

Safe Harbors for our Future: An Overview of Marine Protected Areas

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Abstract

In the late 1800s and early 1900s, recreational fishers, especially in southern California, began to realize that populations of their favorite gamefish were in decline. Since 1952, 53 marine refuges, sanctuaries and ecological preserves, with varying levels of protection, have been established, totaling 2.2% of state waters. Of these, 10 are no-take reserves (0.2 % of state waters). In 1999, Californians voted to give the California Department of Fish & Game the responsibility for establishing a network of marine protected areas (MPAs) throughout the state. These portions of the coastline are set aside to protect and restore habitats, to conserve biological diversity, to serve as scientific baselines from which to judge future change in ocean ecosystems, to promote recreational and educational activities, and to enhance depleted fisheries. The science and politics of MPAs are hotly contested topics today. Although scientists agree that MPAs are important conservation and management tools, some stakeholders who exploit nearshore marine species for a living or for pleasure are not willing to set aside no-take reserves. The debate over their fairness to these stakeholders and also the efficacy of MPAs can derail or delay their establishment. Similarly, the site location and size of new MPAs depends not only on hydrographic and ecological criteria (the goal is to link reserves via larval dispersal) but also political and socioeconomic considerations. Once MPAs are established, their effect on nearshore marine community structure and on individual species population dynamics, compared to unprotected control sites, must be assessed by a comprehensive yet pragmatic monitoring program. A group of government and university biologists (CRANE) are currently developing state-wide protocols for subtidal monitoring using SCUBA and ROV surveys. Finally, adaptive management of MPAs and conscientious enforcement efforts are essential to the success of the reserve. Now is the time for intensive research to support the establishment of MPAs and demonstrate their efficacy for marine conservation.