

Assessment report on Enhanced Ability for the demonstration NAGRR in BSYS

1. Overview of protected areas

“Aquatic Genetic Resource Reserves for algae in Rongcheng Island in Shandong province”(hereinafter referred to as “RIS”)is located in the south of Sanggou Bay, and the Sanggou Bay is located at ($37^{\circ} 01' \sim 37^{\circ} 09' \text{N}$, $122^{\circ} 24' \sim 122^{\circ} 35' \text{E}$), and the north, the west and the south are the land environment, the Bay is facing the east, and the island head and the rabbit stone are facing north and south, and are semi-closed bays with a length of 11.5 km from the north and south., and width of 7.5km from east to west, the full length of the coastline is 52 kilometers, and the total area of the water surface in the bay is about 200,000 mu. The sea bottom of the Bay is flat, gradually inclined from the west to the east, with a small slope, with an average water depth of 7~8 meters and a maximum water depth of 15~17 meters. The type of the bottom of the bay is generally divided into the base rock, the gravel stone, the middle fine sand, the fine sand and the argillaceous silt. The bedrock is mainly distributed in three major underwater rock reefs in the near-shore area and the bay of the north-south, and the near-shore area of the north of the island is the area where the protection area is located, and the bottom of the area is mainly gravel.



Fig. 1-1 Location Diagram of Protected Area

According to the guiding ideology and the planning principle of the protection area, the basic law of ecology is applied to combine the characteristics of the marine area of the Ningjin Street Office of Rongcheng, and fully consider the characteristics of the ecological environment and the biological characteristics of the biological resources. The total area of the protected area is 471.66 ha. The specific scope is shown in Fig. 1-2.

荣成楮岛藻类国家级水产种质资源保护区

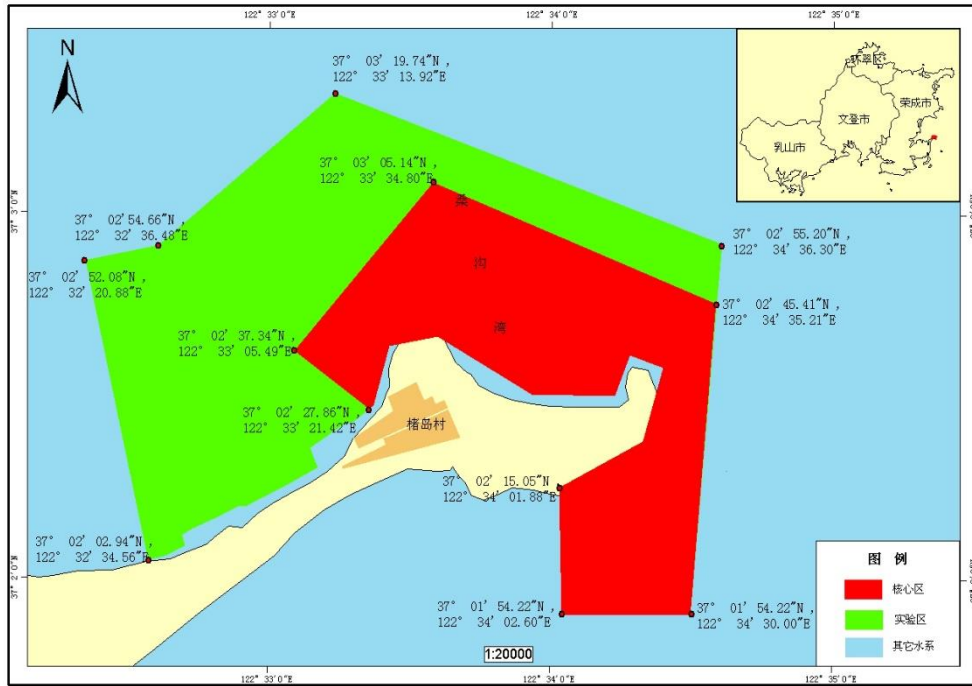


Fig. 1-2 Schematic diagram of core area and experimental area

(1) Core area

The core area is 205.44 hectares, accounting for 43.6% of the total area of the protected area. The natural conditions of this area are superior, the biological resources conditions are relatively good, and the function is normal, but it also belongs to the threatened sea area of species, which is the key point of setting up the protected area. It is proposed that the habitat of protected organisms will be protected through protective management, and the resources can be restored under effective protection.

