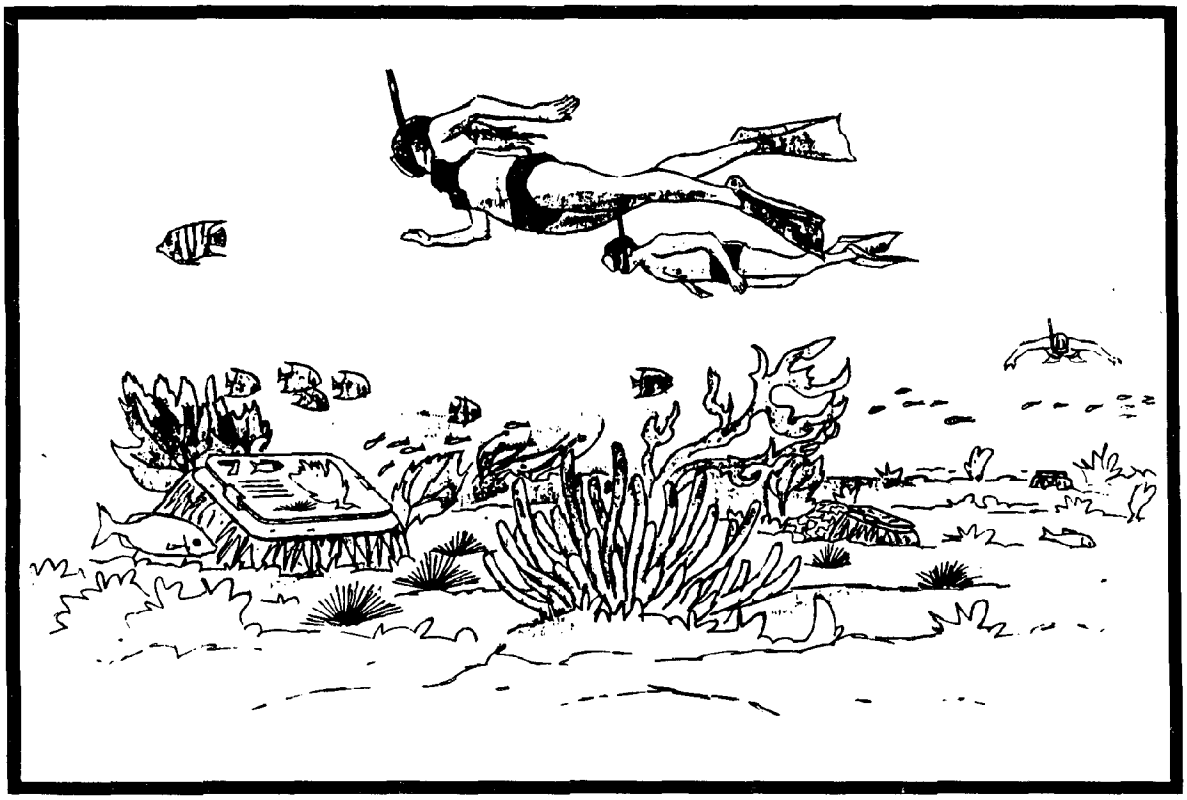
CNMI MARINE PARKS MANAGEMENT PLAN



Mariana Islands

Prepared For

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Saipan

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SUMMARY AND RECOMMENDATIONS

The marine environment of the Commonwealth of the Northern Mariana Islands (CNMI) contains important resources of significant natural, cultural and recreational value. To ensure that representative examples of these resources are preserved and that their historical, cultural and recreational potential is realized, the Coastal Resources Management Office (CRMO) has established a Marine Parks Program. The program consists of acquiring marine and terrestrial lands from the Commonwealth Government, developing the sites as necessary and thereafter managing them as marine parks, reserves or recreational areas. This plan will provide proper direction for the proposed program.

Three marine parks have been recommended, one each for the major islands of Saipan, Tinian and Rota as follows:

Saipan: Managaha Island Marine Park

Tinian: Taga Beach Marine Park

Rota: Sasanhaya Bay Marine Park

Each of the parks are comprised mostly of submarine lands with minimal terrestrial support land with the exception of the Saipan park which encompasses all of Managaha Island.

The marine parks program will:

1. Preserve the best representative examples of natural resources found in coastal and inland waters.
2. Provide a variety of underwater recreational opportunities, with emphasis on underwater areas near population centers.
3. Preserve scenic underwater resources.
4. Preserve significant historical or cultural underwater resources.

The marine parks program will be implemented by the following actions.

1. The CRM Office will appoint an advisory board for marine parks in the CNMI. This board will provide for the systematic management of each proposed site to identify natural, recreational, scenic, historic and cultural resources.
2. The Marine Parks Advisory Board will be comprised of several government agencies each with a vested interest in tourism development, recreational opportunities and historical, cultural and environmental preservation. The following agencies are suggested: Historic Preservation Office; Department of Natural Resources and Divisions of Fish and Wildlife and Parks and Recreation; Marianas Visitors Bureau; Department of Public Safety; and the Legislature. Each agency will be represented by one individual appointed to serve a term of one (1) year on the Board except the CRMO and Legislature which will be appointed for two (2) years. Appointments will be staggered for the sake of board continuity.
3. The Advisory Board will indicate to the Marianas Public Land Corporation those submarine and terrestrial lands that should be placed into the marine parks program and will request that jurisdiction of these lands be transferred to the program in fee or on a long-term lease basis.

Selected areas within the three proposed marine parks will be zoned according to compatible recreational uses and the desired level of protection. Three zones are proposed:

A. Outstanding Natural Feature Zone. This zone will include underwater nature trails where there will be no taking of marine life or other artifacts.

B. Natural Environment Zone. The majority of each marine park will be designated as such and managed to allow environmentally compatible recreational activities most of which already exist.

C. Conservation Zone. Areas are zoned as conservation to perpetuate ecological values. Only subsistence fishing will be allowed in these areas.

The Management Plan outlines the manner in which these marine parks will be managed, used, operated, inforced and monitored. Included are cost estimates for future expansion programs and program projections.

I. INTRODUCTION

A. PURPOSE OF MARINE PARKS

Marine parks, underwater preserves, marine sanctuaries and similar areas are established to accommodate many purposes including:

- Perpetuation of an unspoiled natural submerged area and the significant features it possesses without the impact of damaging ones
- Restoration and rejuvenation of a submerged or tidal area that has been degraded
- Protection, restoration and perpetuation of unique species of marine life
- Research and education
- Recreation and tourism
- Provision of a buffer zone

Acceptable uses and activities that may be permitted within a marine park or preserve are governed by the primary purposes for which it is established. Many visitor activities, such as swimming, skindiving, surfing, boating, nature study and photography are nonconsumptive and appropriate within a marine park. However, some of these activities might be disruptive to marine life in areas devoted to research.

Taking living organisms out of marine parks, collecting historical artifacts or damaging geological formations are prohibited in marine parks in most countries. However, in some areas limited commercial, subsistance or sport fishing is allowed under strict control. A specific

protected underwater area may be zoned to accommodate varying degrees of protection and management.

B. CONCEPT OF UNDERWATER PRESERVATION

The concept of preserving underwater areas is not new. Some native peoples on oceanic islands, who were totally dependent on products of the sea for basic survival, established taboos that prohibited or restricted use of certain inshore areas and specific forms of marine life centuries ago. Although the primary reason for those restricted areas is not known, it is assumed that the resources would be protected for future generations by such action.

1. Early Park Examples

When the boundaries of the Everglades National Park in Florida were established in 1934, they included submerged lands and waters of Florida Bay and the coastal zone that extended four miles into the Gulf of Mexico. The following year, the vast submerged lands and waters of the Dry Tortugas in the Gulf were set aside for protection as a large marine park when Fort Jefferson National Monument was created by Presidential Proclamation. Subsequently, in 1957, the Government of the Bahamas created the Exhumas Cays Land and Sea Park to protect not only unique coral reefs and marine features but terrestrial environments and animal life as well. California followed in April of 1960 with the establishment of the Point Lobos Marine Preserve. Also in 1960, a Presidental Proclamation provided protection for the reefs off the Florida Keys that extended beyond the three-mile zone by designating the area as the Key Largo Coral Reef Preserve. The state of Florida next set aside portions of the reef

and waters that are located shoreward from the preserve and incorporated them in the John Pennekamp Coral Reef State Park, dedicated in 1960.

Since this small beginning, numerous marine parks, underwater preserves and other types of natural preservation plans have been established in virtually every coastal state and many situated on rivers and estuaries.

2. International Marine Parks

The need for international marine parks, preserves and sanctuaries for visitor use and scientific research has also been recognized. A proposal to create a system of international marine scientific preserves was presented to the United Nations in 1968. This original proposal spun-off numerous possibilities, some of which have developed into active international organizations like the International Union for the Conservation of Nature and Natural Resources (IUCN), Man and the Biosphere (MAB) program as a part of UNESCO, The African Leadership Foundation, World Wildlife Fund and many others.

Antarctica, an area larger than the United States, is intoto an international nature preserve, set aside for 25 years by a treaty signed by the countries participating in the exploration of the region. Antartica represents a vast international marine resource as well as all marine life in the oceans below 60° south latitude, which are also restricted for scientific purposes.

An inventory of the oceanic islands of the Pacific was conducted by the International Biological Program in cooperation with the IUCN and the Pacific Science Association. The basis for this study was to

determine how unique island ecosystems can be preserved and incorporated into an international "islands for science" program. In addition, a comprehensive inventory of the recreational, scenic, natural and historic values of America's islands was prepared by the U.S. Bureau of Outdoor Recreation. This report proposed cooperation at all levels of government for island conservation and recommended that governments provide protective zones for underwater areas adjoining islands.

