

Conservation Principle and Technology Analysis of Marine Ranching Biological Resources

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Abstract: Biological resources conservation realization can be basically regarded as an important guarantee for realizing the goal of establishing of marine ranching with high quality. Combined with the status quo, the conservation of marine ranching biological resources involves many systematic and constructive problems. In addition, the theoretical foundation of marine biological resources is obviously weak, which hinders the modernization of marine resources. In light of that, mainly relying on the conservation principle of marine ranching biological resources, this paper summarizes the relevant conservation technologies and optimization and improvement measures for reference.

Keywords: Marine Ranching; Biological Resources; Conservation Principle; Conservation Technology

1. Introduction

As one of the major marine agriculture nations, the problems such as environmental deterioration and ecosystem imbalance faced by China are becoming more and more obvious after decades of development and construction. It is urgent for our country to adopt scientific and reasonable methods and measures to achieve the process of transformation and upgrading. Among them, marine ranching, as an emerging concept, by integrating a series of sustainable development measures such as environmental protection, ecological restoration and resource conservation, marine ranching promotes the transformation and upgrading of marine fisheries and marine agriculture as well as realizes the replacement of the old drivers of growth. At present^[1], in order to further promote the high-quality construction and development of marine ranching, relevant personnel have made deployment planning for the conservation of biological resources of marine ranching, mainly through the application of modern technology and management mode, the lag problems existing in the traditional marine ecosystem are fully solved to meet the requirements of high-quality construction and development.

2. Conservation Principle Analysis of Marine Ranching Biological Resources

Mainly relying on ecological principles, marine ranching structures ecosystem featured with sustainable development by fully utilizing natural productivity, modern engineering technology as well as management model. Among them, in terms of technical application method, bioremediation and artificial proliferation are mainly adopted, aiming to structure an ecosystem integrated with such concepts as environmental protection, resources conservation as well as sustainable development. Even though a unified standard for the definition of marine ranching hasn't been formed by the relevant industries^[2], it is generally believed that marine ranching is a marine ecosystem based on ecological principles.

Biological resources conservation, which mainly restores and re-construct the damaged biological resources by adopting natural or artificial ways to alleviate the current deterioration of marine ecosystem, can basically be regarded as an important part of the marine pasture ecosystem system. Different from conventional ecological conservation, biological resources conservation on the basis of marine ranching involves relatively more systematic content. During the process of specific conservation, it is required to deploy and implement reasonably around the two aspects including resource restoration engineering and protection management engineering.

3. Conservation Technology Analysis of Marine Ranching Biological Resources

3.1. Biological Resources Restoration

As the important part of marine ranching biological resources conservation technology, biological resources restoration can be reasonably implemented around the two technical contents of enhancement and releasing and natural enhancement.

3.1.1. Enhancement and Releasing

In terms of enhancement and releasing, biological resources fishing is the main way in our country. Combined with the application and development in recent years, the domestic enhancement and releasing evaluation system and scientific basis are insufficient, and some work content are still in the qualitative and extensive stage. To eliminate the negative influence brought by traditional management concept, the current enhancement and releasing activities shall take core issues such as the competition between biological resources and genetic structure change into account. Based on the development and change of core issues, it is best to optimize the ecological structure system of marine ranching, especially the structure optimization of food web^[3].

The main reason is that the food web structure can accurately describe the role relationship between producers and consumers to a certain extent. Researchers can focus on, deploy and implement the current ecosystem vulnerability and ecosystem structure optimization measures in combination with the characteristics of the role relationship. In the process of specific practice, researchers should always adhere to the high-quality construction goal of optimizing the food web structure of marine ranching, and restore the original state of marine ranching ecosystem through reasonable enhancement and releasing activities.

3.1.2. Natural Enhancement

For some species with strong adaptability such as beach shellfish, it is difficult to completely restore the safety of marine ranching ecosystem by excessive enhancement and releasing method. In view of this, natural enhancement method is adopted to carry out habitat restoration and resource conservation so as to achieve the goal of biological resources restoration. For example, some marine ranching areas can be transformed into the important spawning area for marine organism, ensuring that the self-restoration function of biological resources can be enhanced.^[4]

3.2. Biological Resources Conversation Management

As an important part of marine ranching biological resources conservation and management technology, biological resources conservation and management can adopt appropriate management methods to achieve high-quality conservation and management objectives according to the needs of marine ranching biological resources conservation and management and environmental conditions. Taking habitat restoration and conservation as an example, the destruction or serious loss of biological habitat will pose a threat to the survival and development of organisms. Therefore, in the process of marine ranching construction, we should carry out reasonable restoration and ecological conservation of biological habitat based on the characteristics of sea areas.

Combined with the current situation of restoration and conservation in China, most marine ranches are mainly repaired by means of artificial fish reef, restoration and protection of seagrass bed and so on. Among them, in the process of biological habitat restoration, relevant personnel should adhere to the concept of ecological and environmental protection construction, and ensure the smooth realization of the objectives of biological resources protection and management by continuously improving the production capacity of marine ranching and restoring species diversity. It is worth noting that in the process of restoration and protection, relevant personnel cannot overemphasize the construction of artificial fish reef, so as to prevent the homogenization of marine ranching construction.

In addition, the investigation and monitoring of biological resources can also further strengthen the protection and management of biological resources. Combined with the current monitoring and management situation, some regions in China have made good achievements in the construction of fixed platform for environmental resources monitoring of marine ranching. Among them, the established monitoring fixed platform system has many functions, such as nursing, tourism, monitoring and other functions. At the same time, multi parameter water quality monitors and small meteorological stations can also be used to scientifically build a real-time monitoring system. During the operation of the system,

the spatial change of fish resources in the sea area can be grasped by using the real-time wireless data transmission function. However, it is worth noting that the domestic research on marine ranching monitoring focuses on the monitoring of environmental factors, and lacks certain attention to the real-time monitoring of biological resources and the upgrading of equipment technology^[5].

4. Relevant Suggestions

In order to ensure the sustainable development of marine ranching, researchers in the industry should strengthen the emphasis and analysis on the content of biological resources conservation technology. For example, by developing a series of technical means such as modern biological resources monitoring and prediction, we can focus on the dynamic changes of marine ranching biological resources and the driving relationship between species^[6]. At the same time, researchers should improve the habitat restoration facilities. For example, by adopting scientific design and scientific delivery, artificial fish reef can be reasonably applied to habitat restoration. In addition, insiders in the industry should focus on solving the current extensive qualitative problems, and it is best to be based on the requirements of quantitative and accurate objectives to ensure that the marine ecosystem can recover itself^[7].

5. Conclusion

In general, high-quality construction of marine ranching can basically promote the transformation and upgrading of marine fisheries in our country and achieve the goal of ecological civilization. As the core content of high-quality construction of marine ranching, biological resources conservation should always rely on ecological principles, make use of natural productivity, modern engineering technology and management model, and constantly strengthen the standardized management and scientific guidance effect of ecological resources conservation. It is worth noting that the construction of marine ranching in China is still in the preliminary exploration stage, and there will be many deficiencies in the conservation of biological resources. It is suggested that in the future development process, the industry should always be based on high-quality development goals, improve the construction of institutions and mechanisms, and strengthen demonstration and guidance, so as to ensure the smooth realization of the goal of marine ranching biological resources conservation.

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