(2) Experimental area

The experimental area is 266.22 hectares, accounting for 56.4% of the total area of the protected area. Compared with the ecological

protection area, the density of biological resources in the area is low, so it is necessary to carry out strict management to promote the restoration of resources and improve the value of development and utilization.

The subdivision of the above protected areas is divided according to the current situation. With the deepening of the implementation of the protected areas in the future, according to the actual situation of the distribution and utilization of resources in the area, the boundaries and functions of the protected areas can be properly adjusted under the premise that the total area of the protected areas remains unchanged. However, they should be made by the plenary meeting of the protected area Management Committee and submitted to the higher management department for the record.

2. Self-evaluation and score of RIS

According to “Management Regulations and Index System for Management Assessment of NAGR”, the basis and score of self-evaluation were explained item by item, and the supporting materials such as image, picture and so on were attached.

2.1 Foundation of the reserve

The RIS is located in the adjacent sea area of Rongcheng City, Shandong Province, and belongs to the jurisdiction of Rongcheng City, and is managed by the Rongcheng Marine Economic Development Center (the former Rongcheng Fisheries Technology Promotion Station).

The department concerned with the department of land and resources, traffic bureau and other departments shall not be entitled to a dispute.

(1) The boundary of the reserve is clear and the longitude and latitude coordinates of the inflection point are correct. Therefore, both “Ownership” and “Boundary” indexes scored 5 points.

(2) The functional division is scientific and reasonable, the boundary range between the core area and the experimental area is clear, and the longitude and latitude geographical coordinates of the inflection point, the scope and area of the protected area are consistent with the approval documents. Therefore, the score of “Function Zone” index was 5 points.

(3) The protection target information is clear, and the main varieties are: large leaf algae, cauliflower, and algae (as shown in Fig. 2-1 to Fig. 2-3). The score of “Protection species” index was 5 points.

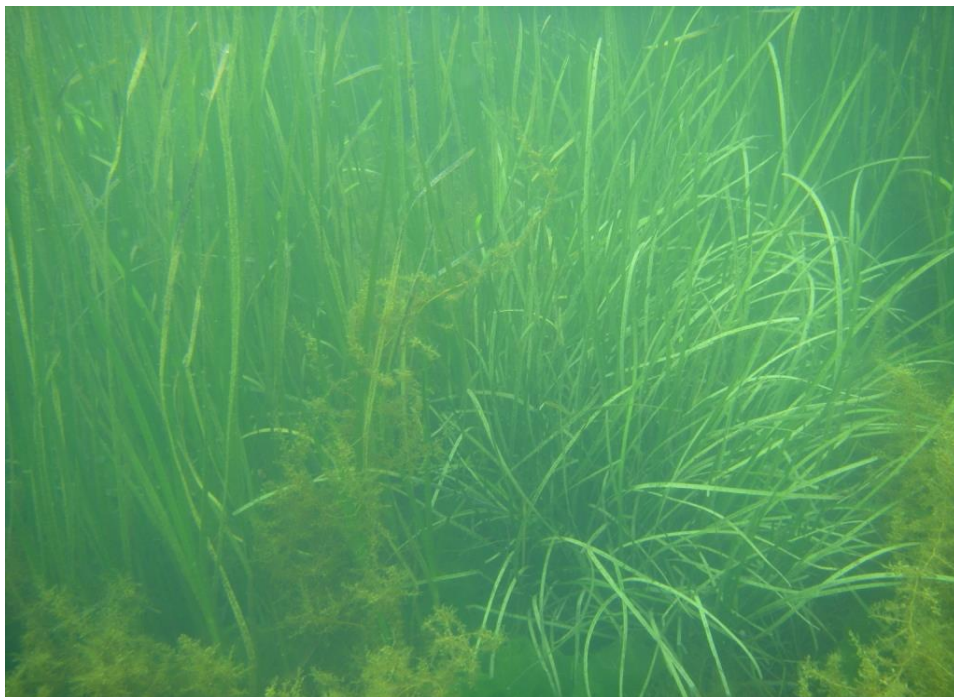


Fig. 2-1 Large leaf algae



Fig. 2-2 Cauliflower



Fig. 2-3 Algae

2.2 Condition of management and protection

(1) There are no marked boundary marks, boundary piles and signs boards in the protection area, and the special protection area propaganda board is missing, the configured law enforcement facilities are not

