

UNEP GPA IGR-2, Beijing

Multi-focal Benefits through Innovative Approaches to Coastal Conservation in Ningbo, PR China

通过海岸带保护的创新模式来
实现环境、社会和经济的综合效应

Ningbo Municipal Government

中国宁波

October 17, 2006

Location 地理位置

❖ Ningbo Municipality 宁波市

❧ Located 175 km south of Shanghai, borders Hangzhou Bay and the East China Sea

- ❖ Population 5,567,000
- ❖ sea area 9758 km²
- ❖ inter-tidal mudflat and marshes 410 km²
- ❖ coast line 788.3 Km

❖ Cixi City 慈溪市

❧ located north of Ningbo Municipality on the shore of Hangzhou Bay

- ❖ Population around 1,100,000.
- ❖ sea area 127million Chinese Mu
- ❖ tidal mudflat and marshes 614.6 thousand Chinese Mu
- ❖ coastal line 78.5km

Location 地理位置



GEF NWEF Project (1)慈溪项目简介

❖ Project Background

❧ WB Ningbo Water and Environmental Project (NWEF)

❖ NWEF has three components: i) Ningbo Water Supply (US\$157.9 million); ii) Cixi Wastewater (US\$128.0 million); and iii) Institutional Development (US\$4.5 million).

❧ The first project under the “Pollution Reduction Investment Fund for the Large Marine Ecosystems of East Asia” established by the World Bank and the Global Environmental Facility (GEF grant US\$ 5 million)

GEF NWEF Project (2)慈溪项目简介

❖ Project activities

- ❧ **Constructed Wetland for Tertiary Treatment of the 100,000 m³/d Cixi Wastewater Treatment Plant (US\$7.1 million);工程湿地**
- ❧ **Establishment of a Wetland Center (US\$8.00 million)湿地中心**
 - ❖ Development of a Wetland Center, including: i) enhancement and restoration of degraded wetland and tidal mudflats; ii) Visitor Center Building and associated facilities.
- ❧ **Design and Management support, including: i) a Wetland Center Management Assistance Contract with a NGO/university Consortium; ii) Engineering Design; and iii) Training and Dissemination of Project Experience (US\$2.00million)**

