

Dapeng Bay

Join Wangye Ecotours

National Scenic Area Administration
Wetlands Park

Why are wetlands important?

For a long time, wetlands were taken as petty, useless areas around the world. They were even used for dumping trash. But nowadays, people have come to realize their values. They can modulate water intake, stabilize the coastal ecological system, and serve as habitats for animals and plants. Guided tours may be held at wetlands to promote environmental restoration, too.

How wetlands purify water?

All water pollutants can be removed through the workings of vegetation, water and other substances of wetlands. The wetlands also trap and remove pollutants, suspended matters, and nutrient salts, turning the worthless into the valuable.

How were constructed wetlands built?

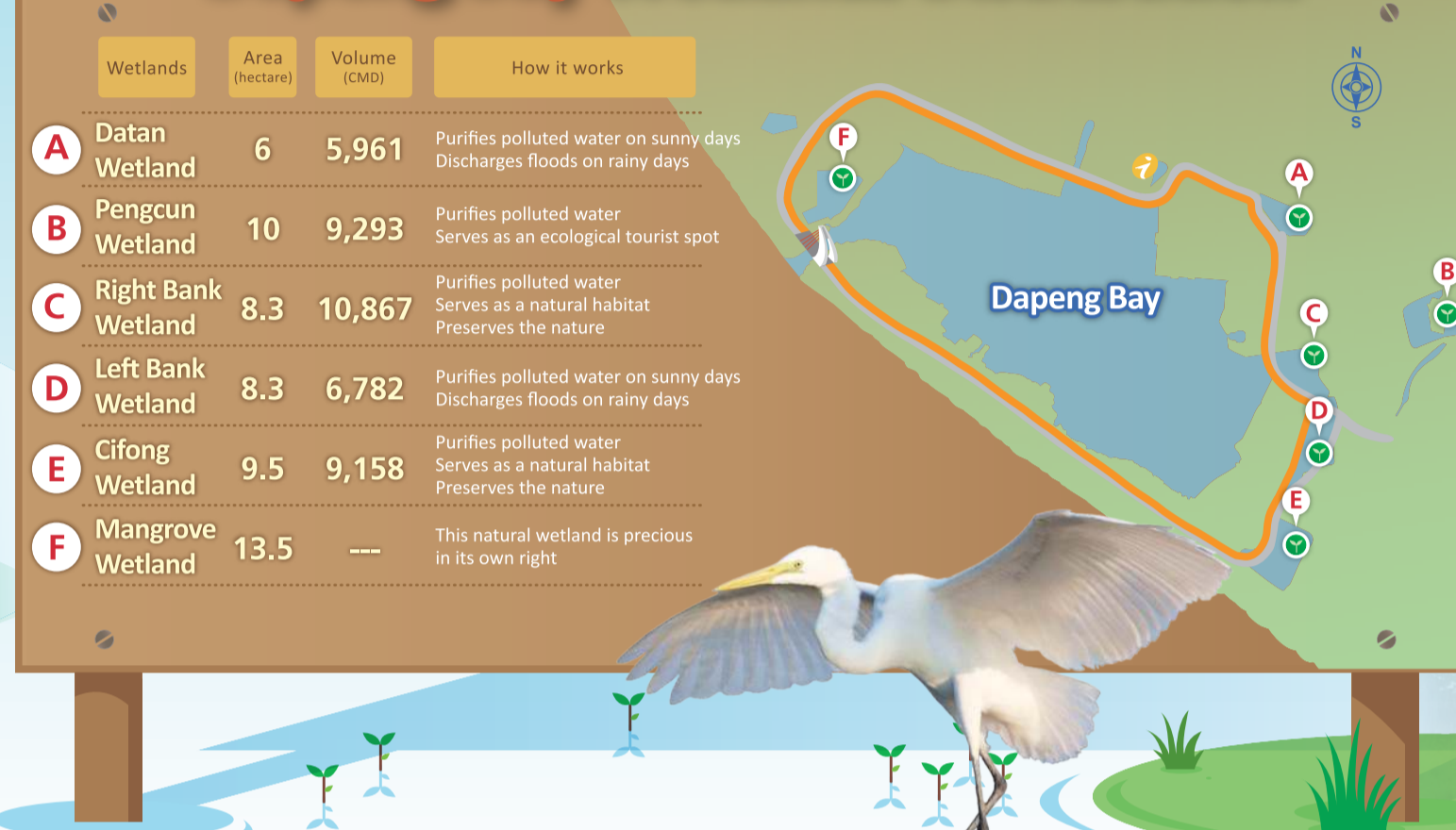
For a long time, the Dapeng Bay suffered from polluted water and thick layers of silt produced by nearby fishery ponds and surrounded communities. To solve the problems, the Dapeng Bay National Scenic Area Administration turned some nearby deserted ponds into constructed wetlands. Unlike most other constructed wetlands around the world, these are saltwater ones that can modulate the climate and improve the environment.



kandelia!