C. DEVELOPMENT OF MARINE PARKS

Progressive stages in the establishment of marine parks vary from country to country according to existing laws, procedures, jurisdictions and public opinion. However, there are certain steps that provide for the acquisition, orderly development, operation, management and use of the marine resources identified within the park system. The following should be considered at a minimum:

- Establish the concept of marine resource conservation and a public understanding and appreciation of the needs to preserve the marine environment
- Inventory the coastal environment to determine types of ecosystems present, their state of preservation, present uses, impact of these uses, and the identification of significant species, features and areas that require special protection
- Based upon this inventory, classify the ecosystems into theme groups, such as tide pool, coral reefs, seagrass beds, etc.

- Conduct detailed studies of individual sites to determine their significance and boundaries required for desired degree of protection. Determine the feasibility of establishing the areas as underwater parks and define development procedures that must be followed
- Select the most representative areas and those that most urgently need protection from the areas that received attention
- Prepare a master plan of the specific sites to indicate the primary purposes, proposed boundaries, facilities and development needs, types of uses and activities that are permissible and those that should be prohibited, management and operational requirements
- Secure authorization for the area by legislative action, declaration, proclamation, or other legal avenues
- Establish appropriate rules and regulations
- Acquire the lands and waters if not already government owned
- Develop the area in accord with the master plan
- Operate, manage, protect and use the area. This involves adequate enforcement of necessary rules and regulations, provision for health and safety of visitors, protection for marine life and other park features, maintenance of facilities and the interpretation of park features

D. GENERAL MANAGEMENT PLAN FOR MARINE PARKS IN THE CNMI

The general management plan is designed to maintain current uses and practices within the selected sites, limit the future exploitation of those areas in terms of fishing, harvesting or collecting, improve some facilities and services and provide long-range plans for the preservation of natural resources as the visitor population increases. Site specific management plans for each of the three proposed marine parks and details of the following items will be prepared based on need.

1. Sites

This management plan identifies one site for each of the three major islands in the Commonwealth of the Northern Mariana Islands (CNMI) Saipan, Tinian and Rota. Sites are selected based on field evaluations, supporting data, CNMI government input, the need for preservation and public opinion. Development of sites has been prioritized based on present use level and degree of economic impact to the CNMI. These sites are discussed later in this plan.

2. Resources

Resources within each of the sites are discussed in general terms for this management plan. Natural, historic and cultural resources are identified and keyed to specific development issues.

3. Environment

This plan discusses the general environment of the CNMI in broad terms, specifically for each island and site specific only in terms of existing data. Elements to be covered include:

- General History of the CNMI
- Natural Environment (Marine Resources)

- Socioeconomic Environment
- Existing Development and Use of Marine Resources
- Recreational Resources
- Cultural and Historic Resources
- Visitor Profile

4. Management Zoning

Proposed management zoning and use emphasis is defined within this general management plan in the form of narrative and maps. For the sake of this general management plan, zoning criteria include the following generalized concepts:

- Outstanding Natural Feature Zone (A)
- Environmental Zone (B)
- Conservation Zone (C)

5. Resource Management

Resources found within marine park boundaries will require management to ensure proper protection. Each of these resources must be maintained in their present state or improved depending on their condition. Resources include the following:

- Recreational
- Natural (Marine and terrestrial)
- Historical
- Cultural

6. Interpretation

For a fuller understanding and appreciation of the marine ecosystem within a marine park, it is important that an imaginative interpretive program be developed. This program should tell the

story of the marine world to the visitor in terms he can readily understand and by methods that will place him in closer contact with the underwater environment. Methods that are currently being used elsewhere include: glass bottom boats, underwater observation rooms, guided and self-guiding underwater nature trails with submerged markers explaining specific features, illustrated guide booklets, video movies, illustrated lectures and guided trips along the shoreline.

Creative imagination must be employed to develop additional site specific methods that may be used to effectively interpret undersea life. Procedures, devices and methods to be used are those that will not destroy, damage or impair the features being displayed. Some methods may be for use by swimmers while "dry methods" will be required for individuals who do not or cannot go in the water. Closed circuit television and hydrophones, plastic covered guide books or plates that identify the common forms of marine life, passenger-carrying submersibles, underwater tubes and walkways, floating craft with submerged viewing rooms and underwater observation rooms are among some of the methods being used in other areas. Exactly which of these methods are utilized depends on a number of factors:

- Layout of the site
- Depth of water
- Number of visitors
- Available development capital

7. Personnel For Operation and Maintenance, Monitoring and Enforcement

The management plan identifies general needs in terms of personnel for operation, maintenance scheduling, monitoring and enforcement activities. More specific needs will come out of each successive marine park management plan as they are developed.

8. Funding

Not the least important element of this general management plan are the costs associated with developing the essential elements. Costs are based on the following categories:

- Personnel
  - *In-House
  - *Local Hire
- Consultation
  - *CNMI: General Marine Park Management Plan
  - *Saipan: Managaha Island Management Plan
  - *Tinian: Taga Beach Marine Park Management Plan
  - *Rota: Sasanhaya Bay Marine Park Management Plan
- Improvements
  - *Underwater Trial Interpretation
  - *Visitor Orientation Center Interpretation
  - *Video Interpretation
- Equipment
  - *Boat and Motor
  - *Vehicle
  - *Scuba Gear

E. MANAGEMENT OBJECTIVES

The following seven management objectives are designed to protect and preserve the delicate ecological balance of selected sites chosen for inclusion in the CNMI Marine Parks Program.

1. Conservation of Natural Resources

- To assure long-term perpetuation of the coral reef and associated biota as well as native vegetation, wildlife and other natural resources of selected park sites and to minimize adverse effects of human activities on these resources
- To maintain the highest possible quality of the park's rare, threatened or endangered species and their habitat
- To reduce the adverse impact of exotic or nuisance species, such as Acanthaster planci (crown-of-thorns starfish, jellyfish, rats and others) on native flora and fauna
- To ensure that the aesthetic quality of the barrier and fringing reefs is not impaired by structures or other intrusions
- To ensure that the subsistence taking of selected marine life, such as lobsters, shells, fish and others do not effect the ecological balance of the general area

2. Preservation of Cultural and Historical Resources

To identify, evaluate, preserve and protect the parks cultural and historical resources in a manner consistent with executive and legislative requirements and the CNMI Historic Preservation Program.

3. Acquisition of Information

- To secure adequate information, through research, monitoring or other means to enable efficient and effective management of the parks resources

- To evaluate the effects of subsistence and commercial fishing and shell-fishing on selected areas of the parks
- To locate and evaluate sources of pollution that may be having adverse effects on the condition of the parks terrestrial and marine ecosystem

4. Promote Visitor Use

- To make opportunities for day use recreational activities, such as picnicking, hiking, fishing, shellfishing, swimming and snorkeling at levels and in locations where they are compatible with long-term perpetuation of the parks terrestrial and marine resources

5. Promote Visitor Safety

- To promote public awareness of potential hazards associated with boating, snorkeling, hiking and other activities and thereby help ensure a safe and enjoyable park experience for all visitors
- To minimize congestion, promote sound seamanship practices and ensure public safety in the vicinity of underwater trails
- To ensure that visitors are well informed on the poisonous characteristics of certain marine animals and terrestrial flora

6. Provide Interpretation

- To promote public understanding and appreciation of the ecology of the barrier and fringing reef and the sensitivity of the fragile ecosystem to the adverse effects of human activities

- To ensure that the techniques used for underwater interpretation are effective and provide the visitor with high quality experiences that do not adversely affect the reef environment
- To foster public awareness of natural terrestrial and marine flora and fauna resources in the CNMI including processes needed for the continuing evolution and the influences which may adversely affect them, as well as the increasing importance of the park in conserving these resources as the CNMI continues to develop

7. Insure Safe Operation

- To improve efficiency of general park operations for the benefit and safety of all park visitors

F. IMMEDIATE DEVELOPMENT CONCEPT

The general development concept plan designates one site on each of the three islands of Saipan, Tinian and Rota for inclusion in the marine parks program. These sites (discussed in Part III of report) will then be prioritized and developed according to need. Depending on present level of development, the park might change very little from more than official designation as a marine park. This may be the case for the Rota and Tinian Sites. However, it is anticipated that the Saipan Site may immediately benefit from the park designation because of existing use. Obviously, the present level of use by local residents and visitors will determine the degree of immediate transformation and at what rate development may occur.

Additional sites may be added to the marine parks program for preservation depending on the future need for additional facilities resulting from increased visitor arrivals or local resident use.

1. Priority

Development of the Managaha Island Marine Park appears to be the first priority in the CNMI based on present level of use. Managaha Island and the surrounding reefs exhibit numerous natural resources of significance. Traditional and cultural uses make the area special and valuable. Historical remains abound in the area on land and underwater. Approximately 150 - 200 Japanese Tourists visit Managaha Island daily and local resident use of this island is popular particularly on weekends. The island itself has both historical and cultural value and includes gun placements, bunkers and other materials from World War II and an ancient Carolinian burial site.

The island of Managaha is considered sacred by the Carolinians because of the burial site of Chief Agrub dating back to 1819. Managaha is unique because it supports a variety of medicinal plants. Culturally, the island is special and sacred because "Firowrowa" is performed here, the traditional practice of burning clothes and other personal posessions of the deceased.

In the waters surrounding Managaha Island can be found numerous war related artifacts, wrecked ships and airplanes, barges and an assortment of war related debris. The coral reef surrounding Managaha Island is diverse and beautiful and has been used traditionally by the Carolinians and Saipanese for subsistence fishing and gathering. This is the site where the largest fish was speared during the 1984 Santa Remedio Spearfishing Tournament. Scuba and skin diving groups frequent the waters around Managaha Island as do windsurfers, sailors and waterskiers.