Wetland Center

慈溪市 GEF
湿地中心
范围示意图

43.5 km² 管理区

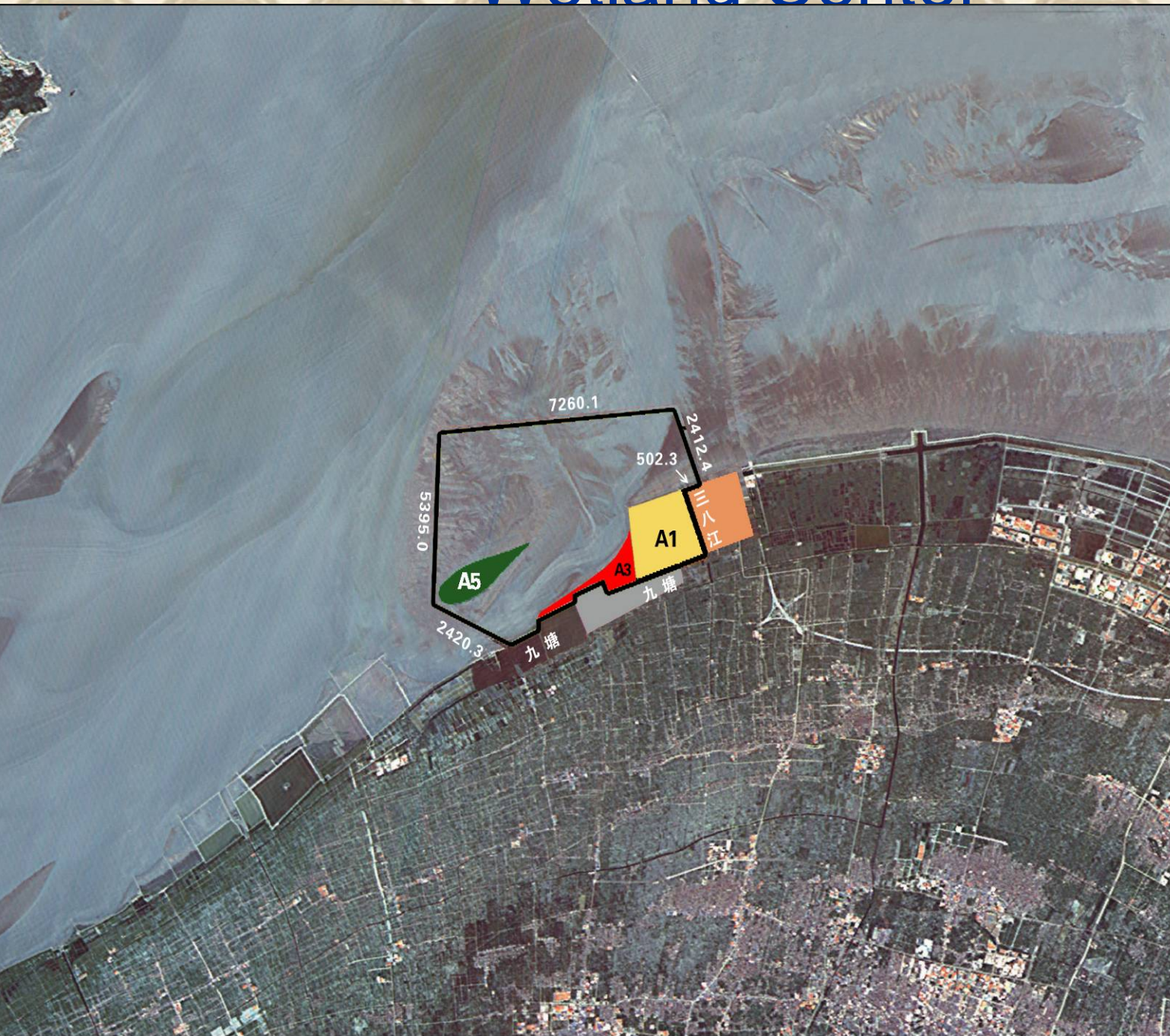
4.3 km² A1

1.4 km² A3

1.8 km² A5



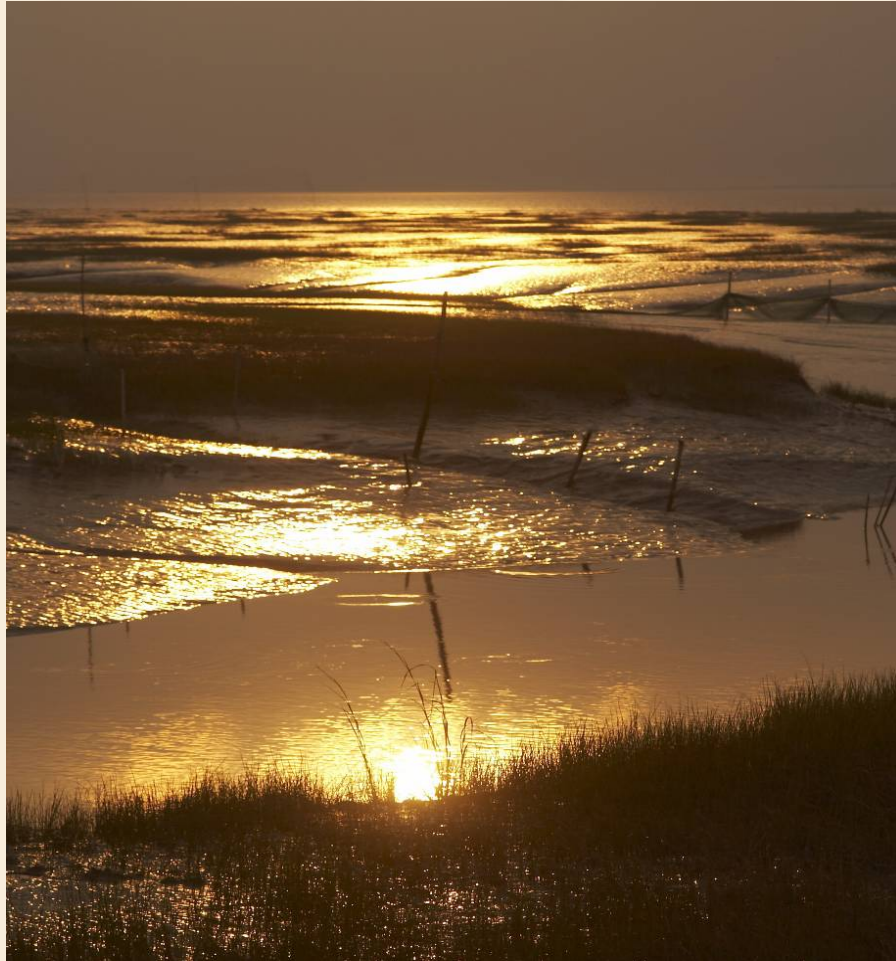
3 1.5 0 3 km



Visitor Center 教育中心概念图



GPA-related Objectives (1)