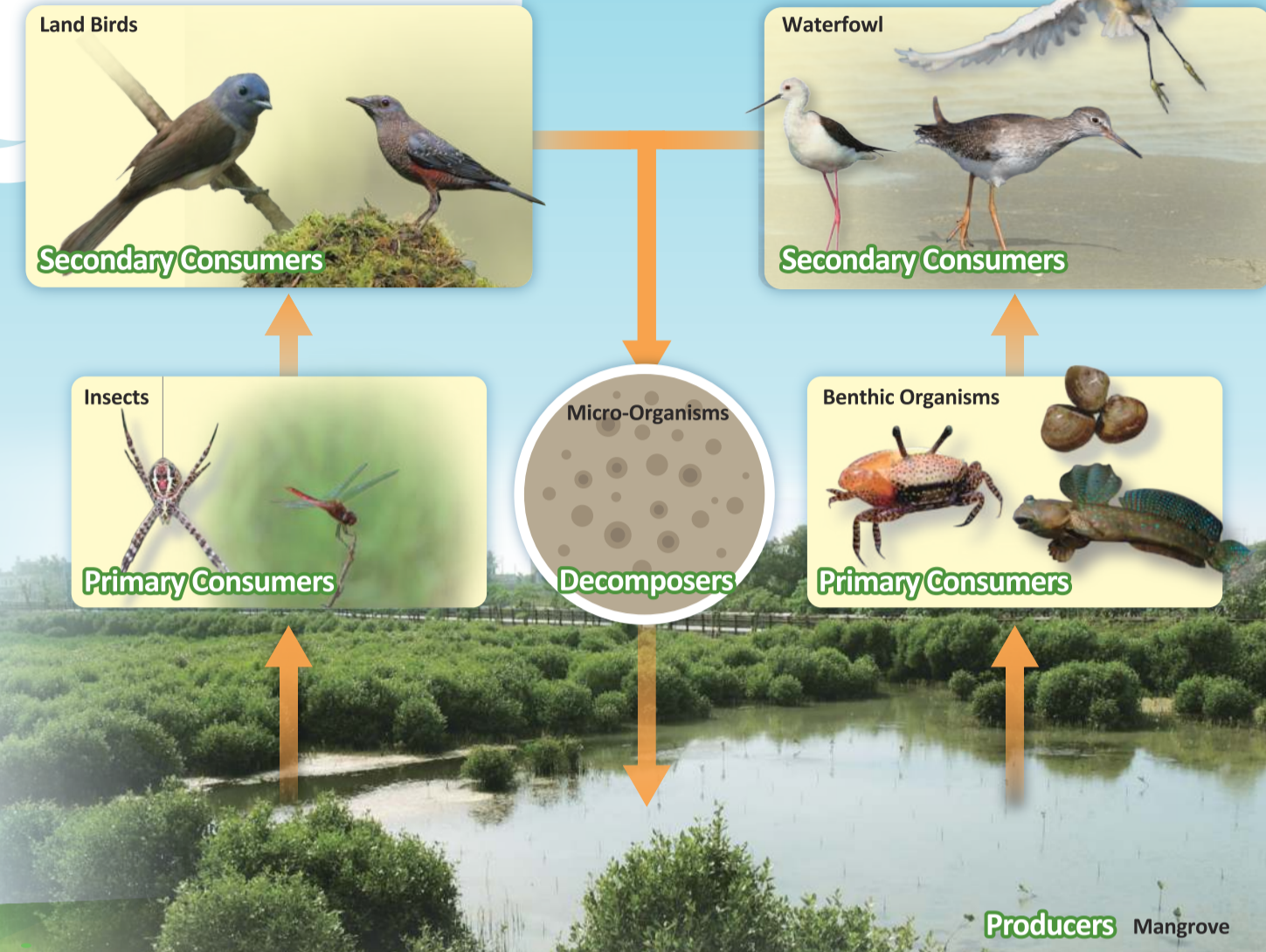
Dapeng Bay Wetlands Distribution



Mangrove Swampland Ecological System

The mangrove swamp covering the intertidal zone has a complex network of life, with a constant flow of energy and cycling of material maintaining an ecological balance and making this an ideal classroom for nature observation. Because of the large difference between high and low tides, the flora and fauna here have evolved unique ways of life which they display with the turning of the tide and changing of the reasons.

The mangrove swamp has the richest productivity of all wetland ecologies, with the oxygen released by the mangroves through photosynthesis helping to produce organic materials that nourish an abundance of fish, shrimp, crabs and shellfish which are in turn a source of food to waterfowl. The excreta of all these animals provide fertilizer to fuel the growth of the mangroves.



The Encyclopedia of Marine Life

Mangrove

In the Dapeng Bay's man-made wetlands, there successfully grow diverse types of mangroves, such as *Lumnitzera racemosa*, *Avicennia marina*, *Rhizophora stylosa*, and *Kandelia candel*. *Avicennia marina* trees with over-70-year-old aerial roots, growing in the intertidal zones of estuarine areas, are the main species of trees in the wetlands.

Fiddler crab

Fiddler crabs change their shell color according to the external environment, the hours of a day, and morning and evening tides. Male fiddler crabs are known for their oversized claws. Because some fiddler crabs build interesting underground tunnel-like burrows, they are much favored by wildlife observers. It is also fun to watch how they use their other small claws to eat, tug themselves into their burrows, make feces-like sediment balls near to their burrows, move along with the tides, and fight against their natural enemies. Their mating behavior is also very unique.

