

Office of National Marine Sanctuaries Science Review of Artificial Reefs

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# Office Of National Marine Sanctuaries Science Review Of Artificial Reefs

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## Office Of National Marine Sanctuaries Science Review Of Artificial Reefs:

Office of National Marine Sanctuaries Science Review of Artificial Reefs Noaa Office of National Marine Sanctuaries, 2014-01-31 Artificial reefs are human made structures that are either deliberately or unintentionally submerged underwater commonly with the result of mimicking some characteristics of a natural reef Artificial reefs alter local habitat by providing hard substrate and complex vertical relief where typically none previously existed Bohnsack and Sutherland 1985 Sheehy and Vik 1992 Sheehy and Vik 2010 They may be created from a variety of sources and materials including the intentional sinking of ships and barges rubble concrete rocks stone boulders steel and metal etc Baine 2001 They may also be created through unintentional means e g shipwrecks that can become historical in nature and through structures built for other purposes e g decommissioned oil and gas platforms breakwaters1 jetties bridges offshore lighthouses air force towers navigational aids marine data buoys etc These various materials have benefits and drawbacks when used in artificial reef Office of National Marine Sanctuaries Science Review of Artificial Reefs Kathy Broughton, 2012 construction Gulf of Mexico Reefs: Past, Present and Future Adrienne M. S. Correa, Nancy Knowlton, Joshua D. Voss, Daniel M. Holstein, Rowan C. Interrelationships Between Corals and Fisheries Stephen A. Bortone, Ph.D., 2014-07-17 Martindale.2021-09-28 Interrelationships Between Corals and Fisheries is derived from a workshop held by the Gulf of Mexico Fishery Management Council in Tampa Florida in May 2013 where world authorities came together to discuss the current problems in managing tropical fisheries and offered suggestions for future directions for both researchers and environmental resource managers This book addresses current and emerging threats as well as challenges and opportunities for managing corals and associated fisheries It provides an information baseline toward a better understanding of how corals and the consequences of coral condition influence fish populations especially as they relate to management of those populations. The book contains content from presentations modified as a result of interactions and discussions with colleagues and peer reviews by global experts in corals and fisheries Many chapters include additional materials not presented in the workshop There are also papers that were not presented at the workshop but contribute to the central theme of the book Topics covered include Global decline in coral reefs and impacts on fishery yields Distribution and diversity in the Gulf of Mexico Implementation of Coral Habitat Areas of Particular Concern CHAPCs Deepwater coral sponge habitats Coral populations on offshore platforms Mangrove connectivity for sustaining coral reef fisheries Restoring deepwater coral ecosystems and fisheries after the Deepwater Horizon oil spill Predictive mapping of coral reef fish Covering a range of subject matter most of the chapters offer suggestions for future research on the interrelationships between corals and fisheries In addition the final chapter presents a summary on these interrelationships and discusses managing them for the future Marine Ecosystem Restoration (MER) - Challenges and New Horizons Brian Silliman, Avigdor Abelson, Christine Angelini, Gesche Krause, Megan Irene Saunders, Tjisse Van Der Heide, 2023-10-23 Worldwide marine ecosystems have been lost and degraded due to

anthropogenic disturbances For example oyster reefs have declined by at least 85% coral reefs by 19% seagrasses by 29% North American salt marshes by 42% and mangroves by 35% from the early 19th century Deepwater reefs and deep sea vents are not immune and have also been reduced in extent in many areas Factors driving these losses include habitat destruction pollution invasive species overfishing trawling mining and more recently climate change effects such as ocean warming species range changes and acidification These habitat declines are occurring at a time when marine waters are being used at or near their maximum productive capacity to meet the contemporary needs of an ever increasing human population Because coastal and marine ecosystems generate some of the richest biodiversity hotspots on Earth and provide critical ecosystem services including storm protection fisheries production and carbon storage over 1 billion US dollars have been spent globally in an attempt to halt and reverse observed declines Early conservation efforts aimed at protecting these valuable and threatened habitats focused on reducing human impacts and physical stressors However with habitat degradation continuing and sometimes increasing in rate it is now clear conservation alone will not be sufficient to protect and reestablish coastal ecosystems Habitat restoration although in existence for many decades has recently been elevated as a new primary strategy to stem and even reverse coastal habitat loss. The call for increasing investment in restoration efforts has emerged with significant advances in propagule rearing and dispersion of habitat forming organisms e g oysters seagrasses corals In addition restoration resources are increasingly allocated by governments and or large corporations with the aim to for example fix past landscape engineering efforts that had unintended environmental consequences Such investments are being made to i provide jobs for those unemployed during economic downturns ii restore ecosystems destroyed by natural disasters and stressors iii increase coastal defense in response to increased frequency of intense storms and or iv compensate for pollution and development driven habitat degradation Conservation practitioners have traditionally been skeptical to invest heavily in restoration at large scales because of the high cost per area 10 000 5 000 000 US ha for coastal vs 500 5 000 US ha for terrestrial systems to replant coastal ecosystems and or the high chance that the restored ecosystems will not live long e g outplanted corals For restoration to be effective and employed as a primary method of coastal conservation at relevant scales we must improve its efficiency lower costs and rapidly share and incorporate advances One crucial step will be to identify when and where restoration attempts have been carried out according to state of art ecological theory and gauge their success Another is generating synthesis studies that focus both within and across ecosystems to identify efficiencies adaptations and innovations Work that shows theoretical and methodological innovations in specific ecosystems as well as across systems will be critical to pushing all fields of MER forward Although there is rapidly increasing interest and investment the field of marine ecosystem restoration is just beginning to undergo synthesis Therefore the aim of this Research Topic is to bring together research contributions to help address this synthesis need provide a spotlight for recent innovations enhance our understanding of successful methods in marine ecosystem restoration and

promote integration of ecological sociological and engineering theory into restoration practices Florida Keys National Marine Sanctuary: Development of the management plan: environmental impact statement, 1996 A Review of Marine Zones in the Monterey Bay National Marine Sanctuary Jennifer A. Brown, 2001 Federal Register Index . Federal Special Report ... of the Atlantic States Marine Fisheries Commission ,1993 Coral Reef *Register* ,2012-04 Conservation and the Reauthorization of the National Marine Sanctuaries Act United States. Congress. Senate. Committee on **Monthly Catalog of United** Commerce, Science, and Transportation. Subcommittee on Oceans and Fisheries, 2002 **States Government Publications** United States. Superintendent of Documents, 1985 February issue includes Appendix entitled Directory of United States Government periodicals and subscription publications September issue includes List of depository libraries June and December issues include semiannual index **Consolidated Appropriations Act, 2016** United States. Congress. House. Committee on Appropriations, 2016 **Monthly Catalogue, United States Public** Catalog of Federal Domestic Assistance ,2009 Identifies and describes specific government **Documents** .1985 assistance opportunities such as loans grants counseling and procurement contracts available under many agencies and **United States Code** United States, 1982 Selected Water Resources Abstracts, 1978-07 Biology Digest programs Congressional Record United States. Congress, 1984 The Congressional Record is the official record of the .1988-12 proceedings and debates of the United States Congress It is published daily when Congress is in session The Congressional Record began publication in 1873 Debates for sessions prior to 1873 are recorded in The Debates and Proceedings in the Congress of the United States 1789 1824 the Register of Debates in Congress 1824 1837 and the Congressional Globe 1833 Baseline Ecological Assessment of Artificial Reef, High Island A-389-A:. Michelle Anne Johnston, 2020 1873

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