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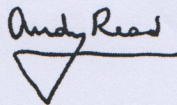
This document constitutes my review of the Ph.D. dissertation of Julia Ivanchikova, who is a candidate for the degree of Doctor of Philosophy from the National Academy of Sciences of Ukraine, working under the supervision of Dr. Pavel Gol'din.

My overall assessment is that the thesis provides a substantial contribution to our understanding of the ecology and conservation of harbour porpoises in the Black Sea and, more generally, to the biology of cetaceans. The material in the dissertation is presented clearly and the chapters are well written.

I am pleased to recommend that the thesis be accepted, and that Ms. Ivanchikova be awarded the degree of Doctor of Philosophy.

My specific comments and questions are attached to this letter below.

Sincerely,



Andrew J. Read
Stephen A. Toth Distinguished Professor of Marine Biology
Nicholas School of the Environment
Duke University

Introduction

No substantive comments.

Chapter 1

This is a comprehensive literature review of the biology and conservation status of harbour porpoises, with a very detailed and specific review of the species in the Black Sea. The chapter also includes a summary of the use of passive acoustic monitoring as a research technique.

I am interested in the candidate's thoughts on social behavior of this species. On Page 22, she alludes to the fact that harbour porpoises "have been considered not to be social..." and I wonder whether she disagrees with this statement?

Editorial Comments:

Page 21, Line 2 - "minke whales" should be "minke whale"

Page 25, Line 15 - "are commonly live" should be "commonly live"

Page 27, Line 26 - "Culpeidae" should be "Clupeidae"

Page 28, Line 4 - "are finding their prey" should be "find their prey"

Page 29, Line 22 - very few harbour porpoises are hunted in Alaska.

Chapter 2

This chapter provides a good overview of the study area, its oceanography and ecology, together with a systematic review of the passive acoustic and statistical methods used in the dissertation.

Editorial Comments:

Page 42, Line 12 - "spawning" should be "spawn"

Chapter 3

This chapter was published last year as Ivanchikova and Tregenza (2023). The paper is an important contribution to the literature describing the utility of this passive acoustic monitoring technique. The chapter (and manuscript) present a very careful and thorough analysis of the validation process used to assess the accuracy of F-POD detections and is the result of a large amount of work. I agree with the primary conclusion of the author - that the error rates are acceptably low and allow use of the automated classification without further editing. The paper has already been published, and the chapter is clear and thorough, so I have no substantive comments.

Chapter 4

This chapter reports the results of analysis of an impressive dataset of data from F-PODS deployed in five countries around the Black Sea. Overall, this is a good chapter, but I felt that there was an excess of material on the ecology of prey. And the material on Important Marine Mammal Areas (IMMAs - Pages 94-99) should either be shortened or placed elsewhere in the dissertation. These changes could be made when the material in this chapter is being prepared for publication.

The dataset from the F-POD in the Dzha Sea was excluded from the analysis in Chapter 5 because it consisted of only two months of recording. Was it included here?

I would like to understand why the combined effects of season and time of day were not explored in this chapter (cf. Section 4.4, Page 84).

What is the detection range of the F-POD? Could this influence whether clicks were detected from porpoises foraging benthically or in the water column?

I think that some of the background on the ichthyofauna of the Black Sea on Page 85 is unnecessary. I would start with the species descriptions. I think it would be good to limit each species to a paragraph or two.

Editorial Comments:

Page 86, Line 4- "anchovy" should be "anchovies"

Page 86, Line 8- "anchovy" should be "anchovies"

Chapter 5

This chapter explores the effects of a variety of potential environmental drivers on the occurrence of harbour porpoises in Ukrainian waters, as detected by F-PODs. The chapter is interesting and contains important new information and the information contained here is publishable. The material on Conservation (starting on Page 128) is important, but as with the section on IMMAs (see above), I wonder whether this might be placed in a separate chapter in the dissertation.

I would like to know a little more about how and why these five sites were selected. Were they chosen to represent distinct ecological communities or oceanographic regimes? Or was it more a matter of logistics and practicality?

Very interesting finding of the effect of the presence of dolphins on harbour porpoise echolocation activity – one of the first clear pieces of evidence on the effects of dolphins on the distribution and behaviour of harbour porpoises. This is an important result.

I'm not sure it is necessary to review all of the potential drivers that were not included in the final model in the Discussion (e.g. Location – Page 124).

What potential drivers were not included here but might be important determinants of porpoise distribution? For example, vessel traffic or other sources of anthropogenic noise?

Are Marine Protected Areas (excluding gillnet fishing, for example) preferable to the use of acoustic deterrents (pingers)?

Conclusions

No substantive comments.

*Вірючі з огляду на
касіюмов вказано
записати роками
та сім'ї
внеси секретар
В. Шамльгаузен*