complete, and the requirements of the management of the protected areas can only be basically met. In view of the fact that the protected area itself has a certain law enforcement capability and has a certain facility equipment, but the relevant equipment needs to be further purchased, and the supplement of the basic facilities can be improved. Therefore, the “Facility” index score was 2 points.

(2) Rongcheng Marine Economic Development Center belongs to Rongcheng Marine Development Bureau and currently manages the related business of protected areas part-time. Although the management content and management measures of the protected area have been strengthened. However, because the construction of protected areas is a new work, the Marine Economic Development Center of Rongcheng City is only equivalent to the part-time protected area management organization protected area, the management system is not perfect, and can only basically meet the business requirements of management and protection. Therefore, the score of “Institutions” index was 1 points.

(3) There are 1 doctor, 2 masters, 2 senior professional titles and 5 middle-grade professional titles in the protected area, and the management and decision-making, configuration management and technical personnel of the protected areas are studied regularly. Therefore, the score of “Staffing” index was 5 points.

(4) At present, the construction of protected areas is still in a new

work, the system is not yet perfect, the local government and management departments have not paid enough attention to, resulting in some problems in the operation funds after the establishment of protected areas, unable to meet all the management needs of protected areas, and unable to further carry out the development of protected areas. Therefore, the score of “Funds” index was 1 points.

2.3 The management measures

(1) The RIS has formulated and implemented sound management and protection rules and regulations, and strictly complied with them. At present, the regulations and systems of management and protection that have been formulated and implemented in the protected areas mainly include the following contents: the regulations on the protection of fishery resources in the protected areas; the regulations on the entry and exit of the boundaries and scope of the protected areas; the patrol duty system; the surveillance and observation watch system; the document and data management system of the protected areas; and the financial management system.

The protected area management system covers resource protection, daily management, law enforcement patrol, document management and financial management. Therefore, both “the rules and regulations”, “daily management and protection” index scored 5 points.

(2) RIS set up one procuratorial station at the nearest wharf of the

protected area to check whether fishing vessels or other vessels violate the regulations on the management of the protected areas, whether they have illegally entered the protected areas or introduced foreign seedlings, or whether they have violated or destroyed the protection of biodiversity; Regular monitors are sent to patrol the boundaries and waters of the protected areas, especially during the breeding and forbidden periods of fishery resources to prevent vessels from entering the protected areas, and fishing vessels, including other operating vessels, are not allowed to operate illegally in the protected areas. However, the reserve still lacks some law enforcement equipment, and the number of law enforcement checks is also small. Therefore, the score of “Law enforcement” was 3 points.

(3) According to the guiding ideology and planning principle of the protected area, the total area of the protected area is determined by comprehensive planning, and the boundary and scope between the core area and the experimental area are determined strictly according to the planning. Therefore, the score of “Planning and implementation” was 5 points.



Fig. 2-4 Master Plan of the RIS Protected Area

(4) Monitoring personnel are regularly organized to monitor and survey the ecological environment and fishery resources of protected areas, to keep abreast of the changes in the number of fishery resources in protected areas, to detect the germplasm characteristics of important species, and to monitor the ecological environment of their habitats,

especially for emergencies. Therefore, the score of “Scientific research” was 5 points.

