

ABSTRACT

Marine Protected Areas (MPAs) can function to meet conservation, tourism, and fisheries objectives. However, effective MPA planning and management is often constrained by limited institutional capacity, a lack of data, and a lack of knowledge integration. If MPAs are to be useful tools for marine resource management, integrated management plans based on applied research must be designed and documented.

The goal of this study was to reduce conflicts between tourism and conservation at the Mu Koh Chang National Marine Park, Thailand, by drafting a multiple-use zoning plan. Two studies were conducted to provide the basis for the draft zoning plan. The first study, a coral reef field survey, assessed differences among sites for four criteria: trampling vulnerability, coral life form diversity, coral reef sizes, and suitability for restoring degraded branching *Acropora* spp. corals (which are threatened throughout much of their range and provide important habitat for many species). The second study administered a survey in four languages to 275 respondents taking part in organized snorkelling tours, and assessed visitor satisfaction, differences in perceptions between subgroups of people, and “Limits of Acceptable Change” (LAC) for social and biophysical indicators of high-quality snorkelling experiences.

Six key management recommendations were derived from the coral reef field study and the visitor survey. First of all, a Conservation Zone with tourism and fisheries strictly prohibited should be designated at a site with high vulnerability to trampling, high coral life form diversity, the largest coral reef size, and suitable areas for restoring *Acropora* spp.. Second, a Restoration Zone, with tourism and fisheries strictly prohibited, should be designated at a heavily degraded site with large amounts of dead *Acropora* spp.. Third, Tourism Zones should be established and promoted for intensive snorkelling at two sites deep enough to prevent snorkellers from trampling corals, yet shallow enough to permit people floating on the surface to view coral reefs. Fourth, all other snorkelling and diving sites should be designated as Ecotourism Zones managed for more peaceful settings, characterized by fewer people (LAC: 30 people max.), fewer boats (LAC: two boats max.), and smaller boats. Ecotourism Zones are likely to be particularly important for satisfying European and North American tourists, who were shown to be more sensitive to crowding than most Thai visitors. Fifth, the following LAC standards for coral conditions should be applied within both Ecotourism and Tourism Zones: (i) proportion of dead corals < 40%, (ii) patches of dead corals < 25 m². Finally, ‘no-take’ zones should be enforced within both Ecotourism Zones and Tourism Zones, in order to contribute towards conservation and restoration objectives, reduce visitor exposure to fishing gear, enhance visitor safety, enhance fish

community aesthetics, and improve satisfaction among visitors with a lot of previous experience snorkelling.

This draft zoning plan should be combined with visitor education and nature interpretation programs, fisheries considerations, and improved management of coastal tourism development and aquaculture. Extensive public review is also required, and co-management and adaptive management approaches should be taken during plan implementation.