



TERRITORY OF GUAM

OFFICE OF THE GOVERNOR

AGAÑA, GUAM 96910

U. S. A.

EXECUTIVE ORDER NO. 97-10

**ADOPTION OF THE GUAM CORAL REEF INITIATIVE (CRI) TO
ESTABLISH A POLICY DEVELOPMENT MECHANISM FOR THE
PROTECTION OF GUAM'S CORAL REEFS**

WHEREAS, protection of Guam's ocean resources, including our coral reefs is vital to the residents of Guam and to the many people who visit our island; and

WHEREAS, the government of Guam recognizes that the increased demand and use of our ocean waters by residents and visitors has resulted in the occurrence of environmental damage to our reef ecosystems; and

WHEREAS, the percentage of live coral covering Guam's reefs has declined from 60% of all reefs just fifteen years ago to only 28% today, vividly illustrating the urgent need to protect our reefs; and

WHEREAS, existing Guam laws and policies are insufficient to manage and to protect its ocean natural resources and underlying ecosystem for the interests of future generations; and

WHEREAS, Guam has taken a leadership role and has contributed significant language and direction in the development of the United States Coral Reef Initiative, the United States Coral Reef Initiative Draft Strategy, the International Coral Reef Initiative Call to Action and Framework for Action, and the Pacific Region Coral Reef Initiative Work Program; and

WHEREAS, Coral Reef Initiatives have been adopted by a number of jurisdictions including Palau, the United States, and the state of Hawaii, emphasizing the global effort to conserve, restore, and effectively manage coral reef ecosystems, including, where appropriate, mangroves and seagrass beds; and

WHEREAS, a Guam Coral Reef Initiative Coordinating Committee has been organized to deal with these coral reef issues as they relate to our environment; and

WHEREAS, that Committee has prepared a comprehensive initiative to address the needs for proper management and protection of Guam's coral reefs and associated resources.

NOW, THEREFORE, I, CARL T. C. GUTIERREZ, Governor of Guam, by virtue of the authority vested in me by the Organic Act do order:

1. **Creation of the Guam Coral Reef Initiative Coordinating Committee (CRICC).** The Guam Coral Reef Initiative Coordinating Committee is hereby created, consisting of the following members:
 - a) the Administrator of the Guam Coastal Management Program, Bureau of Planning;
 - b) the Director of the Bureau of Planning, or designee;
 - c) the Director of the University of Guam Marine Laboratory, or designee;
 - d) the Director of the Department of Agriculture, or designee;
 - e) the Administrator of the Guam Environmental Protection Agency, or designee.

THE GUAM CORAL REEF INITIATIVE TAKING RESPONSIBILITY FOR OUR ENVIRONMENT AND FUTURE

Guam's coral reefs are the very essence of the economic, cultural, political, and social viability of the island. Our coral reefs, including the associated mangroves and seagrass beds, provide shelter for the land from typhoons and tsunamis, shelter for the shallow bays and lagoons which offer recreation and sustenance, nourishment for our beaches which support our economy, and habitat for the biodiversity which defines the soul of our community. Guam's coral reefs provided our forefathers with the majority of their food and the materials for their lattes, tools and implements.

There is evidence that Guam's coral reefs are under stress and are being degraded, both from natural climatological and man induced causes. Sea level rise, global warming, ozone depletion and coral bleaching affect coral reefs world wide. Guam's reefs are additionally stressed by inadequately designed and placed sewage outfalls, polluted runoff from increased impervious surfaces, siltation from poorly planned grading and land clearing practices, overloaded sewage treatment facilities located on or near reefs, poor agricultural practices including; lack of proper controls for animal wastes or over use of herbicides and fertilizers, and improper disposal of hazardous wastes such as oils and household cleaning products. Inadequate education and control of visitors has resulted in a destructive level of coral removal for souvenirs.

Degradation of Guam's reefs and near shore waters may have resulted in or abetted in the toxification of seaweeds and fishes which has led to human fatalities. Coral reproduction and recruitment in some areas has been significantly reduced. Noxious and obnoxious over-growths of algae in near shore and estuarine waters, and over-production of species such as *Acanthaster* signal damage to water quality on reefs which negatively react beyond extremely narrow ranges of water quality variation. Reef fish stocks, like open ocean fish stocks, have been significantly reduced in part by poor reef and ocean management (over-fishing) and in part by poor land management (allowance of poor land use practices).

While every anthropogenic cause of reef and near shore water degradation can be prevented or significantly reduced, the failure to address "downstream", cumulative, or long term impacts of human actions, coupled with a governmental structure that encourages immediacy over sustainability, makes a failure to prevent and an economic incapacity to correct unavoidable. The coral reefs and associated systems on Guam present the opportunity for ecosystem management difficult to achieve in terrestrial ecosystems.