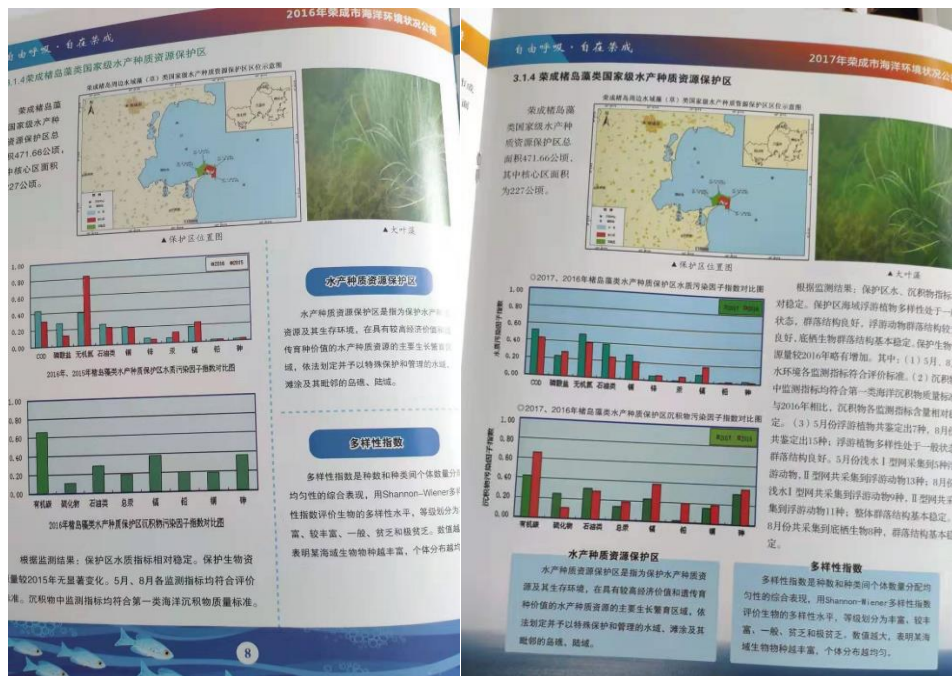
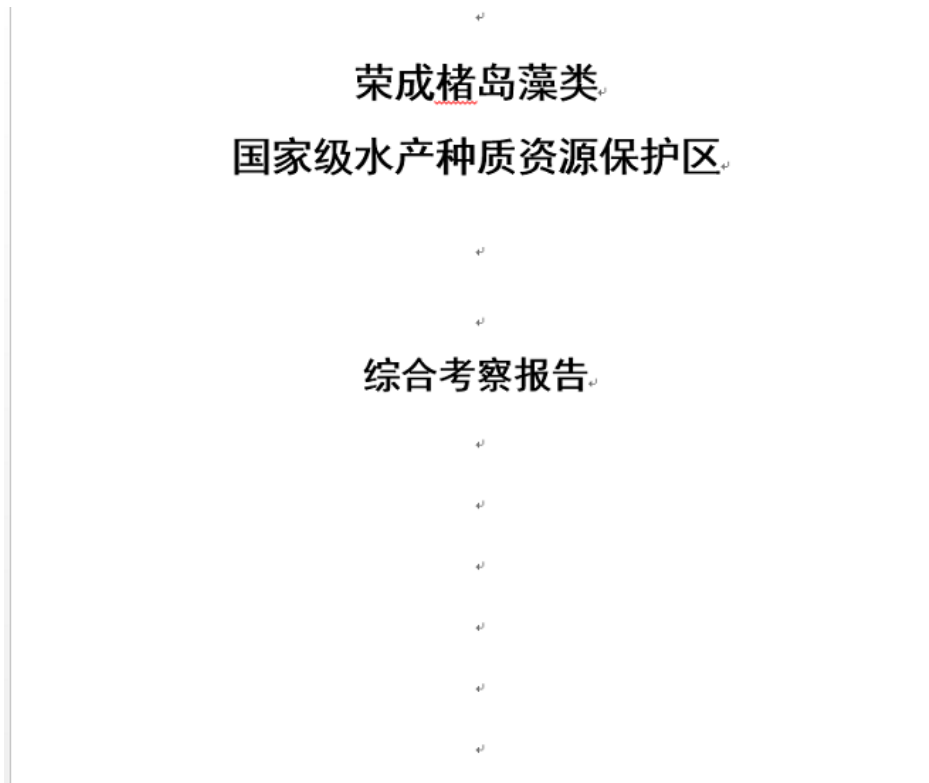


Fig.2-5 Scientific investigation report on protected areas

(5) Although, the protection area has carried out a certain follow-up investigation and resource assessment on the change of various important biological resources in the area, and the environmental quality is monitored to provide reference for the management and development of the protected area. But at present, the scientific research base also lacks the professional water quality testing laboratory and the unmanned aerial vehicle, the portable water quality detector and other relevant experimental equipment, and the monitoring and early warning system for the ecological environment of the sea area is lacking, and the monitoring activities carried out lack the support of the experimental facilities. Therefore, the score of “Dynamic monitoring” index was 1 point.

