

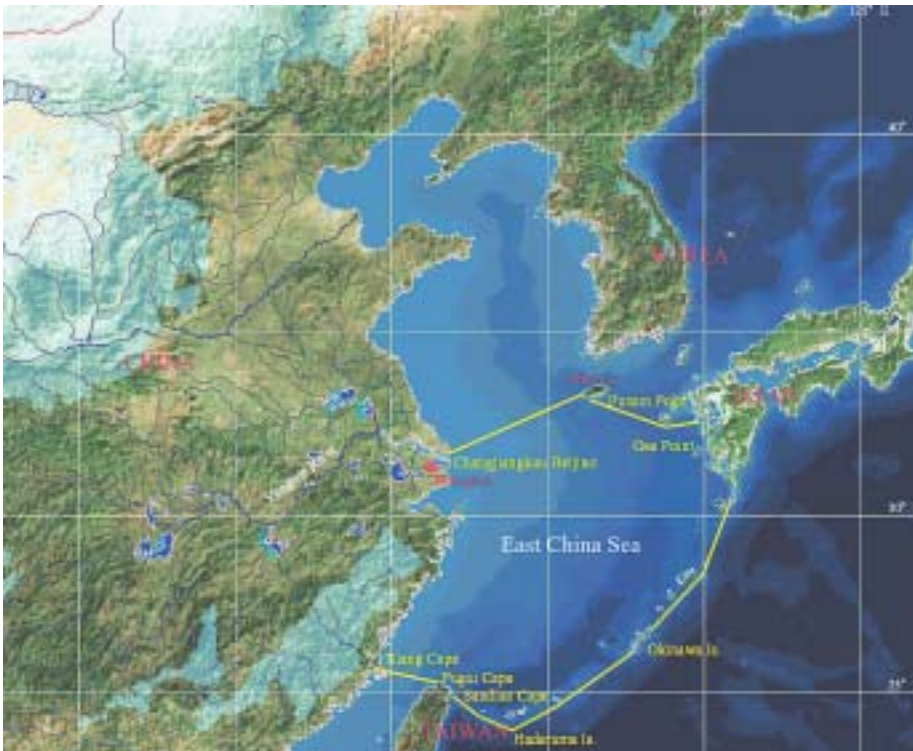
20 East China Sea

Overview

The East China Sea is a vast, shallow and semi-enclosed continental sea bordered by China, South Korea and Japan. It extends to the Taiwan Strait and is bounded to the North by the Yellow Sea. The East China Sea is affected by the warm and highly saline Kuroshio Current. The principal river draining into the sea is the Changjiang River of China.

< <http://na.nefsc.noaa.gov/lme/text/lme47.htm> >

Location



Basic information

Surface area : 752,000 km²
Volume : 263,000 km³
Average depth : 350 m
Maximum depth : 2720 m

Nature

< Background >

The East China Sea has a catchment area of 1,820,000 km².^{1,2} The shallow coastal area of the East China Sea is highly productive, providing spawning and nursery grounds for many marine species.

< <http://na.nefsc.noaa.gov/lme/text/lme47.htm> >

Climate

Shanghai, the largest city facing the East China Sea, enjoys a pleasant northern, subtropical maritime monsoon climate with four distinct seasons. Spring and autumn are relatively short compared to summer and winter. In 2000, the average annual temperature was 17.6 °C. The city had a frost-free period of 300 days, and received an annual rainfall of 1,302 mm. Almost 50 percent of the precipitation was during the May-September rainy season. The East China Sea area is also affected by typhoons and cyclones.

< <http://test.china.org.cn/english/features/60808.htm> >

Topography

The major part of the East China Sea sits on top of a shallow continental shelf. The shelf stretches out towards the Pacific Ocean until it reaches a deep trough located inside of the Nansei Islands.

Hydrology

The East China Sea receives an annual inflow of $9,513,000 \times 10^6 \text{ m}^3$ from the Changjiang River, the largest river in China.³ The hydrology of the East China Sea coastal current, which runs parallel to China's coastline, is strongly influenced by the inflow from the Changjiang River and other large rivers. It is also affected by monsoons. The Sea's salinity is low and its temperature and direction changes with the seasons.

