

专论与综述

# 红树林生物多样性恢复

叶勇, 翁劲, 卢昌义, 陈光程

近海海洋环境科学国家重点实验室(厦门大学), 厦门361005

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**摘要** 从红树植物及与之密切相关的底栖动物的多样性恢复出发, 分析了我国当前红树林恢复存在的主要问题, 并提出了对此需要着重进行的基础研究思路。在红树植物多样性恢复方面, 胎生种类的繁殖体在母树上就已萌发, 成熟繁殖体可直接用于海滩造林, 大多数种类已用于红树林恢复; 而非胎生红树植物繁殖体的萌发脱离母树, 成熟繁殖体难以直接用于海滩造林, 其育苗具有一定难度, 因此较少用于红树林恢复, 可以通过非胎生红树植物的种子休眠、生理生态和化感作用等方面的研究, 极大地增加红树植物生态恢复的种类。在动物多样性恢复方面, 底栖动物生物多样性恢复还是“非定向”的, 可通过在具类似底质、盐度和潮位的河口海岸地段不同恢复时间的人工红树林, 研究红树林植被不同恢复措施(主要是种植密度和种类选择)对底栖动物多样性的影响, 使得红树林的生态恢复在改造生态系统其它生物组份上不会呈现盲目性和不可预测性。

**关键词** [红树植物](#); [底栖动物](#); [生态恢复](#)

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## Mangrove biodiversity restoration

YE Yong, WENG Jing, LU Chang-Yi, CHEN Guang-Cheng

State Key Laboratory of Marine Environmental Science, Xiamen University, Xiamen 361005, China

**Abstract** Recently, developments in coastal areas severely destroyed mangrove forests and resulted in biodiversity decrease in coastal wetlands. Therefore, great importance was attached to mangrove restoration to protect biodiversity in coastal wetlands. Biodiversity restoration should become an important goal of mangrove replanting. In this paper, in terms of biodiversity restoration of mangrove flora and benthic fauna, main problems in mangrove restoration in China were analyzed and some basic research strategies were brought forward.

For mangrove plant diversity restoration, most viviparous species were used in mangrove restoration because their propagules germinate before they leave mother trees and they can be directly used in afforestation in coastal beaches. However, few non-viviparous species were used in mangrove restoration because their mature propagules germinate after they leave mother trees and it is difficult in direct plantation in coastal beaches. In China, although non-viviparous species make up 60 percent of the total mangrove plant species, mangrove restoration was focused on viviparous species. To improve mangrove plant diversity, some researches should be enhanced as follows. Firstly, germination traits of non-viviparous mangrove species should be studied. Only after types, processes and ecological conditions of seed dormancy are correctly realized, high successfulness can be insured in nursery of non-viviparous species and enough seedlings can be provided for mangrove restoration. Secondly, eco-physiological researches should be also enhanced to provide important basis on mangrove biodiversity restoration. Thirdly, more researches on allelopathy between mangrove species should be carried out to give theoretic basis on better mangrove restoration performance.

Mangrove restoration was settled only on vegetation restoration and much attention was paid to nursery techniques and area selection for afforestation. However, restoration of ecosystem functions was not considered as a goal in mangrove restoration, especially the function of mangrove vegetation to maintain other subsystems such as benthic fauna. In terms of faunal diversity, it is still “non-directional” for mangrove restoration. Therefore, it is necessary to study the effects of vegetatio

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n restoration methods on benthic faunal diversity, in order not to make other subsystems' reconstruction blind and uncertain after vegetation restoration. Effects of mangrove plant species on benthic faunal diversity restoration should be thoroughly studied. Through field controlled trials and laboratory simulated experiments, differences in benthic animal species and quantities under mangroves with different dominant species should be studied to explore the differences in feeding preferences of main benthic animals to mangrove leaves including food selectivity and animal-plant nutritive relation, from which the relationships between remediation of benthic faunal subsystems and mangrove planting species can be realized. Differences in benthic animal species and quantities under mangroves with different planting densities should be also studied to obtain the relationships between remediation of benthic faunal subsystems and mangrove planting density. Meanwhile, through analyses of sediment, mangrove biomass and litter falls, reconstruction of mangrove vegetation to sediments should be studied to explore the relationships between ecological remediation of benthic faunal subsystems and changes in sedimental physical-chemical characteristics during mangrove restoration processes.

**Key words** mangrove species; benthic fauna; ecological restoration

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通讯作者 叶勇 [yeyong5564@tom.com](mailto:yeyong5564@tom.com)