Although the ancient Carolinin Chiefs did not intend their preservation of Managaha Island to encourage development, the island has become a popular tourist destination for Japanese visitors and a picknicking site for local residents. It is frequented by nearly 85% of all tourists who visit the CNMI. Because of the intensive pressure placed on the natural, cultural and historical resources on and surrounding Managaha Island, protection at some level is essential to preserve these resources. The inclusion and prompt development of the area as a Marine Park will help to protect these resources while allowing existing activities to continue.

Development of Marine Parks on the Islands of Rota and Tinian, beyond legislation and simple identification is not warranted at this time. Neither present use levels nor resource degradation pose a serious threat to these resources. These parks will be developed later when the level of use increases.

II. THE ENVIRONMENT

A. BRIEF HISTORY OF THE MARIANA ISLANDS

1. General Statements

The CNMI is composed of 16 islands which have a combined total land area of 510 square kilometers (km^2) (184 square miles (mi^2). The chain extends 730 kilometers (km) (440 miles (mi)) from Farallon de Pajaros (Uracas) in the north to Rota in the south (Figure 1). The United States Territory of Guam lies only 205 km (127 mi) to the south of Saipan. Only six of the islands in the CNMI--Saipan, Tinian, Rota, Alamagan, Anatahan, and Agrihan--are regularly inhabited. Pagan is now uninhabited as a result of recent volcanic eruptions. Saipan, Tinian and Rota account for 65% of the land area of the Commonwealth, 99% of the population and nearly all of the economic activity.

Geologically, the Northern Mariana Islands are moderately high mountainous islands of volcanic origin. The Marianas are part of the Palau-Yap-Mariana-Japan trench system which forms the boundary between Asia and the true Pacific Basin. The island chain is aligned along the crest of the gulf that is associated with the great Mariana trench nearly 10 km (6 mi) deep. In the southern islands, coralline limestone covers the old volcanic formation forming unique and diverse coral reefs. Saipan is the only island with a sizable lagoon that extends almost the entire length of the western side of the island.

The climate of the CNMI is tropical, uniformly warm and humid. Saipan is reputed to have one of the world's most equable climates

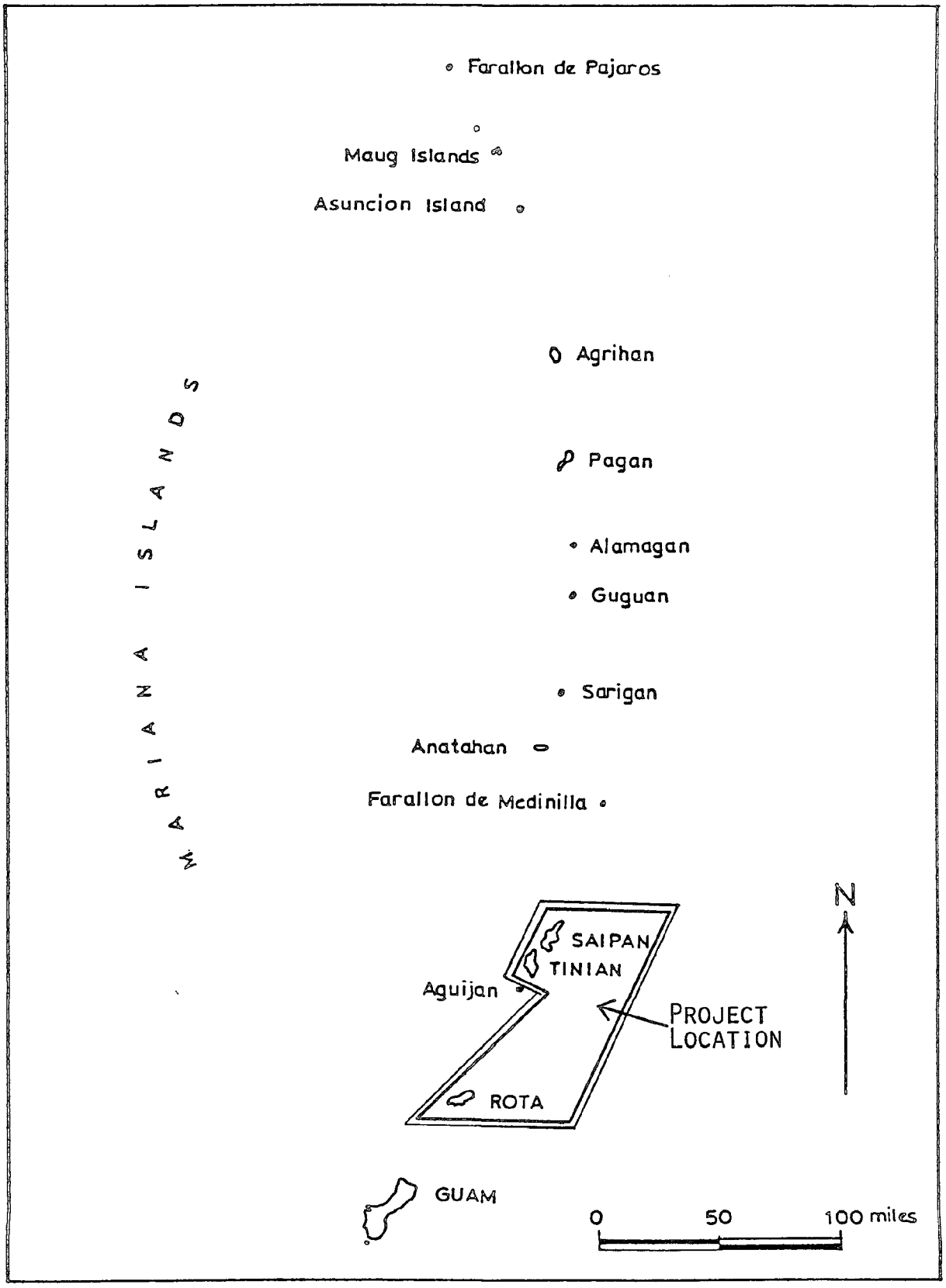

FIGURE 1. THE MARIANA ISLANDS

with an average year-round temperature of 27°C (81°F). In the Marianas wind and rainfall are the most variable elements with distinct dry and rainy seasons. December - April and June - October respectively. November and May are transitional months. Average yearly rainfall is 130 centimeters (cm) (50 inches (in); over half of it falls between July and October.

From July through November, typhoons with winds in excess of 300 km/h (180 mph) periodically sweep through the islands. Flooding and wind damaged vegetation are a common result of storms with winds above 100 km/h. Storms of this sort are very destructive and are particularly hard on structures of all kinds.

2. History and Political Development

Present day inhabitants of the CNMI are the descendants of the original Chamorro settlers of the islands, Carolinians, and a growing number of Asian settlers including many Filipinos, Koreans and Japanese who are engaged in the construction and service industries. The Chamorros who settled the islands, probably in the third or fourth century A.D., were reputed to be tall, warlike and fearsome. The first European visitor to what is now the CNMI may have been Ferdinand Magellan, who landed in Guam in 1521. Subsequent to Magellan's departure, the islands in the CNMI were virtually ignored until the arrival of Spanish Jesuits in 1668. The priests Christainized the archipelago "Marianas" in honor of Queen Maria Anna, widow of Philip of Spain and patroness of the first missionaries. In 1565 a Spaniard, Don Legazpi, formally proclaimed the Mariana Islands to be Spanish territory. However, for a century

after Don Legazpi's visit Spain made no effort to colonize the islands using them mainly as a watering and provisioning stop on the sailing route from Acapulco to Manila. During this time, persecution, famine and disease so depopulated the islands that, by 1698, all of the remaining inhabitants had been removed to Guam. By 1780 the number of Chamorros even on Guam had fallen to less than 2,000.

Saipan was repopulated in the nineteenth century, initially by Carolinian sailors from the Eastern Caroline islands who received permission from the Spanish Governor on Guam to settle there in 1815. Later, it also became home to people of partial Chamorro decent whose parents had been forcibly evacuated from the Northern Marianas by the Spaniards earlier. They were also attracted by the possibility of engaging in copra production and of having greater freedom from Spanish control than they had on Guam.

In 1899, after its defeat in the Spanish-American War, Spain ceded Guam to the United States and sold the Northern Marianas, along with the rest of Micronesia, to Germany for $4.5 million.

The Marianas proved to be an economic liability to Germany because of scarce resources and distance from Europe. Commerce never took off as expected. At the beginning of World War I, the islands were taken by Japan without struggle. In 1920, the League of Nations formalized this wartime seizure by placing the Northern Marianas, as well as the Carolines and the Marshalls under a League of Nations Mandate to Japan.

During the Japanese period (1914-1944), the islands acquired new significance. They lay along routes of Japanese economic ex-

pansion and were considered strategically vital to Japan. Japanese commercial enterprises and colonization brought development to the Marianas. Much of the still existing and utilized infrastructure such as roads, docks and water system are from this era. Sugar and starch (sugar cane, taro and cassava) production dominated economic life at the time. Fishing also contributed to the economy. By 1937 there were 47,000 residents in the Marianas, most of whom were Japanese citizens or nationals, Okinawans and Koreans. Natives numbered only 4,000. Garapan Village in Saipan became a thriving commercial town of 15,000 by 1941.

World War II radically transformed the Marianas. Ninety percent of the local population survived but vegetation and agriculture lay in ruins. Withdrawal of troops left a landscape cluttered with air-strips, abandoned installations, piles of waste, live ammunition of all kinds (artillery shells, mortar shells, hand grenades) and a completely altered indigenous society. At first, the islands were placed under naval administration. Then, on July 18, 1947 the Security Council of the United Nations and the United States entered into a Trusteeship Agreement, covering all of the former Japanese mandated islands, including the Northern Marianas, the Eastern and Western Carolines and the Marshall Islands.