(6) With the development of the sea area, the intermixing of the germplasm and even the biological invasion has become an inevitable event. The protection area can prevent the negative impact of the production of the offspring of the protected areas and the adjacent sea areas from other areas, and adopt strict scientific demonstration and control to control the introduction of other culture organisms in the estuary sea area, so as to ensure that the ecological potential is not invaded. in addition, according to the function of each zone of the protection zone and the actual situation of the resources and the environment, the scientific and reasonable regulation of the production

season, the production quantity, the operation mode and the harvesting specification of the protection zone is made, and the production units and the individual are strictly enforced, All production units in the area have the obligation to comply with the relevant provisions of the protected areas, declare the production results and accept the management supervision of the protected areas. Therefore, the score of “Ecological restoration” index was 5 points.



Fig.2-6 The experiment of big leaf algae proliferation in RIS.

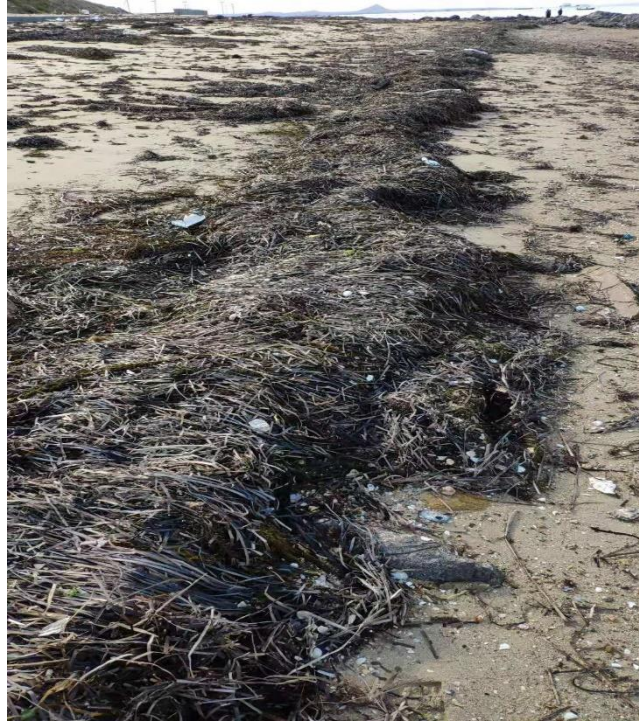


图 2-7 Recovery and maturation of big leaf algae

(7) At present, the protected area has not yet jointly carried out relevant management scientific research activities with relevant units at home and abroad. Therefore, the score of “Communication and cooperation” was 0.

(8) The protection areas strive to adopt a concise, vivid and flexible way to make public information to the broad masses, so that the masses will gradually understand the significance of the construction of the protected areas and protect the benefits of nature to them, and turn the protection of natural resources and the natural environment into the self-conscious action of the masses. To promote the economic value of marine life knowledge and biology; to promote the relationship between the marine life and the natural environment; to promote the role and

significance of the protection areas of the aquatic germplasm resources; to promote the location, scope and management regulations of the protected areas of the aquatic germplasm resources; The main measures and actions to promote the protection of the resources of the aquatic product. Therefore, the scores of “Publicity activities” index was 5 points.

2.4 Effectiveness of the management

(1) The takes the plant big leaf algae as the main protection object. Before 2009, the distribution area of the large-leaf algae in the south bank of the whole of the Sanggou Bay was about 1500 mu. After the establishment of the protection area, the coverage of the large-leaf algae was increased year by year, and the distribution area of the large-leaf algae was nearly 6000 mu, and the protection effect was obvious. Therefore, the score of “Conservation effectiveness” index was 5 points.

(2) Up to now, there have been no illegal incidents in the protected area in 2019. As a result, the score of “Regulatory effectiveness” was 5 points.

