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Reef Resilience in Coral Reef Research and Management

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Abstract

Coral reefs are one of the most biologically diverse and environmentally sensitive ecosystems. Climate change and rising sea temperatures have been identified as one of the biggest threats to coral reefs, compounding existing pressures caused by anthropogenic influences such as overfishing and pollution. Identifying reef habitats and coral species that are more tolerant of such stresses is therefore important in conserving overall coral reef diversity and biomass. Recent coral bleaching events induced by elevated sea temperatures have resulted in unprecedented coral mortality across the world. However some reefs and coral species have withstood bleaching better than others. Similarly, recovery after mass mortality events has been patchy and resulted in phase shifts in species composition. Understanding such dynamics as well as environmental and physical variables affecting reef resilience and recovery is key to effective management of coral reefs and associated biota. Incorporating resilience parameters into adaptive management strategies is now considered an important aspect of Marine Protected Area management. Coral reef research in Sri Lanka has for a large part been isolated and lacking long term monitoring and time series data. In addition, management has been reactive and often static rather than predictive and adaptive. Key aspects of reef resilience and its importance in management strategies will be discussed in this presentation.

Keywords: Coral reef, Climate change, Reef resilience