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Mai Po Wetland Habitat Fact Sheet

Gei wai

Introduction

Gei wai (literally meaning a pond enclosed by bunds) are traditional tidal shrimp ponds constructed in coastal areas. In Asia, people living and working in bays or estuarine areas have a long history in producing shrimp, fish, oysters, algae and brackish water sedges from *Gei wai*. In Hong Kong, knowledge of this practice did not arrive until the mid-1940s, when a wave of immigrants from China came into the territory. *Gei wai* were constructed by dredging water channels around stands of mangrove and then using the dredged mud to build a bund to enclose the water and mangroves. A sluice gate was constructed at the seaward side to control the inflow and outflow of water and thus set water-level heights. By opening the sluice gate during high tide in autumn, young shrimp are flushed into the *Gei wai* from the adjacent bay. Thus the production of shrimp relies heavily on the natural productivity in the bay. The shrimp feed on naturally occurring organic matter, e.g. dead mangrove leaves on the bottom of the pond. As a result, fishermen protected the mangrove stands inside the pond as a source of food for the shrimp and fish. The shrimp species of main commercial importance is *Metapenaeus ensis* (*Gei wai* shrimp) but fish, such as *Mugil cephalus* (Grey mullet) was also harvested.

Shrimp harvesting takes place from the end of April until October or November. Harvesting is usually carried out at night when shrimp are most active by setting up a net at the sluice gate to collect shrimp as water flows out towards the sea at low tide. The pond is then refilled with seawater the next morning. A *Gei wai* can be harvested up to 80 times annually. In winter, after the harvesting season, the *Gei wai* are completely drained to harvest the remaining fish inside. This traditional way of rearing and harvesting *Gei wai* shrimp is a good example of how coastal wetlands can be managed sustainably, i.e. so that they can be of benefit to local communities, with minimal impact to the natural environment.

Ecological Value

Gei wai are highly productive habitats. They support vast numbers of aquatic/marine invertebrates (shrimps, crabs etc.) and fish, and also provide food to other wildlife including waterbirds, mammals and reptiles.

The slow drain-down of *Gei wai* in winter provides an important feeding opportunity for waterbirds and can attract up to 1,600, herons, egrets and the endangered Black-faced Spoonbill *Platalea minor*, into a single *Gei wai*. They feed on non-commercial fish and shrimp trapped in the shallow pools of water. Eurasian Otter *Lutra lutra* may also be attracted by the draining as evidenced by records of their footprints beside the pools of water.

Our Management

Nowadays the 17 brackish water *Gei wai* inside Mai Po (each approximately 10ha) managed by WWF-HK are probably the only *Gei wai* that remain in Hong Kong. Several of the *Gei wai* are managed entirely using the original techniques brought to Hong Kong by the immigrants and as such are believed to be the last traditionally managed *Gei wai* in Asia. Through active management and enhancement work, WWF-HK provides a variety of roosting and breeding habitats inside the *Gei wai* for wildlife. An example is the creation of a large shallow water *Gei wai* called the "scrape", which provides a safe refuge for thousands of shorebirds to roost during high tide. WWF-HK created islands on the scrape for shorebirds to roost and these islands are also regularly used by breeding pairs of Black-winged Stilt *Himantopus himantopus* and Greater Painted Snipe *Rostratula benghalensis*. In winter, the water-level inside the scrape is raised to serve as a night roost area for duck.

Gei wai shrimp harvesting is still practiced by WWF-HK to demonstrate sustainable management practices and wise use principles so that the Hong Kong public can learn about this unique form of land-use, but also to retain an important cultural legacy.



A draining *Gei wai* in winter provides good feeding opportunities for waterbirds.
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