

Bio-physical Benefits of Managing MPAs as a Network

Nicolas J. Pilcher

Marine Research Foundation

136 Lorong Pokok Seraya 2

Taman Khidmat, Kota Kinabalu,

Sabah, Malaysia

E-mail Address: npilcher@mrf-asia.org

Marine Protected Areas (MPAs) safeguard coastal and oceanic species by providing refugia, secure developmental habitat and protection at critical life stage junctures through either spatial and temporal access and use restrictions, or a combination thereof. Large MPAs sometimes encompass the broad range of life history stages for species of concern, but more often than not MPAs are small and focus on critical, obvious life stages and do not adequately address the complexity of species life histories. Protected areas have been established to safeguard marine turtle nesting beaches for instance, and critical spawning grounds for commercially-valuable groupers and wrasses. However, female marine turtles spend a small fraction of their lives on beaches, and males rarely emerge at all. Protogynous groupers and wrasses are critically threatened at spawning aggregation areas, but juvenile development habitats are equally important to ensure a balanced sex ratio in later life stages.

In order to more effectively protect a broader range of life history traits, it is necessary to protect a wider range of marine habitats, based on a solid understanding of the biology and life history parameters of the species in question. Some of these areas are not always the first to emerge as priority conservation units until the biological linkages have been established.

A network of protected areas to safeguard marine turtles in the Sulu Sulawesi Seascape (SSS), which was recently adopted by the tri-partite Sulu Sulawesi Marine Ecoregion Sub-Committee for Threatened, Charismatic and Migratory Species, demonstrates this principle through a solid understanding of migratory routes and bottlenecks, foraging grounds and nesting areas, and interesting habitats. A string of 13 distinct areas were proposed under this framework to form part of the Tri-National Sea Turtle Corridor within the SSS. Potential benefits of the MPA network include the conservation of a major marine natural and cultural resource; strengthened regional economies through new or enhanced opportunities for tourism and recreation; efficient protection of turtle resources through integration of conservation and management objectives; improved public access to scientific information and decision-making about turtle resources; Nations are able to protect and conserve species whose life cycles span multiple jurisdictions;



greater government agency efficiency exists through cooperation and integration; and MPAs in other nations are linked to address shared conservation issues.