In March, 1976, both the people of the Northern Marianas and the United States Congress approved a Covenant to establish the Commonwealth of the Northern Mariana Islands. Then, on April 1, 1976, the Northern Marianas separated from the rest of the Trust Territory and became separately administered, moving toward

eventual Commonwealth status. By popular referendum, the people of the Northern Marianas adopted the Northern Marianas Constitution, subsequently approved by the United States Government. The Constitution of the Northern Marianas became effective on January 9, 1978 and the people witnessed the inauguration of their first elected governor, legislators and other elected officials. Establishment of the CNMI government meant that Saipan was now the site of the headquarters for both the Trust Territory of the Pacific Islands (TTPI) government and the new CNMI government. Subsequently, the TTPI became the Federated States of the Micronesia (FSM) with headquarters on Pohnpei. This marked the first time in more than 400 years that the people of the Northern Marianas played an active part in choosing their own government.

3. Population, Employment and Wages

According to the 1980 census, 20,000 people live in the CNMI. Saipan (125 square kilometers, 45 square miles) is home for 17,500 people, Rota (90 square kilometers, 32 square miles) 1500 and Tinian (110 square kilometers, 40 square miles) approximately 1000. The population of Alamagan (12 square kilometers, 4 square miles) is less than 50 and only sporadically populated. The same is true of Pagan which has not been populated since its active volcano erupted in 1981-1982 drawing its 50 or so residents away to Saipan.

The Micronesian population of the CNMI is relatively young. In 1980, over 45% of all Micronesians in the CNMI were under the age of 15 years. This age structure results from a high birth rate, relatively low infant mortality and a high death rate in older people. Table 1 presents population projections through the year 2000.

Table 1. Northern Marianas Population Projection CY 1980 - 2000.

Sex	Age Group	1980	1981	1982	1983	1984	1985	1990	2000
Both	Total	16,758	17,596	18,575	19,598	20,576	22,165	23,320	32,630
	0-14	7,613	7,991	8,456	8,884	9,339	10,111	10,890	15,210
	15-64	8,622	9,052	9,513	10,082	10,483	11,335	11,673	17,060
	65-over	523	553	606	632	671	721	757	860
Male	Total	8,457	8,886	9,378	9,875	10,362	11,161	11,780	16,260
	0-14	3,885	4,080	4,320	4,534	4,774	5,130	5,566	7,770
	15-64	4,326	4,547	4,778	5,047	5,269	5,687	5,853	8,580
	65-over	246	259	280	294	319	344	361	410
Female	Total	8,301	8,710	9,197	9,723	10,205	11,006	11,540	16,370
	0-14	3,728	3,911	4,136	4,350	4,565	4,981	5,324	7,440
	15-64	4,296	4,505	4,735	5,035	5,214	5,648	5,820	8,480
	65-over	277	294	326	338	352	377	396	450

Estimates are based on the 1980 Population Census Preliminary Data. The cohort-component method of population projection is used to obtain the estimates.

The present Micronesian labor force in the CNMI probably numbers about 5000, or about 64% of the total Micronesian population over the age of 15 years. Measured in terms of employment and wage and salary payments, it appears that the private sector has undergone real expansion since the advent of Commonwealth status. Tax returns indicate that between 1977 and 1980, total wage and salary payments doubled in the private sector and the number of persons employed rose by 25%. In contrast, the government sector expanded only 32% in wage and salary payments and actually declined in the total number of employees. Overall, money wage and salary income appears to be steadily increasing. In 1975, the total was $21.5 million and rose to $41.9 million in 1980 ($29.5 million in 1975 dollars). Per person, the annual wage rose from $3491 to $5494 ($3869 in 1975 dollars), an 11% increase.

Although the growth has been extraordinary for a Pacific Island nation, the CNMI does not enjoy the standard of living and the benefits of a typical mainland community or the closest neighboring United States possession, the Territory of Guam.

4. Present Economy and Infrastructure

In the years prior to World War I, the economy of the Marianas was mainly a subsistence economy based on fishing and gathering. In the Japanese years, those between World Wars I and II, agriculture became the mainstay of the Northern Marianas' economy. Since World War II, this agricultural pattern has changed dramatically with only 240 ha (600 acres) now under cultivation and 9100 ha (22,500 acres) in grazing. There are probably fewer than 100

full-time commercial farmers or ranchers throughout the CNMI. Fishing in the Commonwealth is largely subsistence supplemented by a few small to medium sized commercial operations. Most families in the CNMI engage in casual or subsistence fishing from time to time, but persons engaged in serious full-time fishing probably number no more than 200.

Growth of the visitor industry has been dramatic since the mid 1970's when direct air service to and from Japan was established in 1977. Total visitors to the Commonwealth numbered 119,370 in 1980, an increase of 134% in just four years. Tourism is now the leading private sector activity in the Commonwealth with 131,823 visitors in 1984.

Construction, retailing and a range of service enterprises account for most private sector activity. As of 1983 nearly 1000 different businesses were active in the CNMI. General merchandising, retailing, wholesaling and importing make up about 26%, while miscellaneous services (car rentals, auto and appliance repair, tailoring, tour services and printing) account for 35% of the businesses. Construction and construction supply comprise 11%, while hotels, bars and restaurants also make up about 11% of business.

Facilities and infrastructure throughout the CNMI are in need of substantial expansion and maintenance if economic development is to continue. The Saipan water system does not meet the demands of consumers and is still turned off during the evening hours to permit recharging of storage tanks. Apparently, much of the productive water capacity is being lost to leaks in the systems. Recently,

Covenant Capital Improvement Project (CIP) funds have been tapped to improve the water system through new water mains and distribution lines in four major areas of Saipan including a new 760 kiloliter (200,000 gallon) reservoir and booster pump. As a result, more areas have better water service. However, most areas still experience water hours.

Electric power service is provided by the CNMI Public Works Department. The power supply and distribution system on Saipan have grown less and less reliable over the years as a result of increases in demand coupled with inadequate maintenance of equipment. Although the power source for Saipan was upgraded in 1983 with a new oil-fired plant of 21 MW capacity, additional investment will be required to improve the power distribution system which has deteriorated.

Only a small percentage of the island residences have solid waste pick-up service. Waste that is collected is disposed in a nealy full landfill at the edge of the lagoon directly upwind from the center of tourist development in Garapan. Suitable alternate solid waste disposal sites are presently being studied.

The Commonwealth Government maintains and operates a short wave radio for communications with the northern islands and ships within the territorial waters of the Marianas. A commercial cable TV station also operates on Saipan. The islands of Saipan, Rota and Tinian are served by Micronesian Telecommunications Inc. (MTC), a subsidiary of Hawaiian Telephone. The telephone service is limited and will require major improvements to meet demand in the future.

Health care services in the Commonwealth are provided by the Department of Public Health and Environmental Services, which is publicly funded. No private physicians practice in the CNMI. Dr. Torres Hospital, an 84-bed former United States Army field hospital constructed in 1962, is the major health care facility in the Commonwealth. Both its in-patient and out-patient facilities are heavily used. The hospital has been unable to meet the requirements for the accreditation required to obtain reimbursement under Medicaid. A new hospital is currently being built and completion is scheduled in early 1986. Other health care facilities include a Public Health Center in Chalan Kanoa, and a dispensary on Agrihan. Semi-hospital (despensary facilities) with full-time physicians and nursing staff operate on Tinian and Rota.

5. Prospects For Economic Development

The Commonwealth, along with the other Pacific island governments, must plan for economic development under constraints of limited land, water, natural resources and capital. Three promising areas for future development are tourism, agriculture and fisheries. Attainment of long-range development objectives depends on proper planning, development of infrastructure and utilization of available resources. One of the most important resources is the human resource. Population projections in Table 1 indicate a CNMI population of almost 33,000 by the year 2000, and, as now, 45% will be under the age of 15. Providing the education to prepare residents of the CNMI for jobs that will contribute to economic growth is a major task now facing the government.

Present policies regarding the importation of alien labor to the CNMI attempts to strike a balance between strictness and responsiveness to meet the needs of the labor market. Existing regulations allow alien labor to meet demonstrated needs, but only after it has been determined that qualified local labor is not available.

According to recent estimates, about 8600 ha (921,140 acres), or 18% of the total Commonwealth land area, are in private hands. All other lands in the CNMI, roughly 39,000 ha (96,300 acres), are public lands and belong collectively to the people of the Commonwealth who are of Northern Marianas descent. Much of the island of Tinian has been set aside for possible use by the United States Department of Defense. The relatively large proportion of public land results from the Japanese and German administrative policy to take lands not enclosed and cultivated, thus preventing the accumulation of large private land holdings such as one sees, for example, in Hawaii. The magnitude of public land holdings give the government of the CNMI an unusually broad latitude in developing land use plans.

One special institutional factor related to the use of land resources may influence development of the Commonwealth. Ownership of land is limited constitutionally and in the Covenant to persons of Northern Marianas descent. Persons of Northern Marianas descent are defined as either individuals of at least one-quarter Northern Marianas Chamorro or Carolinian blood, or corporations whose directorships and voting are held 51% by such individuals. It is important to note, however, that these restrictions have not discouraged

foreign investment in the visitor industry, the Commonwealth's leading private sector economic activity. Leases are bought and sold regularly. Deeds are held by legitimate holding companies.

Relative to its population size and economic base, the Commonwealth possesses impressive public sector financial resources for development. These resources derive primarily from the financial relationships established between the Commonwealth and the United States under the Covenant. However, the Commonwealth does not have sufficient financial resources to implement all the long range infrastructural projects necessary to meet the federal water and health standards and local socio-economic development needs. The CNMI government is attempting to make the most effective use of local funds, including Covenant funds, to maximize the impact upon the economy and to encourage private sector growth.

To assist the CNMI in becoming more self supporting and to achieve progressively higher standards of living for its people, the Covenant commits the United States Government to provide direct budgetary support payments to the CNMI. These payments are earmarked for government operations, capital improvements and economic development loans. Table 2 gives a general listing of anticipated expenditures for the period FY 1981 through FY 1987.

