

Marine Environment Monitoring in Shandong Province: State and Policy

Xie Ennian, Wei Yu, Gao Xiuzhi,
Ocean and Fishery Bureau of Shandong Province

Introduction

In 2006, we monitored the state and trend of marine environment in Shandong Province in the following area: discharge outfall of land-based pollution, red tide area, mariculture area, MPA, bathing place, travel resort area and dumping zones etc.

The monitoring result show that most of marine area is clean or relative clean. The polluted area is mainly located in Jiaozhou Bay, and the major pollutants are inorganic nitrogen and active phosphate.



The map of environmental monitoring station of the coastal and marine area in Shandong Province in 2006



The map of the coastal and marine polluted areas in Shandong Province in 2006

Water Quality in Nearshore area in coastal cities

Qingdao: the main pollutants include inorganic nitrogen, active phosphate, and oils, the their average concentration remain almost the same as those in 2005. Some areas in Jiaozhou Bay is seriously polluted by inorganic nitrogen and active phosphate.

Rizhao: the whole nearshore area meet Grade I seawater quality standard. Compared with 2005, the concentration of inorganic nitrogen decrease a little, and that of active phosphate and oils are basically same.

Yantai: the major pollutants are inorganic nitrogen and active phosphate. Some part of the area has been seriously polluted by inorganic nitrogen, the maximum concentration has exceeded grade IV seawater quality standard. In some area the concentration of active phosphate has exceeded grade II, and that of oils has exceeded grade I. The average concentration of inorganic nitrogen and active phosphate remain the same compared with last year, and oils concentration decrease a little.

Weihai: In some marine area, the concentration of inorganic nitrogen, inorganic phosphorus and oils has exceeded grade I seawater quality standard. The rest area has met grade I and water body quality is relatively good. The average concentration of oils, inorganic nitrogen and active phosphate remain basically same as those in 2005.



Sediment quality of nearshore area

As is shown in monitoring result, the sediment quality are generally good, the integrated potential ecological risk is low, and only the sediment in some area was polluted.

Weihai: the state of sediment quality is moderate, and the concentration of oils has exceeded grade II seawater quality standard in some area.

Rizhao, Qingdao, Yantai: the sediment quality is good in general, and all the area has met grade I seawater quality standard.

Environmental quality of key discharge outfall and adjacent area

Discharge outfall of sewage treatment plant in Xiaomai island: The major pollutants include suspended substance, BOD and COD. The adjacent area is travel resort area, and the water quality is inferior than grade I that marine functional zoning require. The sediment quality is inferior than grade II. So the environmental quality is identified as grade III (worse).



Status of discharge outfall of sewage treatment plant in Xiaomai island

Discharge outfall of sewage treatment plant in Tuan island: the major pollutants are COD, phosphate, BOD₅, suspended substance and fecal coliform. The integrated assessment result is grade B.



Status of discharge outfall of waste treatment plant in Tuan Island

The adjacent area is mariculture forbidden area, the water quality is inferior than grade II which marine functional zoning require. And sediment quality is inferior than grade II, So the environmental quality is identified as degrade III (worse).

Environmental quality in mariculture area



The monitoring result indicate that water quality in part of mariculture area has exceeded the standard, but the sediment quality is good in general.

Mariculture area in Yantai: the main cultured species include scallop, oyster, holothurian and kelp etc. Red tide was occurred one time during the culture period, the water body has showed the trend of eutrophication. The sediment quality is good.

Mariculture area in Rongcheng Chenshan Bay, Rushan Bay and Sanggou Bay: the concentration of dissolved oxygen has exceeded standard in some area, and the sediment quality is relatively good.

Environmental quality in bathing place

Water quality: the water quality in the key bathing place (Qingdao, Rizhao, Weihai, Yantai) is excellent.

Risk Assessment: During monitoring period, health index in every key beach is excellent, which reach the health standard that people can swim.

Swimming cosiness assessment: during monitoring period, the time suitable for swimming take up 66% of the total at 8:00 a.m., and reach 79% at 14:00 p.m. The reasons which hinder swimming are as follows: water temperature, marine wave, bad visibility.