(3) Protected areas have a certain social influence, in five years in the county level and above the media received at least one positive publicity and coverage. According to the number and content of positive reports obtained, the score of “Social effectiveness” was 1 points.

山东威海市8处国家水产种质保护区生态“监控”实现全覆盖

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根据省海洋环境监测任务要求,2014年威海市新增了荣成楮岛、月湖2处国家级水产种质资源保护区常规性监测任务,至此,威海全市现有的8处国家级水产种质资源保护区全部纳入“监控”。

中国水产科学研究院专家到荣成楮岛水产种质资源保护区调研

于永超 威海蓝色发布 7月26日

近日,中国水产科学研究院资源与环境研究中心黄渤海国家级水产种质资源保护区管理能力提升项目组一行3人,到荣成楮岛藻类国家级水产种质资源保护区实地开展项目进展情况调研。

Fig.2-8 Positive media coverage

2.5 Score analysis

2.5.1 Score of each index

The score summary table is shown in the table below. The total area of the protection area is 74, according to the grade of the appraisal method, the appraisal grade is the “average” and belongs to the third file. The score of the partial index of the protected area is lower, and the overall score of the protection area is affected.

Table 2-1 Table of Score Summary for RIS

Foundation of the reserve (20)				Condition of management and protection (20)				The management measures (45)									Effectiveness of the management (15)			Total score
Ownership	Bonds	Functional zoning	Protection species	Facilities	Institutions	Staffing	Funds safeguard	The rules and regulations	Daily management	Law enforcement	Planning and its implementation	Scientific research	The dynamic monitoring	Ecological restoration	Communication and cooperation	Publicity activities	Conservation effectiveness	Regulatory effectiveness	Social influence	
5	5	5	5	2	1	5	1	5	5	3	5	5	1	5	0	5	5	5	1	74

Specifically, the “Foundation of the reserve” in the RIS scored 20 points, which indicated that the management and protection foundation of the reserve was very good, the scope boundary was reasonable, the functional division was reasonable, and the protection object was clear.

The protected area scored lower in terms of “Condition of management and protection”, only 9 of the 20 full points. Except for the higher scores in “Staffing”, the scores of “Facility”, “Institutions” and “Funds” were very low.

The score of “Management measures” in protected areas is in the middle level, and the score of 34 out of 45 points is mainly due to the low scores of “Dynamic monitoring” and “Communication and cooperation”, which is also related to the lack of some infrastructure in the protected areas.

The protection area in the “Effectiveness of the management”, the score is relatively high.

2.5.2 Main problems

Through the analysis, it is found that the main problems affecting the management ability of protected areas are “Condition of management and protection” and “Management measures” . Based on the evaluation score of protected areas, this paper summarizes the main problems existing in the management of protected areas, and carries out the work of improving the management ability of protected areas in view of the

problems.

(1) The contradiction between ecological protection and development. The contradiction between protection and development is not conducive to the effective management of protected areas, moderate development and regional management. How to coordinate nature protection and community development under the principle of moderate development is a major problem faced by many marine nature reserves at present. In the past, the policy of protected areas has focused on the impact of local community production activities on the ecological environment of protected areas, and little consideration has been paid to the social and economic impact of the establishment of protected areas on the community. The relevant policies prohibit the local community from having a traditional way of production and life behind nature conservation, but rarely consider looking for alternative ways of development for the community, resulting in the increasing contradiction between natural protection and community development.

(2) The system is not perfect and there is no formal management body. Management organization is not perfect, lack of funds and other reasons are also a major problem in the construction of protected areas. Because the construction of protected areas is a new work, the system from top to bottom is not perfect, the local government and management departments have not paid enough attention, the management institutions

are not perfect, the infrastructure is insufficient, and there is no later operating funds, which makes the management of protected areas difficult.

(3) Lack of cooperation and exchange. The protection area is currently in the newly-established stage, and the cooperation exchange activities with the relevant units are lacking, and the development of the protection area is restricted to a certain extent.

3. Improvement of management ability

According to the status of self-evaluation and scoring of protected areas and the main existing problems, the construction of improvement management capacity of protected areas should be carried out. The improvement of management ability is mainly aimed at the evaluation of management ability improvement of infrastructure such as management and care conditions, and drives the improvement of other projects through the improvement of basic conditions.

