

# MPA NEWS



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## Perspective | Success in the smallest marine reserve of Taiwan: A triumph anchored by effective enforcement, stakeholder support, and replenishment

**Editor's note:** The authors of this piece have conducted fisheries research on Houbihu marine reserve, described below. Ming-Shiou Jeng is a research fellow at Biodiversity Research Center, Academia Sinica in Taiwan. Colin Wen is a faculty member in the Department of Life Science, Tunghai University, in Taiwan. Jeng-Ping Chen is a biologist at the Taiwan Ocean Research Institute.

**By Ming-Shiou Jeng, Colin KC Wen, Jeng-Ping Chen**

No-take marine reserves are increasingly designated in tropical coral reefs with the goals of maintaining biodiversity and subsidizing fisheries. However, due to lack of enforcement and replenishment, many cases of reserves - including most of Taiwan's - have exhibited little difference in diversity or abundance inside their boundaries compared to outside. These reserves have become "paper parks" where illegal fishing continues. Failed marine reserves lead to disappointment in local communities and discourage the advocacy and designation of more reserves in future.

However, Taiwan's smallest marine reserve (just 0.5 hectares) - called Houbihu and located in Kenting National Park, south Taiwan - is emerging as a success story, albeit an unusual one. The success of this reserve stems from strong enforcement by the national park police starting in 2005. Shortly after enforcement began, the increasing abundance and diversity of coral reef fishes gave rise to a local dive tourism industry and garnered the support of local guides. Nonetheless, in the first five years, little to no recovery of large predatory fish populations was observed in the reserve.

This changed in 2010. During that year's typhoon season, a large number of native groupers (*Epinephelidae*) were accidentally released from destroyed marine farms. A small number of groupers recolonized around Houbihu reserve where these groupers had previously been overfished. This reserve became the only diving spot in Taiwan with regular sightings of large predatory fishes.

With effective enforcement, local stakeholder support, and this accidental but fortuitous replenishment of fish, the Houbihu marine reserve stands today as the smallest but most successful marine reserve in Taiwan - as measured both by fish biomass and tourism. The success of this reserve evokes an old Chinese saying - right time, right place, and right person - where multiple factors have converged to form the keys to success. We urge governments and stakeholders to recognize that marine reserves, even small ones, can deliver real benefits with their support and the right circumstances.

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