

Research Paper Review Form

(Since October 1st 2011 – Version 1)

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II The Information of Research Paper Review

Paper's File Name	MS-104700061
Journal Title	Marine Science
Paper Title	Size At First Maturity Of Cuttlefish, Sepia Latimanus, From North Sulawesi Waters, Indonesia
General comments	
The paper addresses the sustainability and conservation of cuttlefish in the context of overexploiting fishery. The authors take samples to determine the size at first maturity of cuttlefish to establish when individuals reach maturity. This is important to set a minimum size at which cuttlefish can be caught to guarantee at least one spawning event before they are caught.	
Strengths and weaknesses	
The abstract is informative of what has been done in this research paper, however, the results are based on very few data and, considering the stage of maturity of the individuals in the next size class, the conclusions are not convincing. The introduction doesn't provide background on why cuttlefish are vulnerable – terminal intermittent spawners – therefore I would suggest adding information on the reproductive biology and life history traits of this species. I missed references to data obtained by other studies. The results and conclusions are a bit confused and probably would be clearer if presented in two distinct sections. Table 1 is not referred to in the text.	
Suggestions for improvement	
General suggestions: Please improve the English language and the writing skills. Specific suggestions: 1) I suggest giving some more information in the introduction about why cuttlefish are vulnerable. For example you state “low to moderate stock recovery ability from the number caught and high sensitivity to the fishing gear “ could you provide references and give an idea of how many individuals are caught and why the stock recovery ability is low? I would suggest you give background information about the reproductive biology of this species. Generally cuttlefish are terminal intermittent spawners and their fecundity is usually quite high. You write generally for cuttlefish “their fecundity is relatively low” if Sepia latimanus has low fecundity could you please provide references for this. What is meant by “high sensitivity to the fishing gear”?	

- 2) Could you please revise the structure of the introduction and further explain why the concept by Froese about the relationship between fisheries management and life history theory is relevant in this context.
- 3) Could you please improve the readability of the results/discussion? Personally I think that results and the discussion were mixed up and that the concepts of this section were not clearly presented. I would suggest to integrate information from other studies and compare the obtained results with results obtained by other researchers in the same or other areas where this or other cuttlefish species can be found (for the minimum/maximum size or also for the fecundity in the introduction).
- 4) Could you collect further samples? The samples were collected from April to November, is that the reproductive season of *Sepia Latimanus* in this area? Why did you choose to collect samples only during this period?
- 5) Personally, I think that further samples are necessary to draw any conclusions on the size at first maturity of this species.
- 6) Are the conclusions of this paper only based on the 2 individuals in size range 13.21-19.41? Also in the size range 19.42-26.62 you have 2 immature individuals that are unlikely post spawning if the maximum size is 55.53 cm as you indicated in your research.
- 7) I would suggest comparing your data to other data obtained by other studies.
- 8) Refer to all tables and figures in the text and revise the explanation of the formula presented in the methods section.
- 9) “In this study, the asymptotic dorsal mantle length (L_{∞}) and the growth coefficient (K) of *Sepia latimanus* were obtained $L_{\infty} = 55.53$ cm and $K = 0.248$. This length estimation is larger than similar species reported by FAO^[11].” What is reported by FAO? The growth curve proposed by van Bertalanffy equation is used for fish stocks as fish keep on growing after reaching sexual maturity. This generally is not the case in cuttlefish as they die after reproduction and invest all their energy reserves into reproduction rather than body growth once they have reached sexual maturity. Could you please explain why this formula is suitable in this context?
- 10) I suggest to develop an experimental design with a regular sampling frequency throughout the year to obtain at least 30-40 samples per month and to carry out statistical analyses.

Paper score

Ten-point System	Relevance	Originality	Significance	Technical soundness	Clarity of presentation / language
Enter a score between 0 to 10	7	7	8	7	6

Final Evaluation

Excellent
 Very Good
 Good
 Fair
 Poor

Acceptance
 Minor Revision
 Major Revision
 Rejection

Date: 09 / 08 /2015