Jellyfish

Jellyfish are coelenterates that sting their enemies or prey using nematocysts. Their "jelly," i.e. mesoglea, is surrounded by two layers of protective skin. The top layer can help them move and sense light, while the inner layer contains digestive and reproductive organs. A jellyfish's body is composed of 95-97% water. Most jellyfish are highly poisonous. If you are attacked by a jellyfish, there are many ways to spare yourself from pain. You may consider pouring vinegar (4-5%) onto the wound, wash off the nematocysts with aluminum sulfate solution (3-20%), or spill dry sand or powder over the wound and then apply ice compress.

Mudskipper

Mudskippers are lively little creatures living in muddy areas. These amphibian fish are capable of staying on the land for a long time, as if they were carrying a full-sized aqua lung. Can you tell the difference between mudskippers and great blue-spotted mudskippers? Here are some tips: find out the mudskippers' distinctive eye positions, territorial behaviors, burrow shapes, how they breathe and mate, as well as the ways they crawl, jump using walking stick-like pectoral fins and sucker-like pelvic fins.

Migratory bird & resident bird

Birds that live in the same place all year round are called resident birds. Their counterparts that move from one place to another depending on seasonal changes are called migratory birds. At the Dapeng Bay, some migratory birds stay in summer, some in winter, and others only for a short period of time before heading to their final destinations. There are even vagrant birds that stay here because they are lost or for other various reasons. Taiwan is an important stop on many birds' migration routes. This makes winter especially a good season for watching migratory birds at the bay area.

Plant and animal species at the constructed wetlands

Plants

(1)Wetland plants: black mangrove, red mangrove, *Kandelia obovata*, *Picrasma aphanthoides*, *Myoporum bontioides* A. Gray, *Goodeniaceae*, lesser bulrush., Indian amporweed, reed, beach morning glory, Indian salt wort, sea purslane, Maximowicz's saltbush, knot grass, wigeongrass, *Gracilaria tenuistipitata* var. *liui*, and looking-glass mangrove.

(2)Landscape plants: *Palaquium formosanum* Hayata, Indian almond, Cuban bast, rose wood, sea mango, Chinaberry, large-leaf banyan, poonga-oil tree, sweet viburnum, Chinese rain tree, Chinese pistache, fragrant pittosporum, coconut, Chinese fan-palm, Alexandrian laurel, Macaranga, powder-puff tree, *Podocarpus costalis* (locally known as Arius), silvery messerschmidia, Taiwan persimmon, headache tree, Chinese holly, coast persimmon, swamp gelonium, Indian barringtonia, etc.

Birds

If you want to know whether a certain ecological system works steadily, you should check out its variety of birds. When it comes to a healthy wetland, different avian species should be found in its shallow water areas, marshes and land vegetation. In turn, this makes the wetland ecology more diverse. Presently a large number of egrets, plovers, sandpipers and snipes have settled here. More new species are being found, too. This shows the ecological system of the Dapeng Bay constructed wetlands has become more stable than before.

You can easily find the following bird species here: black-winged stilt, Chinese little bittern, cinnamon bittern, little ringed plover, Kentish plover, wood sandpiper, white wagtail, yellow wagtail, red-bellied thrush, black-naped blue monarch, blue rock thrush, little egret, great egret, and intermediate egret.

Others

There are amphibians (turtle, skink, lizard, gecko, rice field frog, Asian common toad, etc.), crustaceans (various kinds of fiddler crab, sesarma crab, mud crab, *Balanus*, shrimp larva, etc.), fish (small mudkipper, Japanese black porgy, milkfish, grouper, yellow striped goatfish, tilapia, and various other kinds of small fish...), mollusks (oyster, Asian green mussel, blood clam, etc.), spiders, and many other insects at the wetlands. Special creatures like jellyfish, sea horses and crab-eating frogs can also be seen.



Fiddler crab Fighting!

Ecological conservation zones

The Sedimentation Pool

The aquatic plants in the sedimentation pool act like spoilters; when the water flows through the small particulate matter enlarges because of impact and sinks to the bottom, and the layer of clear water on the top of the pool, free of floating matter, flows into the filtration pond to undergo preliminary filtration. This also increases time for aeration.

The Filtration Pool

The filtration pool uses pebbles and brick shards which are piled by size into filtration layers. When the water flows through the filter bed, the particles are blocked by the filter bed with different layers, leaving the water cleaner.

The Mangrove Marsh Area Ponds

True mangroves and minor mangroves are grown here to reduce pollution. The true mangroves include red mangrove, black mangrove, white-flowered mangrove, *Kandelia (Kandelia obovata)* and blinding tree.

The Gardening Ecological Ponds

These ponds are of various depths. We expect mangroves to grow into full-sized vegetation in shallow water areas, and fish to freely swim in the deep open waters. Constructed island habitats are also to be set for birds and terrestrial animals. We hope that diversified wetland ecology will come in place in the near future.

