

琉球大学学術リポジトリ

ナマコ類の個体群の現況、生態学的役割に関する研究および今後の保全に向けた検討

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(様式第5-2号) 課程博士

令和5年2月9日

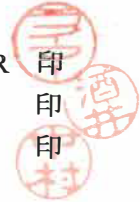
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学位（博士）論文審査及び最終試験の終了報告書

学位（博士）の申請に対し、学位論文の審査及び最終試験を終了したので、下記のとおり報告します。

記

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| 申請者 | 専攻名 海洋環境学 氏名 濱本耕平 学籍番号 XXXXXXXXXX | |
| 指導教員名 | James Davis REIMER | |
| 成績評価 | 学位論文 <input checked="" type="checkbox"/> 合格 <input type="checkbox"/> 不合格 | 最終試験 <input checked="" type="checkbox"/> 合格 <input type="checkbox"/> 不合格 |
| 論文題目 | Current population conditions and ecological roles of Okinawan holothurians, and consideration of their future conservation (沖縄諸島におけるナマコ類の個体群の現況、生態学的役割に関する研究および今後の保全に向けた検討) | |
| 審査要旨 (2000字以内) | Sea cucumbers have important ecological roles in coral reef ecosystems in bioturbation and material recycling. However, due to rising consumer demand, and ease of collection, sea cucumbers are over-exploited in many regions of the world, including Okinawa. At the same time, they are understudied. Thus, basic ecological information is needed to better conserve sea cucumbers. | |

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審査要旨

The candidate generated basic ecological information on population density, species compositions, and habitat preferences at sites around Okinawa Island, finding low numbers, and the communities being dominated by one species, *Holothura atra*. Then, he examined the population genetic structure of *H. atra*, finding several different populations, often separated only by very small distances (~1 km), and implying each population needs conservation. Marine protected areas harbored more sea cucumbers with higher genetic diversity. Finally, the candidate examined the role of sea *H. atra* in microbial communities in sand and their feces, potentially indicating that this species may transform sediments at coral-poor sites to more like those at coral-rich sites.

These results are significant and of academic importance as our understanding of coral reef marine ecosystems and the role of holothurians are limited, and with the increasing over-exploitation of this group, urgent research such as this is needed. The candidate has also suggested concrete actions that can be performed by Okinawa Prefecture, providing a blueprint for future research and conservation. The candidate's work can therefore be judged as being of a high academic level and importance.

The candidate's publication history related to this thesis more than meets graduation requirements, with three first author papers, all in peer-reviewed international journals. The candidate gave a final thesis presentation (=final examination) on February 9, 2023, in the Science Building Room 114, from 14:15 to 15:15 in front of all three members of the Committee. This presentation was open to the public, and attended by many people from both inside and outside the university. In his presentation he discussed his major results. Overall, the candidate talked for 40 minutes, and then appropriately answered numerous questions related to his thesis and research field for 20 minutes. The Committee then met on February 9, 2023, at 15:30, and discussed and judged the candidate's thesis, and his final presentation and answers to questions, as demonstrating his hard work, results, and knowledge. Thus, based on the above results, for these reasons, the Committee unanimously recommended "Pass" for the candidate.