Yellow Sea Regional Database System

January 2010

China-Korea Joint Ocean Research Center

www.ysdb.org
1. Overview

“Reducing Environmental Stress in the Yellow Sea Large Marine Ecosystem (YSLME)” is a United Nation Development Program/Global Environment Facility (UNDP/GEF) supported project by ministerial representatives of People's Republic of China and Republic of Korea serving together in a joint steering committee. The objective of the project is ecosystem-based, environmentally-sustainable management and use of the YSLME and its watershed by reducing development stress and promoting sustainable exploitation of the ecosystem from a densely populated, heavily urbanized, and industrialized semi-enclosed shelf sea. Under the 24 million dollar program, researchers from both China and Korea will conduct on-site studies in the Yellow Sea area on many scientific fields, including biodiversity, fishery, ecosystem, pollution, etc. During the implementation of the project, plentiful and heterogeneous data, both spatial and non-spatial, are produced and the quantity is growing rapidly. Therefore, there are strong requirements to handle these scientific data efficiently and provide convenient data sharing services for scientists and the public.

Sponsored by the YSLME Project Management Office, the “Yellow Sea Regional Database System” project is taken charged by the China-Korea Joint Ocean Research Center (CKJORC) and technically supported by the First Institute of Oceanography (FIO), SOA. This system takes advantage of spatial information technology to input, manage, query and display the multi-source and heterogeneous information of the Yellow Sea region, not only from the YSLME project but also from the other data centers, and provide convenient and efficient data sharing services through Internet. The long-term aim of the system is to promote international data exchange and scientific cooperation on the regional ecosystem environment in the Yellow Sea area. The main architecture of the system is shown in Fig.1.
2. Data Overview

The data sources of the system are as follows: data from "YSLME" project and data sets downloaded from other data centers. Through investigating the world data centers, we have found some data that can be downloaded. We downloaded the data and inputted them into the database to provide better data sharing services for the public. The collected data are stored and managed after processing.

The data in the Yellow Sea Database are classified into three categories, including “Observational Data”, “Statistic Data” and “Text Data”. And each categories data are classified into the sub groups. Users can choose the sub groups to query the three categories of the data. Now there are about 2,000,000 data records stored in the database. The general information of the data is listed in Fig 2.

![Fig 2 Data in the Yellow Sea database classification](image)
3. System Overview

The Yellow Sea Regional Database has applied the domain name www.ysdb.org for the website, which is understandable and easy to remember and access.

3.1 Homepage

Fig.3 shows the homepage of the system. The users can access each data search engine through the menu bar directly.

3.2 Search engine

The search engine of the Yellow Sea Regional Database System has three modules, including “Data Query”, “Map Query” and “Products”. “Data Query” module includes “Observation Data Query”, “Statistic Data Query” and “Text Data Query”.

Fig.3 Homepage
3.2.1 Data Query

In “Observation Data Query” module (Fig.4), users can choose the time range, spatial range (either input coordinates or select from map directly) and scientific parameters to query the data, which have specific time, spatial coordination and parameter value.

After click the "search" button, the observation stations which matched the search condition will be displayed on the table and users can directly click the stations to view the detailed parameter values. If users want to download the data, click the “Download” button, the data will be downloaded to user’s computer in the form of MS Excel.

Fig. 4 “Observation Data Query” module
In “Statistic Data Query” module (Fig. 5), users can input or choose the time range, region and scientific parameters to query the statistic data about the region in a specific time range.

In “Text Data Query” module (Fig. 6), users can search and download some text files such as unformatted data, research reports, regulations, laws and so on.
3.2.2 Map Query

“Map Query” module provide direct and visual operation of the Yellow Sea scientific data based on digital map through geographic information services (GIS). The map is comprised of colorful elevation image, administrative boundary data and scientific feature layers. The scientific feature layers were produced by the data collected not only from YSLME project, but from various data centers.

In “Map Query” module (Fig. 7), after users choose the time range, spatial range, parameter and click “Search” button, the observation stations which matched the condition will brightly display on the map and users can directly click “button and choose the stations to view the detail parameter values.
3.2.3 Product Query

“Products” module provide information of the maps products. We picked up the relative data from the database to make some products about the Yellow Sea.

In “Products” module (Fig.8), users can choose the time range, spatial range and scientific parameters to query the products, which have specific time, spatial coordination and parameter value.

After click the "search" button, users can choose the type of the product such as contour map, curve map, etc. So the products which matched the condition will be displayed on the table and users can click the “inquire” button to view the detailed parameter products.

Fig. 8 “Product” module
3.3 Questionnaire

In order to solicit suggestions from relevant regional experts and users, we made this questionnaire. We hope you can visit the website and fill the questionnaire about the database, because we need more comments and suggestions to help us improve the interface and functions of the database (Fig.9).

![Fig. 9 Questionnaire](image)

3.4 Message Board

Message board is designed to collect the questions and suggestions. Users can give us messages through this message board and we will reply users in time (Fig.10).

![Fig. 10 Message Board](image)
4. Contact us

Now, the Yellow Sea Regional Database System is operating to provide services for public. The database is maintained by China-Korea Joint Ocean Research Center (CKJORC) and the new data are kept collecting and inputted into the database. Welcome to use this system and give us your suggestion and ideas for the database improvement. If have any questions or need help, you can contact us.

The main team members of the project:

Mr. Mingyuan Zhu
Team leader, coordinate the implementation of the project
China-Korea Joint Ocean Research Center (CKJORC)
Tel: 86-532-8896-4792     Fax: 86-532-8896-4779
Email: zhumingyuan@fio.org.cn

Mr. Haixing Liu
System design
The First Institute Of Oceanography (FIO)
Tel: 86-532-8896-7412     Fax: 86-532-8896-7412
Email: liuhx@fio.org.cn

Mr. Shang Chen
Data analysis and data classification
China-Korea Joint Ocean Research Center (CKJORC)
Tel: 86-532-8896-2852     Fax: 86-532-8896-4779
Email: schen@fio.org.cn

Mr. Tianyun Su
GIS design and development
The First Institute Of Oceanography (FIO)
Tel: 86-532-8896-5565     Fax: 86-532-8896-5565
Email: sutiany@fio.org.cn

Mr. Jiyuan Man
Website development, system operation and maintenance
China-Korea Joint Ocean Research Center (CKJORC)
Tel: 86-532-8896-4825     Fax: 86-532-8896-4779
Email: man@ckjorc.org
Address: 6 Xianxialing Road, Qingdao, Shandong, P.R. China
P.C.: 266061
Tel: +86-532-8896-4977
Fax: +86-532-8896-4779
Email: ckjorc@fio.org.cn
Home Page: www.ckjorc.org

COPYRIGHT 2010
CHINA-KOREA JOINT OCEAN RESEARCH CENTER
ALL RIGHT RESERVED.