A Case Study on the Conservation and Restoration of Coastal Wetland at Hangzhou Bay

World Delta Dialogues 2013
Ho Chi Minh City, Vietnam
19-23 May 2013

Chen Kelin/Lu Yong
Wetlands International
Today’s presentation

- Introduction & Background
  - Project area
  - Project objectives
  - Function Zoning

- Sharing management measures and results
  - Demonstration of a simple, innovative low cost wastewater treatment techniques
  - Creating a wide variety of suitable habitats for wildlife
  - Encourage coastal zone conservation.
WB-GEF Project-Hangzhou Bay Wetland Center

▲ GEF funds of USD 5 million
▲ 4-year project, starting in 2007
▲ Design and development phase (2008-2009)
▲ Operations phase (2010-2011)

Project Area (43.5 km²)
- A1-reclaimed non-tidal land (4.3 km²)
- A3-tidal marshland (1.4 km²)
- A5-low lying island 2 km off the coast (1.8 km²)
- The tidal mudflats adjacent to these three plots (36 km²)
Targets:

- To enhance ecological functions of the coastal area
- To improve information for wetland management
- To improve water quality
- To ensure sustainability of the development
Two management zones:

Zone A: Freshwater Wetlands

Zone B: Natural, inter-tidal wetlands
Before creating the wetland in Zone A

2006: Agricultural land (cotton), fish ponds and experimental forestry plots.

November 2007: Dry, reclaimed land dominated with exotic Canadian Goldenrod and remnant salt-marsh vegetation (Tamarisk and Sueada).
Function Zoning-Freshwater Wetlands in Zone A

Creating freshwater wetlands:

4 Sub-Zones

A1-wildlife wetlands

A2-Public Demonstration Area

A3-Waste Water Treatment Wetland

A4-Forested wetlands

Each with a different focus and objective
**A1: Wildlife Wetlands:**

A series of variable depth wetlands designed to support existing wildlife and attract new wildlife into the site. Total size of this zone is 116ha.

Three management sub-units:
A1.1: High tide waterbird roost and feeding areas
A1.2: Open water sub-zones
A1.3: Reed beds
A2: Public Demonstration Area (PDA)

Consisting of a 63ha. zoned wetland activity area

A showcase environmental education centre for recreation, education and research.
Zone A3: Constructed treatment wetland (CTW)

A3.1 Treatment Cell No. 1 – aesthetics and EE
A3.2 Treatment Cell No. 2 – aesthetics and EE
A3.3 Treatment Cell No. 3 – Treatment and water supply
A3.4 Treatment Cell No. 4 – Treatment and water supply
A4: Woodland

Existing 53ha. experimental forestry plot intersected with canals.

Habitat for a colony of nesting waterbirds

Buffer area between the PDA and the coastal road.
Sharing management measures and results

• 1. Demonstration of a simple, innovative low cost wastewater treatment techniques

• 2. Creating a wide variety of suitable habitats for wildlife to control and manipulate water levels within Zone A.

• 3. Encourage coastal zone conservation.
Outcome 1: Demonstration of a simple, innovative low cost wastewater treatment techniques

75 ha Constructed Treatment Wetland (CTW) – Nitrogen Reduction Capacity up to 10-15 ton/year during testing period
Outcome 2:
Creating a wide variety of suitable habitats for wildlife to control and manipulate water levels within Zone A.
To create and maintain high tide roost sites for waterbirds in Zone A
To create and maintain open water habitats for wintering and breeding waterbirds such as ducks, grebes, etc.

Target water depths (20cm to 100cm)

Control vegetation to ensure 40% of sub-unit is open water

Baer’s Pochard (Dec 2010 – Jan 2011

To create and maintain open water habitats for wintering and breeding waterbirds such as ducks, grebes, etc.
To manage reed beds to attract and maintain breeding and wintering populations of wildlife species of high conservation significance and public interest.
Outcome 3: Encourage coastal zone conservation

Outcome: Increased bird abundance and species diversity
• Bird species recorded on site: increase of 243% over the number of species recorded in the 2007 baseline.
• Bird Families recorded on site: increase of 77 %
• Waterbird population sizes (Max counts): increase of 37%.
• Attraction of Rare and Threatened Species: 13 globally endangered species were also recorded.

Outcome: Number of visitors to the Wetland Center
• July 2010 - Sept 2011: 90,992 visitors recorded.
Globally endangered Baer’s Pochard (Aythya baeri) recorded in the managed freshwater wetlands in December 2010 and January 2011. The regular occurrence of this rare species could attract international bird watchers, and future habitat management at HBWC should target this as a focal species for conservation.
Thank You!

谢谢！