Covenant grants are set at $14 million annually in FY 1975 dollars and adjusted to compensate for inflation. Covenant direct grants represented approximately 62% of the resources available to CNMI in FY 1981, excluding unobligated prior year balances.

Table 2. Government of CNMI: Projected CIP Plan Activities, FY 1981 - FY 1987.

SECTOR	AMOUNT (millions of 1980 dollars)
Health	1.0
Education	6.2
Natural Resources	3.2
Public Safety	0.5
Community Affairs	0.8
Housing	1.0
Public Works (Power)	9.4
Public Works (Water)	12.1
Public Works (Sewer & Sanitary)	1.7
Public Works (Roads)	6.0
Ports and Harbors	3.9
Public Buildings	3.0
Administration	2.7
Total	$51.5 million

The Covenant stipulates that direct grants to the CNMI will be provided for a period of seven full fiscal years from the establishment of the Commonwealth. This means that the direct grants will continue through FY 1985. After FY 1985, the CNMI will continue to receive the grants at the same annual level plus inflation adjustments until Congress appropriates different amounts.

The Commonwealth also raises revenues from internal sources. Total CNMI internal revenues were estimated at about $9.7 million for fiscal year 1980. Major sources of internal revenue are excise taxes levied on petroleum and other products imported into the Commonwealth for sale, lease, or rental ($2.4 million in FY 1980), graduated taxes on individual wage and salary earnings ($994,000 in FY 1980) and gross receipts of businesses ($1.8 million in FY 1980).

The Commonwealth's principal advantages are those of geographic location, a tropical climate and great natural beauty. Hardly further from Japan than Miami is from New York makes the CNMI an ideal tourist destination for the populous and affluent Japanese market. In addition, the Hong Kong and Taipai tourist market is being expanded. The effects of this market will eventually be felt as more tourists from these areas visit the CNMI. The growing demand for new tourism experiences in the United States may also enhance the tourist industry in the CNMI.

In a remarkably short time, the visitor industry has become the leading source of export earnings and the source of about one-fourth of CNMI private employment. The strategic issues for the next few years are, primarily, how to keep the flow of tourists increasing in

the face of increased competition, and secondly, how to increase the net domestic income per tourist-day. It is expected that the visitor industry will continue to lead the private sector in the Commonwealth.

The major flow of tourists has been created by the air service between Saipan and Japan and will, in the future, depend on the number of seats in that service as well as the availability of hotel rooms on Saipan. Personnel in the Marianas Visitor Bureau (MVB) believe that the world petroleum situation, and the resulting increases in air fares may combine to enhance the competitive position of tourisim in the CNMI over other destinations in the Pacific like Hawaii.

Saipan's location has other advantages. The strategic importance of the Northern Marianas in the Western Pacific is recognized in the Covenant between the United States and the CNMI. The United States has exercised its option to use much of Tinian for military purposes. Development for this purpose will have significant economic impact. The close proximity to abundant marine resources presents the possibilities of increased fishing, fish processing and the development of other marine related activities. In addition, its location, so close to East Asia markets, may prove attractive to United States firms desiring a forward office based in a Commonwealth with United States ties.

B. MARINE RESOURCES IN THE CNMI

1. General Statement

The Mariana Islands are rich in marine resources and may in fact represent the area's greatest resource. Historically, the ocean

provided for the islanders basic protein needs from the fish taken for food. Even today a certain level of subsistence living is taken from the ocean. To a larger extent foreign fishing fleets pirate tons of fish from these waters only to be sent back in cans and sold in local markets.

The basis for marine life in these islands, like all other islands, are the diverse coral reefs. These reefs form over thousands of years building the structure upon and within which a myrid of sea creatures live and breed. It is these reefs that support the vast array of marine life that makes these islands rich in marine resources.

The shorelines and immediate coastal regions of Saipan, Tinian and Rota can be divided into four basic zones; Rocky shorelines, beaches, low-lying shorelines which support intertidal vegetation and man-made or altered shorelines. In addition, the shoreline is bordered by fringing reefs and erosional bench platforms. True reefs have developed by direct organic creation by corals, corraline algae and associated reef organisms. On Saipan and Tinian offshore barrier reefs with shallow lagoons exist along their western coastline, more significant on Saipan.

2. Reefs

Shallow reef-flat platforms are intermittently developed along the shorelines of Saipan, Tinian and Rota. Offshore barrier reefs separated from the shore by shallow lagoons are developed along the leeward coasts of Saipan and Tinian, more so on Saipan. Although there is an absence of shallow fringing reef flat platforms on Rota

and Tinian, this does not mean that reefs are absent or that reef building does not occur on the offshore slopes. Studies show that most of the deeper subtidal slopes and terraces of all the islands are covered with a variety of corals, benthic algae and a variety of reef associated organisms. In fact, greater diversity of flora and fauna and reef development has been observed in these areas. On numerous offshore slopes and terraces along the shore, reef deposits are accumulating and well developed channel and buttress, spur and grove systems are evident.

These reefs provide habitats for a wide variety of marine life of which the fish are dominant and provide islanders with a plentiful food source and an enjoyable form of recreation. These reefs harbor other edible forms for marine life, such as the lobster, octopus, clams, shells, shellfish and certain species of algae. Because of the diversity of marine life associated with coral reefs, one can also find larger predators, like the shark, barracuda and morey eel.

Coral reefs are often isolated from land and in these cases are usually within rough water areas. However, in most cases coral reefs border the coastline and have a calm water element along the shoreward side or lagoon. It is in these calm water lagoons where the greatest recreation is derived for the visitor. Marine life abounds in these calm waters with little hassle or danger from rough water and swiftly moving currents. There is even reduced danger in lagoons from sharks or other large predators.

3. Lagoons

Lagoons can be found on the leeward (west) side of Saipan and to a lesser degree on the west side of Tinian. The entire west coast

of Saipan represents the single largest lagoon in the Mariana Islands and is, on the average about 15 feet deep. Depths of 45 feet are found only in the shipping channel which was dredged in the 1940's for harbor improvements. Within this sparkling lagoon is found an astounding complexity of marine life.

Managaha island is the only offshore island associated with Saipan located inside the barrier reef within the lagoon and at the entrance to Tanapag Harbor. The island is vegetated with Ironwood, Coconut, Banyan, Messerschmidia, Scaevola and a variety of ornamentals brought in during recent development for the benefit of visitors.

The shallow water environment surrounding Managaha island supports a healthy coral reef. Patch reefs and clusters of coral heads are found along the northwest side of the island and these extend seaward where they fuse to form the solid barrier reef formation.

The island of Managaha and its associated lagoon and coral resources represent the single largest natural attraction for visitors to this island. It is estimated that nearly 85 percent of all Saipan visitors spend a day on Managaha island enjoying the natural beach, ocean and coral reef. (More about Managaha island later in this report as a site for further development as a marine park).

Tinian enjoys limited lagoon development along its west coast near the harbor. A breakwall was built upon remnants of a barrier reef for harbor improvements during WWII. The majority of the adjacent lagoon was destroyed by dredging and filling operators

during construction of the harbor. However, a small patch reef remains as a focal point of interest in regards to coral reef development in the area. This patch reef can be described as an irregular oval reef with some local patches of sand, gravel and coral algal rubble in localized holes and depressions. Corals are abundant and diverse on the platform and subtidal slopes.

Rota does not have a well developed lagoon formation. There are areas along the west coast, within the well defined reef-flat platform, that show signs of an emerging lagoon. However, these areas are extremely small and shallow.

Common to all lagoon and semi-lagoon areas in these islands are depths between 3 - 45 ft. The floor is relatively flat and undulatory with mostly a sandy bottom and scattered coral-algal rubble of unknown thickness in deep areas, becoming a thin veneer over reef-rock pavement in numerous places along the shoreline. The outer portion is sandy with more coral-algal rubble particularly along the border of the barrier reef where local areas of irregular reef are exposed. There are numerous coral mounds throughout the lagoons, particularly the Saipan lagoon, smaller and less frequent in smaller lagoons or semi-lagoons (Tinian and Rota). Corals are usually absent to widely scattered along the inner part of the lagoon and more abundant in the outer lagoon where it grades into the barrier reef.

Seagrasses are scattered throughout the Saipan lagoon mostly within 100 m of the shoreline. No seagrass patches are found within the immediate vicinity of Managaha Island. Seagrasses form patches

or a thick turf depending on species and location. On Rota and Tinian, seagrasses are found less often but do exist in a few calm inlets or bays where sandy bottoms prevail.

4. Subtidal Reef Flat Platforms

These platforms are usually submerged during low tides. During low spring tides, water circulation on the platforms is commonly reduced or even restricted at places and depauperate reef communities similar to those found in intertidal platforms are present. The more diverse reef communities are found on deeper parts of the platforms or where good water circulation is found. In general, coral distribution on the subtidal platform is absent to widely scattered on the inner third, scattered to locally abundant at the middle third and most abundant on the outer third. Coral diversity follows a similar pattern with one to five species generally present on the inner platform increasing to 20 or more on the outer seaward edge.

It is safe to state that the majority of coastline around the islands of Rota and Tinian are composed of rocky shorelines and reef flat platforms. Saipan also has a significant amount of these formations, however, they are more dominant along the windward (east) coast.

C. RECREATIONAL RESOURCES IN THE CNMI

Recreational resources in the CNMI abound on land and in and on the water. Throughout all the islands in the CNMI one can find a variety of recreational outlets. Though not high islands, these specs in the ocean offer wilderness trails, waterfalls, lush tropical limestone rain forests, lakes, marshes, wetlands, mangrove forests, active and

dormant volcanoes and a dazzling array of wildlife. The islands are not lacking in spectacular vistas, majestic overlooks and exquisite sun sets. In addition, all of these terrestrial recreational resources are surrounded by the ocean with its incredible diversity of marine life.