3.1 The work of Management ability improvement

The protection area is mainly through the work of the following aspects:

(1) Infrastructure construction: Increase the investment of infrastructure in the management and protection project of protected areas, increase the investment funds, and improve the infrastructure construction of protected areas.

(2) Accelerate the establishment of protected areas management system: Based on the current management institutions, strengthen the daily management and maintenance of protected areas, and promote the improvement of the establishment of protected areas institutions.

(3) Strengthen the dynamic scientific research and monitoring of protected areas: By increasing the number of monitoring points, the protected areas are monitored regularly and the first-hand scientific research data are accumulated.

(4) Strengthen communication and cooperation with other units: through the organization of seminars and assigned personnel to participate in training, to promote cooperation and exchanges with other units, but also to improve their own business level.

3.2 Evaluation of management ability improvement

According to “Management Regulations and Index System for Management Assessment of NAGRR”, combined with the procurement and construction of related equipment, assess the effectiveness of capacity enhancement in protected area management.

3.2.1 Condition of management and protection

(1) The protection area is put into the facilities for supporting and protecting the funds, signs and boundary pillars, and the equipment is being implemented and implemented as planned, and the equipment such as the unmanned aerial vehicle, the telescope, the quick-measuring

instrument and the like has been invested in the nature reserve at present, and build one sign stone tablet and one propaganda column. Through this work, the infrastructure conditions of the protected areas are improved remarkably, and the identification and the law enforcement equipment are improved. Therefore, the post-promotion "Facility "index was evaluated for 5 points.

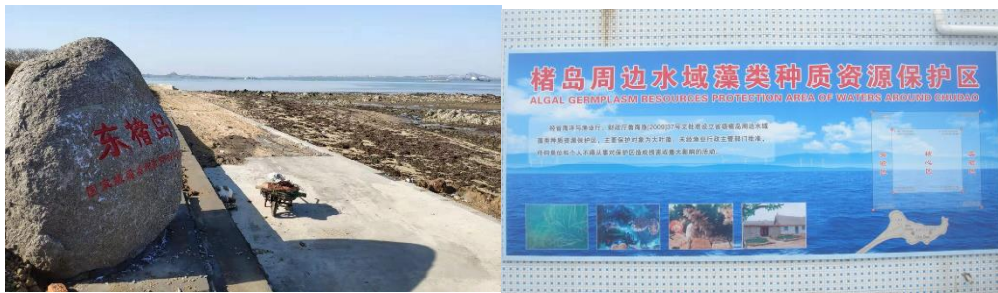


Fig 3-1 Protection zone boundary and propaganda column



Fig. 3-2 Basic equipment (Telescope, UAV, law enforcement recorder).

(2) In view of the problem of the imperfect management organization, in Rongcheng Marine Economic Development Center, there are offices, laboratories and other departments, which are specially responsible for the management of the protected areas, although not a full-time management organization, the management system has been basically established. Therefore, the post-promotion “Institutions” item was evaluated for 4 points.



Fig. 3-3 Office under protected area

(3) Through active struggle, the protected area has established a cooperative relationship with the China Academy of Fishery Sciences to obtain nearly 110000 CNY for the purchase of instruments and equipment, to a certain extent, and to alleviate the lack of operating funds for the protected area. Therefore, the post-promotion “Funds” index was evaluated for 4 points.

3.2.2 The management measures

(1) In view of the problem of fewer law enforcement check points in protected areas, the protected areas have hired observers in the society, established biological rescue and disaster prevention emergency plans,

basically guaranteed the effectiveness of law enforcement in protected areas, and regularly sent law enforcement nursing ships to supervise the law enforcement of protected areas. Therefore, the post-promotion “Law enforcement ” index was evaluated for 4 points.

(2) Rongcheng Marine Monitoring Center has organized the research of biological resources and water quality and environment monitoring of the reserve respectively. Four monitoring points have been set up in the reserve, annual monitoring, monitoring implementation plan, regular and irregular monitoring and monitoring have been adopted, and the scientific research monitoring ability of the protected area has been greatly improved by establishing a scientific research base in the center and purchasing experimental equipment. As a result, the “Dynamic monitoring” index scored 5 points after promotion.

