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Resilience of mangroves on the south coast of Havana province, Cuba

Worldwide, two thirds of the mangrove forests disappeared in 1980–2005, mainly due to human impacts. This study illustrates, through cases in Cuba, Mexico and USA, how natural regeneration and restoration support mangrove resilience. In Havana province, a belowground freshwater barrier, which was constructed across coastal wetlands and mangroves, led to land-cover changes. The corresponding changes in site conditions, mainly increased flooding, explain the regeneration pattern of the mangrove cover. Suitable management of the disturbed areas can support mangrove recovery. A methodological approach, based on qualitative mathematical modelling, is proposed for improving the assessment and management of the resilience of environmental systems.