It has been stated that these islands are truly for the outdoor water oriented person, for exploring, hiking, camping, diving, fishing, sailing, boating, skiing, surfing, beach combing, sunbathing and swimming. It is a place to relax and enjoy the pristine environment. To marvel in the beauty of majestic sunsets and bathe in the serenity of the ocean. It is a place to be one with the environment either sitting on a windy mountain top, surfing on a crashing wave or diving in quite serenity.

D. CULTURAL AND HISTORIC RESOURCES IN THE CNMI

Culturally and historically, these islands have played an important role in the development of island nations and world powers. These islands were first settled by seafearing people from the Asian continent. In their small oceangoing sailing canoes, small groups wandered away from the traditional eastward Polynesian migration up into the Western Pacific settling in the Carolines and Marianas. Slowly the population increased as more and more migrations were made and as those already inhabiting the islands proliferated.

The islanders, called Chamorros, were a tall strong and stately people who farmed, fished and sailed the oceans in fast ocean going proas. They inhabited the coastal low lands, farmed the rich fertile valleys and fished the reefs and lagoons.

The original settlers developed their own pottery, weapons, fishing and hunting tools and lived a casual subsistence life. They danced and sang for recreation and ceremony and were considered a happy, healthy and peaceful people.

Culturally, the islanders today are only a fraction of what they were originally. Occupations by four separate nations have changed the gene pool completely. Their strong tie to the ocean is nearly gone and many residents do not know how to swim. Their language is particularly Spanish and their religion is strongly Catholic brought on by the Spanish occupation. Their physical stature has been reduced to a smaller people. Traditional fishing and gathering and sailing techniques are nearly all lost in history where only a few hundred miles away in the Caroline Islands, these practices still exist day to day. Regardless of the cultural losses over time, the culture is still strong in history. Numerous artifacts still exist and the people have a proud heritage.

E. SOCIOECONOMIC ENVIRONMENT

1. Micronesia in General

After the war, these islands were handed over to the United States in a United Nations Trusteeship agreement and administered by the Navy. However, little if any improvements were made for at least ten years. In the mid 1950's the Navy appointed governors for these islands and, consequently, they were run like battleships. There was no free access to the islands and one required special permission to enter or exit them. Little was done to clear up the physical mess caused by the war effort and the islands sat idle until the early 1960's when the economics of tourism from Japan began to gain importance.

The "Baby Boom" generation after the war produced a massive Japanese population of well educated, hard working individuals who wanted to see the world. Blessed with peacetime and a rapidly improving economy, the Japanese people were beginning to spend their leisure time and money on travel. They took notice if the tropical mecca existing nearly in their own backyard and arrivals to the CNMI began to pick up steadily. Airlines saw this potential and established direct travel routes between Japan and Guam in 1970. It was not long before direct routes were operating between Japan and Saipan.

Tourism always brings with it significant support facilities and so the economy began to improve steadily. At the same time, the United Nations Trusteeship agreement was beginning to show signs of weakness. Many of the islands bounded by this agreement were looking for independence or some other association that would prove more beneficial. The Northern Mariana Islands was the first to break out of this agreement by forming a Commonwealth in association with the United States. Still others broke out like the Republic of Palau and Independent State of the Marshall Islands. The island groups of Truk, Pohnpei (formerly Ponape), Kosrae (formerly Kusai) and Yap comprise the new Federated States of Micronesia, a remnant of the original United Nation Trusteeship agreement. Each of these islands entities remains tied to the United States economically. However, recent negotiations are underway between Palau and the other U.K. and Soviets for economic aid.

2. Saipan

Of the three major islands representing the CNMI, Saipan enjoys the highest economic level. Most residents on Saipan enjoy a comfortable style of living and the pace of life is casual. Although, jobs are available, the general pay scale is low. Many unskilled jobs are taken by aliens such as Filipinos, Koreans and Chinese who will work for lower wages. Chamorros, for the most part, work for the CNMI Government which is heavily overstaffed like most island governments.

Saipan has six major hotels, numerous clubs and restaurants and diverse support facilities for tourists. It is a tourist destination with enough momentum to support itself. However, tourism on Saipan is still in a development stage with three hotels planned in the near future. These include the following: Diamond Hotel, Japan Air Lines Hotel and Surf Hotel extension.

3. Rota and Tinian

Both Rota and Tinian are underdeveloped islands with strong economic potential in the future. Large parcels on Tinian have already been leased to the United States Marines for training exercises. Although only approximately 200 soldiers show up each year, it is understood that the area will grow significatly when government use and development picks up. Rota is a beautiful lush island, much like Saipan. However, the vegetation is hardly altered by wartime activities like on Saipan. The island of Rota has tremendous potential as a tourist destination and already boasts the luxury Pau-Pau Hotel, less expensive, Blue Peninsula and the

bungalow type Coconut Village. The level of economy is small in comparison to Saipan. However, present state of development is changing and stands as a testimony of what may come.

F. EXISTING DEVELOPMENT, USE AND DEGRADATION OF MARINE RESOURCES

1. CNMI Wide

The people of the Marianas Islands have traditionally utilized resources from the ocean for their daily existance. Ancient Chamorros fished and gathered a variety of foods from the oceans depths, coral reefs and shallow lagoons. These people were closely linked to the ocean not only for food but also to communicate between islands of close proximity. Traditional recreational uses of the ocean has always played an important role in the daily life of these people.

Today there is less dependence on the ocean for food or daily sustenance. Although the people still prefer many of the local seafoods, they are able to purchase similar types in local stores now. Often, these seafood products are caught in local waters by the Japanese, canned or packed in Japan and shipped back to the Marianas to be consumed by local residents. The need for subsistance fishing and gathering in the islands is rapidly vanishing. Although it will never completely disappear, subsistence fishing and gathering is becoming more and more rare.

2. Saipan

Saipan, with a base population of nearly 18,000, a complex local government, healthy tourist population and a steadily growing private sector is probably the least subsistence island in the CNMI.

However, it is here on Saipan that Marine Resources Development is the strongest. The Department of Natural Resources Division of Fish and Wildlife keeps a constant watch over Marine Resources in the entire CNMI. It has the jurisdiction to monitor marine waters for natural and unnatural disturbances that can affect resources such as the crown-of-thorns starfish or heavy use by humans in areas like Micro Beach or Managaha Island.

Lagoon water quality on Saipan is being degraded by the continued drainage of stormwater from numerous storm drains. These are particularly numerous in the Garapan Area where rapid growth is taking place. Sheet runoff from numerous parking lots, roads and the ever increasing number of buildings in the Micro Beach Area, pours into the Saipan Lagoon causing silt plumes in the Tanapag Harbor Area. Landscraping for new developments in the north (Marpi, Tanapag and San Roque Villages) leave scars on the hillside waiting only for a rainfall to wash the topsoil into the lagoon. Throughout the rainy season a perpetual silt plume can be found in the deeper portion of the Saipan Lagoon from Marpi to the main channel in Tanapag Harbor. The Puerto Rico Dump continually leaches into the lagoon just north of the main tourist attraction at Micro Beach. Each of these contributes its own share of pollution to the Saipan Lagoon. Collectively, they tend to degrade the quality of water and in turn marine resources in the near shore environment.

Siltation from stormwater runoff has caused periodic degredation of lagoon water quality. This problem is usually associated with the rainy season when heavy rains wash the loose soil into the lagoon.

Oftentimes the loose dirt is from construction projects which use poor ground clearing practices. The ultimate problem occurs when corals are covered by heavy siltation. These corals often cannot remove the heavy silt particles and die even before they are completely covered.

Military activities on Saipan, prior to and during WWII, contributed significant degradation to the marine environment. These activities represent historical rather than present day activities and they include Spanish, German, Japanese and American occupations. Major degradation of the near-shore environment is particularly evident on beaches and in the lagoon. Channels have been blasted through the coral to allow access to shallow water areas and dredging of these channels has modified the bottom environment considerably.

Illegal fishing methods like blasting and chloroxing are still common occurances on Saipan. Sites like Unai Dikike (Boom Town Beach) is now a place name where blasting occurs regularly. Directly across from the Rock quarry in Marpi, individuals have timed their illegal blasts to coincide with rock quarry activites. The scar left by the illegal activites is obvious and lasting.

The Crown-of-Thorns starfish has periodically inhabited several sections of reef around Saipan. Today these animals are moving in greater numbers from south to north along the west coast. Some coral reef areas are heavily damaged by these animals. Recent field studies indicate that the coral reef proposed for the Managaha Island Marine Park Underwater Trail is being damaged by the starfish. If

removal efforts are not initiated immediately the coral reef could be completely damaged.

3. Tinian

Tinian is an island whose reefs are well developed but lacks any true lagoon complex. Only a few very small lagoon environments exist on the island.

The population of Tinian is very small with slightly less than 1000 people. Of this number, most are subsistence farmers, gatherers or fishermen. Utilization of marine resources is high on a per-capita basis because of their subsistence level of economy. Many local residents have boats and use them primarily for fishing. Nearshore fishing and gathering is still an everyday occurence for many people.

Tourisim on Tinian is still in its infancy. Only one hotel exists on the island with mediocre facilites. The use of marine resources by tourists is limited to a few easily accessible areas like the harbor particularly the Taga Beach Coral Patch Reef Area.

The U.S. Government leases a significant portion of Tinian for military training purposes. Each year about 200 marines land on Tinian for warfare training. On occasion, these activities include "assault training" utilizing amphibious landing craft. These activities are limited to specific areas of reef where beach access is possible. They drive these vehicles over the reef and up onto the beach. Damage to coral on the reef flat is significant, as studies have shown. However, recovery is remarkably rapid.

Tinian has a small but well developed harbor complex. This facility was built during WWII for strategic military purposes. Recently, the facility has been improved and is now being used as a port of operation for a small tuna fishing fleet. The CNMI government has recently exempted the fishing companies from certain taxes helping to encourage their development.

