

Climate change impacts and adaptation measures of coastal ecosystems based on administrative documents of local governments

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In shallow coastal waters, reef-building corals, macroalgae, and seagrasses often constitute the underwater landscape and function as foundation species. Coral reefs, macroalgal beds, and seagrass beds are known to have high ecosystem services. However, various changes have been reported so far, including coral bleaching and mortality due to rising sea surface temperatures, increased feeding pressure, vegetation degradation, contraction, expansion of distribution areas, and changes in species composition. Therefore, appropriate use and conservation of coastal resources are required in response to global and regional stresses. The main objective of this study was to compare climate change impacts and concerns on coastal ecosystems in different regions. For this purpose, we have targeted administrative documents created by local governments and organized what information is available on coastal ecosystems (reef-building corals, macroalgae, and seagrass). It is assumed that the essential resources and issues considered crucial in each region are described in administrative documents. By organizing the status of descriptions of coastal ecosystems by prefecture, it will be possible to understand each region's distribution, use, and management, as well as the perception of climate change impact issues. If there is a significant gap between information on actual distribution, utilization, and future changes and the status described in administrative documents, it would be desirable to close the gap as necessary. This study collected the latest administrative documents related to the environment, tourism, fisheries, industrial promotion, biodiversity strategy, global warming mitigation, climate change adaptation, etc. were collected for prefectures facing the sea. Documents issued by the government as higher-level plans were also used as reference materials. From the analysis of administrative documents, keywords such as coral, macroalgae, and seagrass differed greatly depending on the prefecture and the type of administrative document. For example, in the Regional Climate Change Adaptation Plan document, the keywords related to corals were most common in Okinawa Prefecture, followed by Kochi and Tokushima. Even in prefectures where coral reefs have been formed or where reef-building coral communities are widely distributed, they sometimes need to be mentioned in administrative documents, suggesting a gap between distribution and recognition. The presentation will present the results of the differences between biotic communities and administrative documents regarding the occurrence of the keyword and the phenomena considered to be at risk.

Keywords: coastal ecosystem, climate change, adaptation measures, administrative documents, text analysis