Guam has taken initial steps to declare and implement its responsibility to properly manage its

coral reefs through preservation, conservation and sustainable resource use and management. Guam's Commonwealth Draft Act iterates the right of the people of Guam to prevent marine pollution, to intelligently exploit the living and non-living resources in sustainable fashion, and to have an effective voice in national and international policy which may impact on Guam's rights and responsibilities. Additionally, Guam has taken a leadership role and has contributed significant language and direction in the development of the United States Coral Reef Initiative, the United States Coral Reef Initiative Draft Strategy, the International Coral Reef Initiative Call to Action and Framework for Action, and the Pacific Region Coral Reef Initiative Work Program.

This paper outlines a Coral Reef Initiative to address the challenge of the conservation and sustainable use of Guam's coral reefs and related ecosystems through the strategies of partnerships, coordination, integration, and capacity-building.

THE GUAM CORAL REEF INITIATIVE: VISION AND STRATEGIES

The long-term vision for the Guam Coral Reef Initiative is to build a comprehensive program for the conservation and effective management of Guam's coral reef ecosystem, including mangroves and sea-grass beds, utilizing existing activities, programs, laws and expertise to be augmented when necessary with new supports. The unifying concept is the principle of *sustainable* use and wise preservation in the present to maximize management opportunities for all future generations. This program is intended to reverse patterns of destructive practices through public and private partnerships in policy development, program implementation, and conflict resolution.

The implementation of the Initiative will depend on four strategies: partnerships, coordination, integration, and capacity-building.

Partnerships: This Initiative will build partnerships, ensuring that the full range of concerned parties are involved in the management of Guam's coral reef ecosystem. These parties include, but are not limited to, federal and Guam government agencies, organizations of commercial users, community representatives, non-governmental organizations, scientists, and tourism representatives. The primary objective is to foster innovative cross-disciplinary approaches to sustainable management of reef ecosystems through the development of cooperative relationships among the various stakeholders.

Because relationships between coral ecosystems exist on regional and international levels as well as the immediate local level, and because management regimes and policies are being developed at regional, national and international levels as well, partnerships between Guam and these other levels will also be built and supported through implementation of this Initiative. While such partnerships are premised on cooperation and experience sharing, they will continue to recognize the legal authority and responsibility of Guam to manage coral reefs within her jurisdiction.

Coordination: The Initiative will strive to ensure that existing and new activities among all players are fully coordinated to ensure that resources are used as effectively as possible to preserve, protect, and manage the coral reef ecosystems of Guam.

Integration: The Initiative will endeavor to ensure that all critical ecosystem components and linkages are taken into account, and that all elements of the problems and their solutions, including research, assessment, monitoring and management will be considered in a comprehensive manner.

Capacity Building: The Initiative will seek to strengthen local technical and human resources through cooperative education, training and infrastructure development (including the installation and use of new monitoring technologies as available). Particular attention will be given to the stimulation and enhancement of community-level efforts aimed at the sustainable management of coral reef ecosystems and sustainable use of coral reef resources.

In employing these strategies, the Initiative will undertake the full range of activities needed for the conservation and sustainable use of these ecosystems. These activities include research, mapping and resource assessment, monitoring, management for sustainable use (including protection and integrated coastal zone management, environmental damage assessment and restoration, and capacity building).

THE INITIATIVE AS A RESPONSE TO RECOGNIZED CONCERNS

The Initiative is being undertaken to address such environmental concerns as loss of biodiversity, land-based sources of marine pollution, and sustainable development.

Biodiversity: The Initiative recognizes that the maintenance of the biological diversity of the coral reef ecosystems and associated ecosystems is imperative for the quality of life and choices in today's generation, and for the protection of choices and opportunities for future generations. As part of the world community, Guam also recognizes the importance of biodiversity in reef ecosystems to address national concerns iterated through the U.S. International Biodiversity Strategy and to address international concerns iterated through the Biodiversity Chapter of Agenda 21.

Land-Based Sources of Marine Pollution: The Government of Guam has recognized that land-based sources of pollution, both point and nonpoint, are major causes of the degradation of coral reefs and related ecosystems. The Initiative provides a platform for addressing the inter-connectiveness of land-based practices to marine water and biological quality.

Sustainable Development: The call, in Chapter 17 of Agenda 21, for the sustainable use and

conservation of marine living resources echoes the fundamental understanding underlying the environmental management of resources on Guam, as has been growing since 1984. Extraordinary explosions in population, development and economy have resulted in a resource demand and usage level which will be unsustainable even into the next generation. The Initiative will support efforts to control, rather than be controlled by, circumstances of human development.

ELEMENTS OF THE GUAM CORAL REEF INITIATIVE

A Program for Coral Reef Research and Monitoring: The quantitative environmental data necessary to understand the causes of coral reef degradation and to predict and respond to future changes are currently limited. This limitation on data often results in management and policy decisions being made without an adequate understanding of the problem or full range of solutions. There is an urgent need to develop long-term monitoring sites as part of an integrated research agenda to provide:

- The data necessary to show how Guam's reef systems are changing
- The environmental data needed to identify sources of stress in disturbed reef areas.
- The environmental data needed for proper resource management.

