least some progress in this section.

Other Issues beside from research operations.

1. For Milestone 19 and 19A, the research process should be compared in table or more clearly presented which process belongs to which Milestone.

2. Overall operation report was short without any enough information and the Milestone 19A whitepaper is an analysis of demographic dynamics, but the source code of LB-SPR is irrelevant. It would be more appropriate to put it in the Milestone 19 report.

3. Budget, to save the budget, the research team in the area should be responsible for operating research to enhance the experience of researchers and to develop research personnel as well. Because of the presence of research team in different areas will cause a waste of budget, especially travel expenses. However, in the analysis of research results, it may be more appropriate to use research team from outside the area to analyzed research data from time to time.

4. In summary, reporting on both of Milestone's results should be more detailed. Because of the report does not cover all topics, especially the results on reproductive biology and both Milestone's reports are so concise that the reader seems to have understood the underlying theory on the previously reported topic. In fact, some readers may not have any knowledge of the subject reported at all as well as the process of LB-SPR analyzing is not yet clear in Chapter 3 of the research proposal. In particular, the MRAG needs more details to guide the preparation of FIP.