These activities, if they continue, will have a significant impact on marine resources in the near vacinity of the port. Accidental oil spills, bilge pumping and other port related activities can jeopardize resources if not properly monitored. This is particularly true in Tinian since the proposed site for marine park development is adjacent (south) to the harbor.

The CNMI Department of Natural Resources manages the development of marine resources on Tinian as on all islands of the Northern Marianas. The CRM office monitors coastal activites on a regular basis through a coastal coordinator on Tinian. Activities of these two agencies follow similar activities by these agencies on Saipan.

4. Rota

Rota is a large high island with approximately 1500 residents. The vast marine resources surrounding this island are presently underutilized. Rota, like Tinian, lacks an extensive shallow lagoon complex. However, there is a narrow semi-lagoon located along the entire west coast of Rota. At the extreme southern end of Rota is the only true lagoon on the island.

Development of marine resources is extensive and well established although underutilized. Residents fish these waters,

however, only about 10 fishermen use their boats efficiently. Most fishermen fish extremely close to shore not utilizing the fishing resources on the Rota Banks just a few miles off-shore.

Marine resources on Rota are well developed showing few signs of degradation. Two ships have run aground damaging the coral reef along a short section of the western reef. The Crown-of-Thorns starfish has moved across selected coral reefs periodically. The signs are still evident but not a major problem at the present time. Rota's main port in Song Song Village has undergone major renovation over the past few years. Dredging and filling operations have created extensive silt plumes which have degraded not only water quality but covered over and smothered selected coral communities in the area. Other than these problems the marine resources are in excellent shape on Rota.

G. DESCRIPTION OF THE VISITOR

1. Visitor Profile and Origin

For the first nine months of 1984 131,823 visitors came to the CNMI. Seventy-nine percent (104,150) of all visitors were Japanese, followed by Americans, 17 percent (22,511), and all others comprising 4 percent (5,156). Japanese tourists usually originate from the larger metropolitan sections of Japan: Main Island Honshu; Tokyo, Osaka, Yokahoma, Kobe, Nagoya and Kyoto. Very few visitors originate from Hokaido or Kyushu. Most Japanese visitors prebook their vacation with one of many large wholesale travel agents, which includes airfare, hotel accommodations, meals and selected day trips. The majority of Japanese tourists to the CNMI are young couples (early 20's to early 30's). In fact, Saipan is

known for its honeymoon vacations. In addition to young couples, there is also a significant number of young single women who usually travel in groups of two to four. Family visitors represent only a small number of the tour trade from Japan. A reasonable number of older men, with their families, as couples or single, represent the veterans who fought in the area during WWII. These groups come to the CNMI to remember their past and place peace offerings on shrines erected to the war dead.

Visitors from the United States represent a variety of types and it is difficult to determine a group that would comprise the largest percent. However, businessmen looking into potential ventures seem to make up a large part. Rarely do they bring families. Certainly one finds the typical American tourist, usually older, having traveled extensively and looking for a new adventure. Occasionally young single men and women make their way to these islands looking for a cultural experience. Visitors from other countries exhibit no specific trends except a rare charter of French, Germans and Italians.

Of the 131,823 total visitors in 1984 the majority (93.8% of 1984 arrivals) visited Saipan exclusively. Only 4.8% (6,335) visited Rota. Rota has one large first rate hotel (Pau Pau) , a small cabana style hotel with a few rooms (Coconut Village) and the Blue Penninsula, a modest but small hotel. Tinian is not set up to handle tourists efficiently. However, there is a small hotel which serves as the only accommodation on the island. Only 1,857 (1.4% of all 1984 arrivals to the CNMI) visited the island of Tinian. Table 3 gives the arrival

percent change in visitors arrivals for the 13 years beginning 1971. Note the downward trend during the economic recesion of the mid to late 1970's.

Table 3. Annual Percent Change of Visitor Arrivals in the CNMI by Fiscal Year 1971-1983.

YEAR	Number of Tourists	ANNUAL % CHANGE
1970	16,538	
1971	23,529	+30
1972	24,848	+6
1973	38,548	+36
1974	44,514	+13
1975	48,103	+7
1976	51,669	+7
1977	52,185	+1
1978	86,723	+40
1979	100,357	+14
1980	117,149	+14
1981	117,572	-0-
1982	111,173	-6
1983	124,024	+11
1984	131,823	+6

Total Expenditures (1970 -1980) $405,270,484

1. Source: Marianas Visitors Bureau, 1983 Annual Report
2. Annual percent change from previous year.

2. Visitation Trends

Japanese tourists seem to travel to the islands in two distinct blocks of time annually. The first is during the months of February and March and the second between June and September with July and August being the heaviest months. Although these trends are generally consistent throughout the years, peeks have moved up and back a month in some years. Table 4 is a typical rundown of arrivals by month for the year 1983.

Table 4. Total Visitor Arrivals and percent change by Month for Fy 1983 - 1984.[1]

Air/Sea	1983	1984	Percent Change[2]
October	7,684	8,079	+5
November	8,033	9,494	+18
December	8,938	11,070	+24
January	9,658	11,331	+17
February	10,287	11,952	+16
March	11,443	12,769	+12
April	8,511	9,549	+12
May	8,474	9,873	+16
June	11,941	11,407	-04
July	14,549	12,102	-17
August	13,711	13,664	—
September	10,795	10,533	-02
Total	124,024	131,823	+6%

1. Source: Marianas Visitors Bureau, 1984 Annual Report.

2. Percent change between 1983 and 1984.

The majority of Japanese tourists spend three days on Saipan before returning to their home. Estimated daily expenditure is $180 for their three day stay. This figure does not include airfare, hotel accommodation or meals, which are prepaid in Japan.

3. Visitor Activity Preference

To coin a phrase, the Japanese visitor in his travels is looking for a "western experience," which is probably why the tropical islands of the U.S. CNMI receives greater popularity than sub-tropical Taiwan, Okinawa or tropical areas of Asia like Penang, Kuala Lampur and Singapore. Furthermore, the typical Japanese visitor resides in a large metropolitan city spending little time near or on the ocean. For the Japanese tourist the islands represent "paradise found" with all its tropical splendor.

These tourists want to spend their time at the beach, lying in the sun sunbathing, swimming, skindiving to see some of the under-water sights, windsurfing and generally relaxing in a tropical environment. The Japanese are not so hung up with finding secluded beaches since they live in extreme closeness at home. They find their "space" in these islands bigger anyway.

The Japanese want to experience the U.S. way of life, eat their food, shop in their stores, attend their parties, speak their language and see their sights. All of this is not possible of course. However, given the chance they will attempt it all.

For the most part, the Japanese visitor wants to experience the water since this is an element quite foreign to most of them. Even for those that do not swim or spend some time in Japanese waters, the tropics is something remote and special.

III. RECOMMENDED SITES

Preliminary work for the development of conservation areas and underwater parks for Saipan, Tinian and Rota was conducted in 1982 by personnel from the Coastal Resources Management Office and the Department of Natural Resources, Division of Fish and Wildlife. Several sites at all three islands were surveyed from shore and in the water by diving and towing behind a boat. Considerable effort was given to choosing locations that were accessible, close to shore, on public lands, easily developed and in a relatively safe location in regards to wave action, currents and water depth. High priority for the underwater parks was finding a location where there was a well developed reef with good live coral coverage, abundant fish and other marine life. This study recommends three locations as candidate sites for marine parks and conservation areas in the CNMI.

A. SAIPAN

Saipan has a rather extensive lagoon and barrier reef along the entire length of the west side of the island. Although there are several potential sites for an underwater park, one stands out in terms of coral reef development, abundance of marine life, moderate water depth, access and existing tourist use. The recommended site includes the island of Managaha, the underwater area surrounding the island including numerous patch reefs, a section of the barrier reef and some historic properties from WWII including several airplanes. Refer to Figure 2 for boundaries of the proposed Managaha Island Marine park. The island itself and a portion of the near-shore environment stands as a focal point of the marine park. Siginificant historic and cultural remains can be found on the island and a meandering path circles the island providing access to these.