An expanded coral reef research program will be initiated, building on research data compiled by and existing partnerships between Guam, National Science Foundation, National Oceanic and Atmospheric Administration and the National Biological Survey. Components of this research program will focus on areas of biological diversity and sustainable use, and would include:

- Ecosystem function, including research on the biology and ecology of "keystone" organisms (crown of thorns, etc.).
- Eutrophication, to provide information on the input of nutrients from upland sources; and,
- Sustainable use, including research on the sustainability of fisheries in order to understand the value of management areas for the conservation of fishery resources in these ecosystems.

The Initiative will foster the development of a monitoring program that will establish a coordinated monitoring network involving scientists and managers to facilitate the exchange of physical, chemical, biological and socio-economic data.

A Program for Improving the Health of Guam's Coral Reef Ecosystems: A second element of the Initiative is the establishment of a coordinated program to address problems facing Guam's coral reef system. Guam's corals are being increasingly stressed as development and visitor

arrivals continue to increase. Important sources of stress include nutrient enrichment from sewage and agriculture, over-fishing, sedimentation from deforestation, earth moving, agriculture, vessel traffic and coastal runoff. Tourist related and navigational damage, urban pollution, harvesting of non-renewable reef resources, and destructive fishing have further aggravated reefs already stressed by natural disturbances and disease.

A comprehensive coral reef program will necessarily include both improved protection and proactive and innovative approaches to accelerating recovery rates of degraded habitats. This program element would include activities for assessing and restoring coral reef ecosystems damaged through anthropogenic events such as oil spills, ship groundings, etc. In addition, environmental economic valuation of reefs for both assessment and resource management activities is needed.

Specific tasks to accomplish this element of the Initiative, including; implementation of elements in the Guam Nonpoint Source Management Plan; development of plans for the creation of marine protected areas; support for efforts to increase mariculture/aquaculture technologies for purposes of reseeded stocks and/or to provide alternate food fish sources to relieve stress on reef fish resources; amendments to existing fisheries management plans to address corals and reef associated plants and invertebrates, and to address management of live rock harvests; development of a habitat restoration program, and; development of a model for the sustainable use of coral reef ecosystem resources, will be developed by the partnerships described in this Initiative.

A Program of Capacity Building (Partnerships for Effective Management): Capacity building, focusing particularly on the concept of integrated coastal zone management, is basic to reef management. The overall objective of the capacity-building program as part of the Initiative is to improve the management of coral reefs and associated coastal ecosystems by:

- Developing education and outreach capabilities to elevate public awareness of the value of marine resources and thereby establishing the necessary support for their protection.
- Facilitating the development of necessary legislative frameworks, implementation and enforcement capabilities.
- Facilitating the development of private/public partnerships to develop educational and marketing programs for tourists and standard operating procedures for tour operators.
- Developing mechanisms to allow for the training and the participation of community residents and schools in the processes of monitoring, research, analysis, and priority setting for coral reefs and associated resources.

■ Development, up-dating, expansion, or corrections to reef geologic, geographic and biologic mapping and GIS development.

IMPLEMENTING THE GUAM CORAL REEF INITIATIVE

Implementation of the Guam Coral Reef Initiative shall be accomplished through a Point of Contact, the Guam Coral Reef Coordinating Committee, and the Guam Coral Reef Initiative Policy Advisory Committee.

Point of Contact: The Administrator for the Guam Coastal Management Program shall serve as Point of Contact for Coral Reef Initiative efforts. Guam's continued participation and coordination in regional, national and international Initiative's have created a history and precedence for Initiative related activities. On both the domestic and international levels, local Coastal Zone Management officials serve as local contacts, as these programs not only are developed to address these issues, but are established as coordinating mechanisms.

As Point of Contact, the Administrator will serve as a clearinghouse/dispersement point for CRI information on all levels, and shall be responsible for setting meetings for the Committees. The Point of Contact shall serve as chair for the Guam Coral Reef Initiative Coordinating Committee.

Guam Coral Reef Initiative Coordinating Committee (CRICC): The CRICC shall be composed of the following members, in addition to the Point of Contact.

Representatives for:

- Director, Bureau of Planning
- Director, University of Guam Marine Laboratory
- Director, Department of Agriculture
- Administrator, Guam Environmental Protection Agency

The CRICC shall meet at least once per month and shall be responsible for implementation of the Initiative. The CRICC may request other participants from the Government of Guam or private sector to participate in meetings as required.

Guam Coral Reef Initiative Policy Advisory Committee (CRIPAC): The CRIPAC shall provide suggestions for policy and direction to the CRICC. The CRIPAC would provide a forum for the development of specific proposals to strengthen coral reef management efforts. The CRIPAC shall meet once per quarter, and shall be comprised of the following members:

Members of the CRICC

Designated representatives for:

- Governor's Office
- Guam Legislature
- Director, Department of Parks and Recreation
- Director, Department of Commerce
- Director, Guam Visitor's Bureau
- Commercial Fisheries (deep water)
- Commercial Fisheries (reef fisheries)
- Maritime Industry (shipping)
- Dive Shop Operators
- Recreational Water Craft Operators
- Locally based and registered Environmental NGO's

Other members may be added as determined by the Committee. The representative for the Governor's Office shall serve as Chair of the CRIPAC. The Point of Contact shall serve as Vice-Chair and provide administrative support.