- ❖ **Simplify Wastewater Treatment**
- ❖ **Meet stringent effluent standards for discharge into environmentally sensitive receiving water bodies in China**
- ❖ **Reduce complex processes and high operation cost of traditional tertiary treatment**
- ❖ **Take advantage of the abundant reclaimed land in Cixi to develop a constructed wetland for tertiary treatment . It has lower operational costs and is a simple and robust treatment method**
- ❖ **Reduce land-based pollution along the Cixi coast and the East China Sea, promote the replication of innovative low cost wastewater treatment techniques, and encourage coastal zone conservation.**

GPA-related Objectives (2)

- ❖ **Consider Ecological Dimensions of Urban Development**
 - ∞ consider environmental and ecological amenities to enhance the quality of life and support the eco-system
 - ∞ help the natural wetland evolve to a high quality habitat for international migratory birds and for continuous repopulation of over-exploited coastal resources.



GAP-related Objectives (3)

❖ Take into Account Non-Point Source Water Pollution

- ❧ tackle non-point sources of pollution in order to achieve ambient water quality objectives
- ❧ demonstrate an innovative and ecologically friendly approach to non-point source control by filtering water from nearby canals through an enhanced wetland system in the Wetland Center to improve water quality.



GPA-related Objectives (4)

- ❖ Link non-point source pollution reduction with environmental education, wetland conservation and eco-tourism 将污染消减与环境教育、湿地保护和生态旅游有机结合
 - ∞ Wetland center as a center for environmental education and research 湿地中心用于环境教育
 - ∞ Wetland restoration and management 湿地恢复和管理
 - ∞ Bird watching based eco-tourism 观鸟为主的生态旅游



Partnerships for Vision Building

❖ Local partnership 本地

- ❧ Both Ningbo Municipality and Cixi City are committed to the success of the GEF project and the associated NWEF
- ❧ Ningbo Water and Environment Leading Group
- ❧ Cixi City Government has established Leading Group specifically for the GEF project
- ❧ GEF Project Expert Group
- ❧ Involvement of stakeholders in the project

❖ Domestic Partnership 国内

- ❧ Media publicizing and promoting the project through newspapers, TV and other media outlets
- ❧ Domestic experts join the expert group and offer technical assistance for the project voluntarily .
- ❧ NGOs show concerns to the project

Partnerships for Vision Building

❖ International Partnership

- ❧ WB/GEF US\$350,000 project preparation grant 35万美元项目准备赠款
- ❧ Two international study tours for cooperation with US, Japan and Hong Kong NGOs 两次国际考察
- ❧ Technical review and guidance from international wetland experts 国际湿地专家的技术审查和指导



Partnerships for Sustainability

- ❖ **Continuation of existing partnerships** 现有关系的持续
- ❖ **New partnership – an NGO-university-research institute consortium** 新的伙伴关系 – 环保组织/大学/研究机构的联合体
 - ✎ provide technical assistance for the effective and adaptive management ,identify appropriate management practices,monitoring , develop a financing mechanism for the sustainable operations of the Center after four years.
- ❖ **GEF International Waters Learning Exchange and Resource Network (for sharing knowledge/experience globally)**(全球环境基金国际水域知识交换和资源网络)
- ❖ **The GEF/UNDP/IMO Partnership for Environmental Management of the Seas of East Asia (PEMSEA) (for identifying replication opportunities within the region)** 全球环境基金/联合国发展署/国际海洋组织东亚海洋环境管理合作组织
- ❖ **UNEP GPA (Global Programme of Action for the Protection of the Marine Environment from Land-based Activities) (for transferring technical capacities to other locations within and outside of the region)**联合国环境署全球控制陆基活动保护海洋环境行动项目

Future Actions 行动计划

- ❖ **Design completion** 完成设计
 - ❧ June 2007
- ❖ **Construction completion** 完成施工
 - ❧ Constructed wetland
 - ❧ Wetland center (June 2009)
- ❖ **Operation** 运行
 - ❧ Constructed wetland
 - ❧ Wetland center (June 2009)



Expected Results 预期产出

- ❖ **Pollution reduction (both NWEF projects) in 2010**
 - ❧ BOD 10,000 MT/a, TN 2,000 MT/a, and TP 200 MT/a
 - ❧ Other pollutants (heavy metals etc.) to be determined
- ❖ **Wetland conservation 湿地保护 (baseline 2007)**
 - ❧ Birds species and quantities increase by 25% in 2010
 - ❧ bathos productivity increases by 25% in 2010
- ❖ **Environmental education 环境教育**
 - ❧ 100,000 visitors in 2010
- ❖ **Sustainable operation of the Wetland Center**
- ❖ **Replication and dissemination 复制和传播**

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