Welcome to Ocean and fishery bureau of Shandong Province

Tel: 86-531-8697-3934

fax: 86-531-8697-3934

Address: 162 Jie fang Road, Jinan

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Travel resort area



Penglai travel resort area: Penlai is situated at northernmost of Jiaodong Peninsula, and it is national resort area which is called as human paradise.



The monitoring result show that water quality is quite suitable for recreational activities, such as marine sightseeing, boating, fishing, beach recreation, peasant family activities etc. During monitoring period, 87.9% of the time is suitable for marine sightseeing, boating, fishing and beach recreation, and 71.8% is suitable for peasant family activities. The weather is the main reason that affect recreational activities in this area.



Penglai

Yantai Golden beach area: This area is the firstly authorized AAA level travel resort area which cover 23.5 km². It combines the natural scenery with cultural landscape. The reception visitor reach about 30,000-50,000 in blooming season. The suitable recreation activities include fishing, boating, beach recreation. At the same time, marine and coastal sightseeing is also appropriate in the right season. The days which is good for marine sightseeing, coastal sightseeing, boating, fishing, beach recreation and peasant family activities reach 64.6%, 67.7%, 81.1%, 81.1%, 80.3% and 78.9% of the total during monitoring period.

Suspended substance is the major factor which affect marine and coastal sightseeing. And the weather condition also in hinder boating, fishing and peasant family activities.



Yantai travel resort area

Qingdao Shilaoren travel resort area: This area has beautiful scenery and pleasant climate which occupy 10.8km². There are about 3000,000 visitors every year. Now it has developed to be an attractive resort in north region.

As is shown in monitoring result, the days suitable for boating, fishing and beach recreation are 12.6% of the total. 44.3% of the total is suitable for peasant family activities, which is also the most comfortable one during monitoring period.



Qingdao Shilaoren travel resort area

Policy

In February 25-26 2006, Shandong Provincial Committee of the Communist Party of China and Shandong Provincial People's Government hold provincial ocean and fishery meeting. Gao Xinting, deputy director of Shandong Provincial Committee attended this meeting. Hou Yingmin, director of Shandong ocean and fishery bureau attended this meeting and presented important report "Implementing scientific concept of development and building up marine powerful province and modern fishery". This meeting pointed out the objective and outline of marine and fishery during the "eleventh five-year" programme, i.e. building up marine powerful province and modern fishery, reaching the objectives of "two improvement" and "three insurance", promoting leap-forward development of marine integrated management of Shandong, etc.



1. Administrative marine based on law , improve the administration along scientific, regularized and legal line

We established "Regulation of Shandong Sea Use Management", "Regulation of Shandong Marine Environmental Protection", "Regulation of Shandong Fishery Port and Boats Supervision", "Regulation of Fishery Management of Shandong Province". And we published "Shandong Marine Functional Zoning" and "Shandong Blue Sea Action Plan" and "Tentative Rule of Collection and Management of Royalties Imposed on Sea Use", actively implemented marine functional zoning, application and approval for the use of sea area, and sea area use remuneration system. At the same time, we implemented system of environmental impact assessment of coastal construction project and marine environmental bulletin, basically built marine environment monitoring and marine disaster prevention and mitigation network, and we reinforced law enforcement.

2. Regulate application and approval procedure for the use of sea area, control the reclamation sea use area

The application, notification, demonstration, approval procedure for the use of sea area has been further regulated.

3.Reinforce protection and management of fishery resource, rehabilitate fishery resource

In 2006, the fund for rehabilitate fishery resource account to 1.4 hundred million, with an increase of 16.7%, compared with 2005. And the fund for increasing fishery resource reach about 59000,000, with 40% increase.

4. Management in prohibited fishing areas and during closed season

In 2006, this work made great progress, we paid high attention to supervise the boat with more than 150 hp. Anyone who violate the law, we have his catch and unlawful income confiscated. All these work have made great contribution to the protection of fishery resource.

5.Reinforce legislation building and law enforcement, the work for safe marine and safe fishery has improved a lot.



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