



THE ISSUE

The Mai Po Nature Reserve (MPNR) is nested within the Mai Po Inner Deep Bay Ramsar Site, located along the southern bank of the Pearl River estuary, and is part of the Site of Special Scientific Interest (SSSI) zone. It is also part of the larger Ramsar site; an important staging area and wintering ground along the East Asian-Australasian Flyway (EAAF) for many species of migratory waterbirds among which are globally threatened species. A flagship species for Mai Po is the black-faced spoonbill (*Platalea minor*), with about 10% of the global population using Mai Po and the Inner Deep Bay as a wintering ground, giving MPNR regional, and global, significance for migratory waterbird conservation.

In addition to its role in conserving migratory waterbirds, Mai Po is also a refuge for Hong Kong's wetland biodiversity, supporting species such as the Eurasian otter (*Lutra lutra*), leopard cat (*Felis bengalensis*), four-spot midget (*Mortonagrion hirosei*), and Hong Kong bent-winged firefly (*Pteroptyx maipo*).

But wetlands are highly dynamic ecosystems and must be intensely managed to provide the range of habitats necessary to support the ecologically diverse community of species. The reserve is zoned and managed under controlled hydrological regimes as shallow and deep open water areas, reedbed dominated ponds, rain-fed ponds, and traditionally operated shrimp ponds (*gei wai*), which represent the last remaining examples of a traditional, sustainable practice of wetland management for aquaculture, and is now showcased in the reserve.

But climate change projections predict sea level rise and stronger storms will affect the ecology of MPNR, creating additional challenges in the future. Maintaining the diversity of habitat types will therefore require climate change-integrated management strategies that look to the future before potential adaptation strategies are lost. A climate model applied to MPNR shows that while the wetlands in MPNR will become affected, several fishponds further inland, and in the Wetland Conservation Area will remain unimpacted. These should thus be protected from conversion to hard infrastructure as a climate adaptation strategy to support the migratory birds, and thus contribute to the functionality of the flyway.

WHAT WE ARE DOING

WWF-Hong Kong manages and monitors MPNR following the prescriptions of a five-year management plan, and with support from the Agriculture, Fisheries and Conservation Department (AFCD). The current management plan, prepared in 2019, includes a research plan and forward-looking climate adaptation plans, based on a climate impact study.

OUR ASK

The future of MPNR and its contribution as an integral core area and stepping-stone corridor for birds along the EAAF will depend on maintaining and providing appropriate habitat for the migratory waterbirds. WWF-Hong Kong strives for improving habitat management and species conservation in MPNR by developing innovative and science-based solutions which have been included in the five-year management plan. In addition, climate adaptation strategies in the plan should inform the next management plan for the Mai Po Inner Deep Bay Ramsar Site, which will be reviewed and renewed in 2021.

‘Climate proofing’ the nature reserve will have to look outwards to secure available wetland habitats in the Ramsar Site and even beyond, in the Wetland Conservation Area (WCA). Doing so will require that the current wetlands and fishponds are conserved and managed, with no conversion to hard infrastructure. Where possible, we ask that degraded or abandoned fishponds in the WCA be included within the Ramsar Site. Several fishponds in the Inner Deep Bay are owned by private developers, and proactive intervention is needed to ensure these wetlands are protected and managed to optimize their conservation value for the future.

We ask that innovative strategies are supported to maintain and sustain the wetlands. For instance, we have proposed piloting floating solar PV on some fishponds to provide additional revenue from feed-in tariff to the grid to fishpond operators to incentivize them to maintain the fishponds, rather than allowing the ponds to be converted to hard infrastructure. Other added revenue can be accrued from nature-based and education tourism, and also payments as compensation from nature-based disaster risk mitigation, since the wetlands can act as buffers against storm surges and typhoons that can impact the settled and developed areas inland.