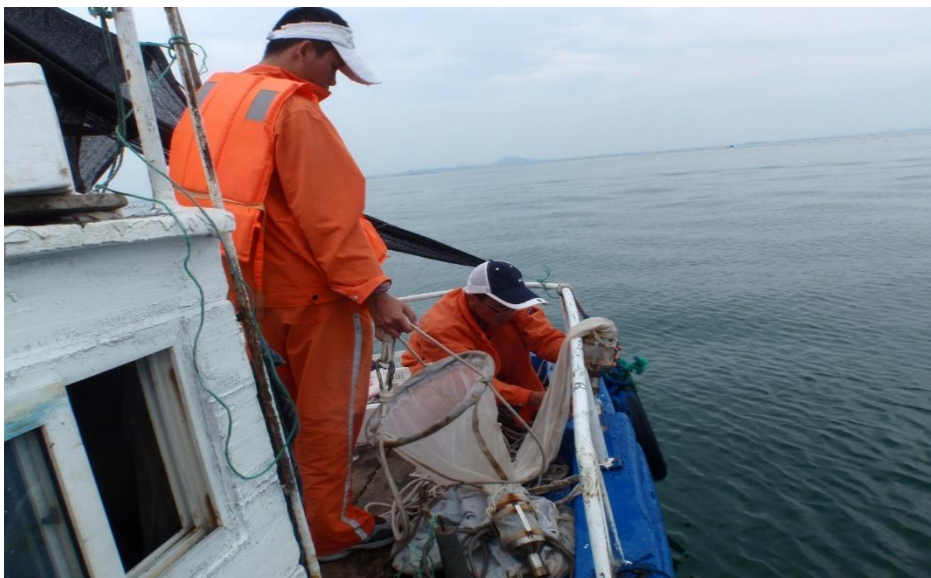




Fig. 3-5 Carry out scientific research and monitoring

(3) Recently, the protected areas hired relevant experts from China Ocean University to investigate and make academic reports on the protected areas, and the status of ecosystem resources in the protected areas was discussed and exchanged. Many people have been organized to carry out business training to China Ocean University and the Institute of Oceanography of the State Oceanic Administration, which has improved the professional and technical level of the base personnel. Therefore, after the promotion of “Communication and cooperation” scored 5 points.



Fig.3-6 Cooperate and exchange with relevant units



Fig. 3-7 Attend training

3.2.3 Summary of scores for improving Management ability

The summary table of the protection area scores after the management capacity is improved is shown in the table below. The total area of the protection area is 93, and the appraisal grade is raised from the “average” of the third gear to the “excellent” of the first gear. By applying

some measures to the protection area, the management ability of the protected area is obviously improved, and the evaluation index and the evaluation method of the project design can be used to provide reference and basis for the improvement of the management ability of the protected area.

4. Suggestions for relevant work

(1) Strengthen the administrative law enforcement of protected areas.

To organize a strong law enforcement team, strengthen administrative management, exercise administrative law enforcement power according to law, resolutely investigate and deal with illegal and illegal activities such as destroying the marine ecological environment and aquatic resources in the protected areas, and maintain the normal order of the protected areas.

(3) Carry out extensive propaganda reports

Make full use of various means of propaganda, carry out extensive publicity reports on protected areas, enhance public awareness of environmental protection and marine awareness, arouse local public attention to the protection of the ecological environment and biological germ resources, recognize, fully mobilize the enthusiasm of fishermen in production, participate in the management and maintenance of protected areas, form common protection, and protect each other.

(4) Exploring the development of ecotourism

To explore the exploration of ecotourism and to establish a mechanism to combine the economic interests of the local people and regions with the protection of natural ecology. In view of the rapid development of tourism in China and the successful practice of ecotourism in protected areas, it is suggested that the research on

ecotourism in protected areas should be strengthened and the management ability of tourism development activities should be improved.

5. Work plan for next year

(1) Increase training and improve the level of management and protection.

(2) Strengthen the inspection efforts and master the actual situation of management and protection.

(3) To carry out the proliferation test of leafy algae to improve the recovery of protected areas.

