Section 2. Toolkit Introduction

This **R**2—Reef Resilience—toolkit is designed primarily for use by Marine Protected Area (MPA) managers, trainers, and policymakers. Entrusted with protecting coral reefs, they face significant challenges because these ecosystems are highly vulnerable to the demographic, economic, and environmental changes expected during the next century. **R**2 builds upon the principle that effective management is fundamental to ensure reef survival. Comprised of two extensive topic streams—Coral Bleaching and Reef Fish Spawning Aggregations—the toolkit will help practitioners begin to build resilience into their coral reef conservation programs. This toolkit should improve the ability of valuable natural systems to survive anticipated rapid changes and provide for escalating human needs.

Coral Bleaching Disk

The Coral Bleaching Stream examines the definition, causes, and consequences of coral bleaching and recognizes that mass bleaching does not affect all corals equally on any reef system. Building on this, the toolkit provides information and approaches to assist MPA managers examine factors that may help coral communities either to resist or recover quickly from bleaching events. It also helps them identify the locations of resistant communities. These communities provide vital refugia that are essential to the recovery and survival of areas prone to degradation from multiple causes, including mass bleaching. Protection of these refugia is the second underlying principle of the toolkit. The later sections of this disk, while constrained by the current state of knowledge on the subject, propose specific actions that MPA managers can take to diminish the impacts of mass bleaching at different scales, from national to local.

As our knowledge of the issues surrounding coral bleaching improves, and our understanding of better ways to deal with it becomes apparent, new iterations of this toolkit may be anticipated.

Spawning Aggregation Disk

This Fish Spawning Aggregations (FSA) Stream introduces the topic in general terms. Designed to help MPA managers locate reef fish spawning aggregations, it also suggests ways to begin the political and implementation processes for effective protection of the special locations that are the sole source for new generations of the fishes that spawn in them. It is recommended that the disk be used along with the Manual for the Study and Conservation of Reef Fish Spawning Aggregations, which can be downloaded via a link on the disk. Produced by the Society for the Conservation of Reef Fish Aggregations (http://www.scrfa.org), this document is an essential companion volume and provides additional details for those interested in delving deeper into the subject of reef fish spawning aggregations. While fishes that aggregate to spawn may use widely dispersed habitats during different life stages, the focus of the toolkit is primarily on the protection of these aggregations because they are highly vulnerable to overfishing.

As we learn more about the biology and management of FSAs, future iterations of the toolkit are likely to expand to include more comprehensive conservation actions for aggregating species.