< <http://na.nefsc.noaa.gov/lme/text/lme47.htm> >

< Surrounding environment >

Sediment from rivers

The East China Sea receives huge amount of fine sediments from two major rivers, the Changjiang and the Huanghe, via the Bohai Sea. Sediments are either directly discharged from the Changjiang River or are transported via the Bohai and Yellow Seas.⁴

History and Culture

Shanghai, the largest city in the East China Sea, began more than 1,000 years ago as a fishing village. It was officially designated as a market town in 1074 and a market city in 1159. The main activities at the time were fishing, farming, crafts, commerce and shipping. Shanghai continued to grow during the Ming dynasty (1368-1644). Near the beginning of the 15th century, when Shanghai had an estimated 64,000 households, a new channel was cut north to the Yangtze to permit better drainage and to keep the outlet to the Yangtze and the East China Sea from filling with silt. This also provided a much more reliable and shorter channel for river traffic to the Yangtze.

Shanghai grew rapidly during the Qing dynasty (1644-1911), when the development and use of cotton as a fabric material became widespread. By the 18th century, the city was a prosperous center of cotton farming, and fabric and garment production.

The Opium War between Britain and China ended with the Treaty of Nanjing in 1842, and a supplementary agreement was signed in 1843. As a result, China was forced to open Shanghai to British trade and residence. Other countries demanded and received similar privileges. British, French and American citizens were awarded small territorial zones north of the original-walled Chinese city. While there was some development and expansion, the foreign community numbered only a few hundred individuals until the late 19th century.

< <http://www.gotheborg.com/index.htm> >

After World War II, Shanghai was revived as a new-born city of China, and the steel, shipbuilding and chemical heavy industries grew. In recent years, the growth of light industry has been remarkable too. It is China's largest city of commerce and harbors, and models the modernization of the country.

< <http://japan.park.org/Japan/TokyoNet/aip/HOT/CITY/shanghai.html> >



< <http://www.edc.uri.edu/lme/text/east-china-sea.htm> >



< <http://www.gotheborg.com/index.htm> >

Social Environment

< Population >

The population in the catchment area of the East China Sea is approximately 510 million.^{1,2} By the end of 1998, Shanghai had a population of 13.05 million, representing 1 per cent of China's total population. The average population density in Shanghai stands at 2,059 per km².

< Industry >

Eastern China is experiencing rapid industrialization. Fishing activities have been conducted for a long period by China in this area. Aquaculture is also a growing economic activity in the region.

< <http://na.nefsc.noaa.gov/lme/text/lme47.htm> >

Environmental Problems

< Water and sediment quality >

Water quality

According to the annual environmental report by the Chinese government, water quality in most of the marine areas in China was in good condition in 2002. But heavily-polluted sea areas are still found in the East China Sea, along China's major ports and industrial cities in Jiangsu and Zhejiang, and Shanghai.

< http://www.zhb.gov.cn/english/SOE/soechina2000/english/marine/marine_e.htm>

Sediment quality

The Changjiang River directly deposits huge amount of sediment into the East China Sea. Also the Huanghe River indirectly deposits sediment via the Bohai and Yellow seas. Sedimentation rates in the coastal area of the East China Sea are between 1.5 and 2.1 cm per year.⁴

Red tides

Coastal China is an important economic area characterized by rapid economic development and a growing population. This has led to significant increases of wastewater and sewage discharge into the East China Sea, with eutrophication and frequent red tides as the harmful results of this development. Large-scale red tides occur every year from May to July in Sanmen Bay and Louqing Bay.⁵ Fisheries resources and mariculture operations are affected by these events, which lead to a reduction in ecological diversity, and health problems for the public.

< <http://na.nefsc.noaa.gov/lme/text/lme47.htm> >

In 2001, there were 77 red tides recorded in Chinese seas, of which 34 were in the East China Sea.

< <http://www.zhb.gov.cn/english/SOE/soechina2001/english/2-marine.htm> >

< Environmental Protection Measures >

Measures against red tides

Since 2001, the State Oceanic Administration of China has implemented red-tide prevention measures for the entire country. They have organized demonstration projects for red-tide monitoring, implemented mitigation measures in key sea areas and developed an information network for red-tide-related information.

National and international monitoring

The National Science Foundation of China (NSFC), supported the Yangtze River Estuary Nutrient Fluxes study (1998 - 2001) as a national project.

China and Japan conducted a joint study entitled 'Riverine Drainage and Environmental Capacity and Influence on Marine Ecosystems in the East China Sea'.

< http://ioc.unesco.org/goos/HOTO4/Hoto4_a14.htm >

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