

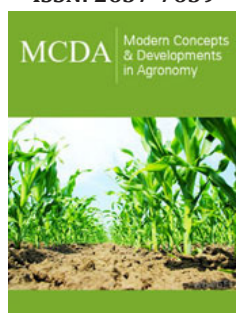
# Biodiversity Reduction in China's Mangrove

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## Opinion

Mangroves play an important role in purifying seawater, resisting wind and waves, maintaining biodiversity, carbon sequestration and carbon storage. Mangrove forests in China are mainly distributed in Guangdong, Guangxi, Fujian, Hainan, Zhejiang, and other provinces. The mangrove area of Baibu Gulf, located in the northwest of the South China Sea, accounts for about 2/3 of the total mangrove area in China. In the past 70 years, the area of mangrove forests in China has been decreasing, especially reaching the lowest point in 2001. The Chinese government has taken a series of measures to increase the area of mangroves [1], which is rare in the case of a sharp decline in the global mangrove area over the past two decades. However, the reduction in biodiversity has led to a reduction in the total area of mangroves in China.

There are 37 species of native mangrove plants in China, half of which are rare and endangered to different degrees. In particular, the number of wild individuals of *Sonneratia hainanensis*, *Sonneratia ovata*, and *Sonneratia paracaseolaris* was less than 50 [2]. Human disturbance caused by pond aquaculture and port construction not only led to the dwarfing, thinning, and even death of mangroves [3] but also led to a rapid decline in the density of burrowing crabs [4]. A large amount of kaolin-containing sewage flows into the mangrove area, resulting in extensive damage to the mangroves in the Beibu Gulf, and more than 95% of *Sonneratia apetala* and *Rhizophora stylosa* have died. The large-scale invasion of water lice, barnacles, enteromorpha, and *Spartina alterniflora* has made the progress of mangrove protection and restoration slow.

However, the rapid reduction in biodiversity has led to the degradation of mangrove communities, habitat fragmentation, habitat quality degradation, and ecological function reduction [5]. Overfishing and collection also seriously damaged mangrove habitats [6]. The invasion of exotic species such as *Spartina alterniflora* led to the serious degradation of mangroves in Fujian and other places [7]. With global warming in the future, the acidification of mangrove habitats caused by atmospheric sedimentation will seriously affect the population composition and quantity of benthic animals such as shellfish, fish, shrimp, and crabs [8]. The increase of the overwintering base of pests such as *Lasignatha cellifera* and *Orgyia postica* will affect the growth and survival of mangrove plants [9]. Rising sea levels could accelerate the loss of mangroves [10].

Although habitat degradation has been well controlled, the reduction of biodiversity has seriously threatened the ecological security of mangrove forests in China. Therefore, it is suggested to upgrade the Beibu Gulf Mangrove Nature Reserve to a national park, establish a coordination mechanism for the overall protection of mangroves, and promote the comprehensive management of exotic species invasion of mangroves from the national level.

The Ministry of Ecology and Environment should investigate and deal with a number of major cases involving mangrove illegality, and severely crack down on illegal hunting, fishing, deforestation, and land occupation. The Association for Science and Technology organizes national mangrove science popularization activities to further enhance people's awareness of ecological protection priorities and curb the man-made destruction of mangroves. The conservation and restoration of mangroves should focus on the seeding afforestation of mangrove plants of *Sonneratia Linn.f.*, and effectively curb the reduction of biodiversity by reducing human disturbance and increasing habitat.

## References

1. Wang W, Fu H, Lee SY, Fan H, Wang M (2020) Can strict protection stop the decline of mangrove ecosystems in China? from rapid destruction to rampant degradation. *Forests* 11(1): 55.
2. Zhang Y, Chen G, Zhong C (2021) Research on endangered mangrove species and recovery status in China. *J Appl Oceanogr* 40(1): 142-153.
3. Wang Y, Zuo P, Huang Z, Zhou X (2006) Study of the change of mangrove wetland ecosystem and driving forces in Donzhaigang. *Sichuan Environ* 25(3): 44-49.
4. Lin J, He X, Wang J, Lin H, Huang Y, et al. (2016) Macrobenthic diversity and seasonal changes in the mangrove swamp of Luoyangjiang Estuary, Fujian province. *Biodiversity* 24(7): 791-801.
5. Jia M, Wang Z, Mao D, Wang C, Li C (2021) Spatial-temporal changes of China's mangrove forests over the past 50 years: an analysis towards the sustainable development goals (SDGs) *Chinese Sci Bull* 66(30): 3886-3901.
6. Dan X, Liao B, Wu Z, Wu H, Bao D, Dan W, Liu S (2016) Resources, conservation status and main threats of mangrove wetlands in China. *Ecol Environ Sci* 25: 1237-1243.
7. Mao D, Liu M, Wang Z, Li L, Man W, Jia M, Zhang Y (2019) Rapid invasion of *Spartina Alterniflora* in the coastal zone of mainland China: Spatiotemporal patterns and human prevention. *Sensors* 19(10): 2308.
8. Kroeker KJ, Micheli F, Gambi MC, Martz TR (2011) Divergent ecosystem responses within a benthic marine community to ocean acidification. *Proc Natl Acad Sci* 108(35): 14515-14520.
9. Zhang J, She Z, Lin J, Chen G (2006) A study on growth of artificial mangrove forest and plant diseases and insect pests. *Ecol Sci* 25(4): 367-370.
10. Saintilan N, Khan NS, Ashe E, Kelleway JJ, Rogers K, et al. (2020) Thresholds of mangrove survival under rapid sea level rise. *Science* 368(6495): 1118-1121.