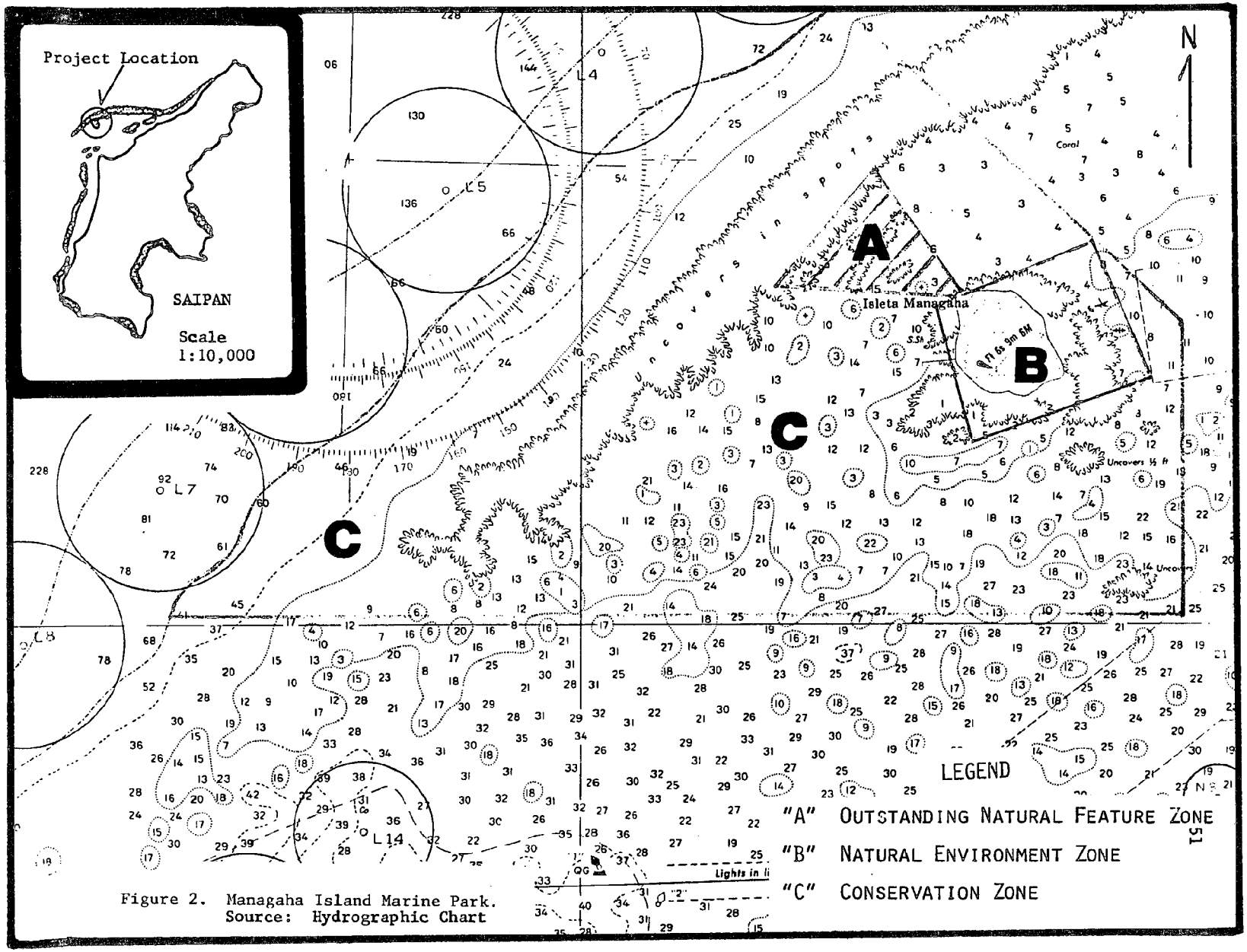

Figure 2. Managaha Island Marine Park.
Source: Hydrographic Chart

Another focal point of the park is the proposed underwater trail. This trail would be located in the shallow and diverse patch reefs just offshore of the beach along the northwest corner of Managaha Island (Figure 2). This trail would be buoyed to lead snorkelers and divers along the trail and contain underwater markers to provide information and identification of selected marine life. Significant historic properties within the park (and possibly others nearby but outside the actual park boundary) could also be located, buoyed and identified for use and protection.

Depending upon the final layout for the marine park, the size of the park's outstanding natural feature area (Zone A), natural environment area (Zone B) and conservation area (Zone C) may be altered.

Based upon extensive diving and underwater towing throughout the entire area, PBEC is recommending the following boundaries as illustrated in Figure 2. The southeast boundary of the conservation area includes the diverse patch reef which is awash at low tide. In close proximity to this reef is a large airplane wing, fuselage, pontoon and an intact upsidedown plane. Some of the best developed patch reefs are within this Conservation Zone (C) and a section of the barrier reef out to the 10 fathom (60 ft) contour has also been included. The tip of the barrier reef and the northern boundary of the main channel form a natural southwestern boundary.

The approximate size of the entire proposed park is 2.6 km^2 or 1.0 mi^2 (640 acres) and represents approximately 5% of the total Saipan lagoon. The location for the Underwater Nature Trail (Zone A) was chosen because of easy entry and exit either from the beach on

Managaha Island or by boat. This area is very rich in marine life supporting luxurious coral growth. This area of the park is also in the protected lee of the island during the normal east and northeast tradewinds. The approximate size of the Underwater Trail is 73,000 m^2 (18 acres) although the underwater markers will likely be clustered in a smaller area. This Underwater Trial represents approximately 2.8% of the total park area, a very small portion where all fishing and collecting would be prohibited subsistence fishing is encouraged in other zones.

B. TINIAN

The location for the Taga Beach Marine Park on Tinian is the patch reef and nearshore marine area just south of the harbor entrance channel and offshore of Taga Park and Jones Beach. Boundaries and zones of the park are deliniated on Figure 3. The seaward boundary is the 10 fathom (60 ft) contour.

The location of the Taga Marine Park was chosen for several reasons. It is one of the few areas which has a well developed patch reef offshore and fringing reef alongshore. There is good access from shore and its close proximity to the harbor means short, cost effective trips by tour and dive boats. The location is also well protected from the normal tradewinds and ocean swells.

The area of the Taga Beach Marine Park is approximately 946,000m^2 (234 acres). It is proposed that the patch reef be zoned "A" Outstanding Natural Features, and be totally protected from fishing and harvesting as this reef represents a small fraction of the total reef and shallow water environment surrounding Tinian. The remainder of the marine park will be zoned "B" as a Natural Environment Zone. There is no conservation zone but subsistence fishing is allowed in Zone "B".

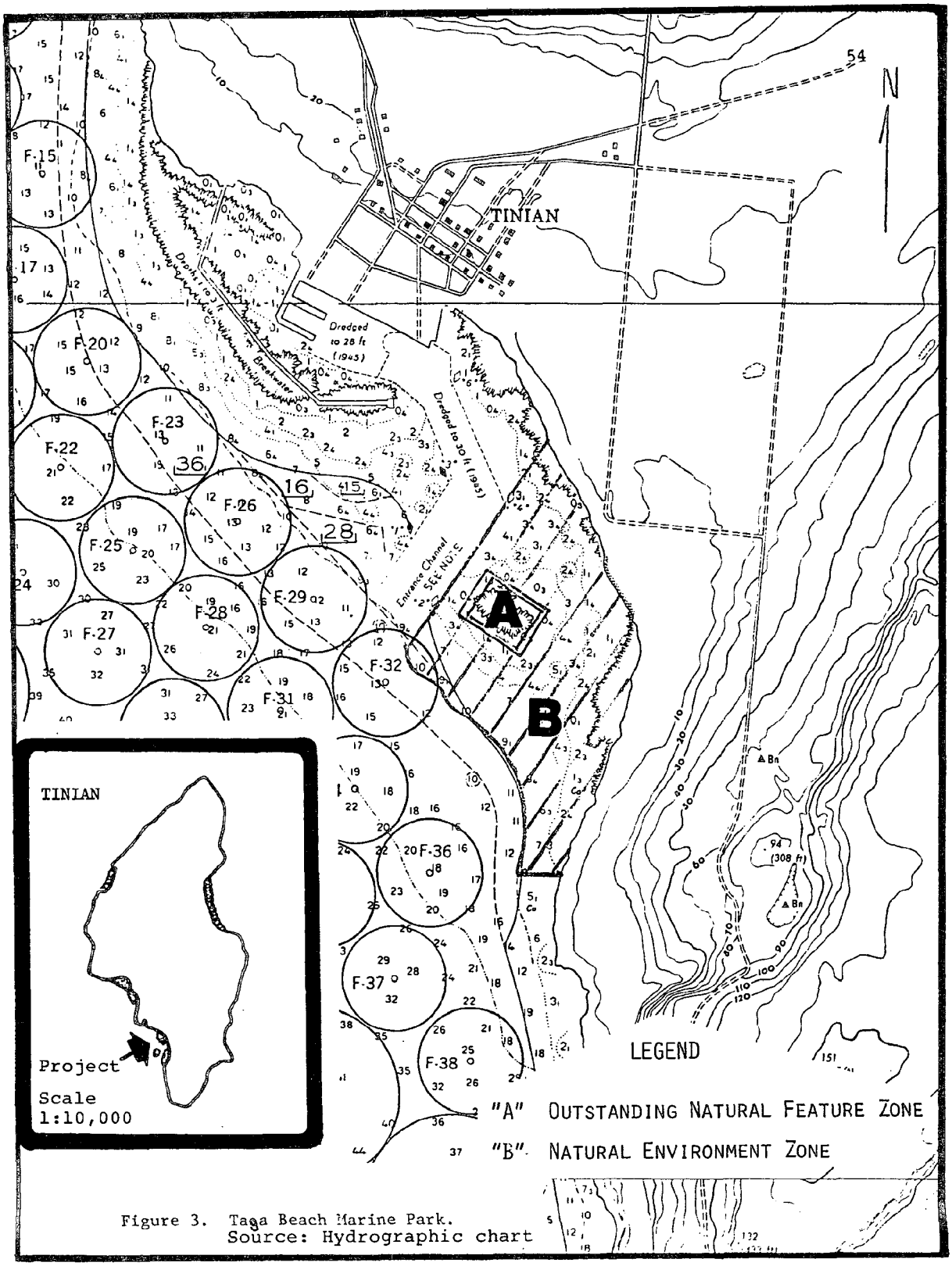

Figure 3. Taga Beach Marine Park.
Source: Hydrographic chart

C. ROTA

The Sasanhaya Bay Marine Park is located in the eastern portion of the bay and extends from Sagua beach south to Puntan Ponya and seaward to the 20 fathom (120 ft) contour. The boundaries are shown in Figure 4. The main reason for extending the park boundary to the 20 fathom contour here is to include the WWII sunken Japanese cargo vessel "Shoun Maru." The ship is located approximately 600m (0.37 mi) from shore and sits upright in 30m (100 ft) of water. The wreck offers excellent diving for scuba divers.

The Sasanhaya Bay Marine Park is divided into two zones, with the section where the wreck is located designated Zone "A". Zone "A" prohibits the taking of all marine life while the remainder of the park (Zone B) allows subsistance fishing. The approximate size of the marine park is .5 mi^2. Although beach access to the park is possible at a few locations along the shoreline, much of the park (including the wreck) requires boat access. This section of Sasanhaya Bay is usually protected from the strong tradewinds and ocean swells but occasionally does experience rough conditions with strong currents. This part of the coast is regularly fished and is characterized by good coral development and diverse marine life.

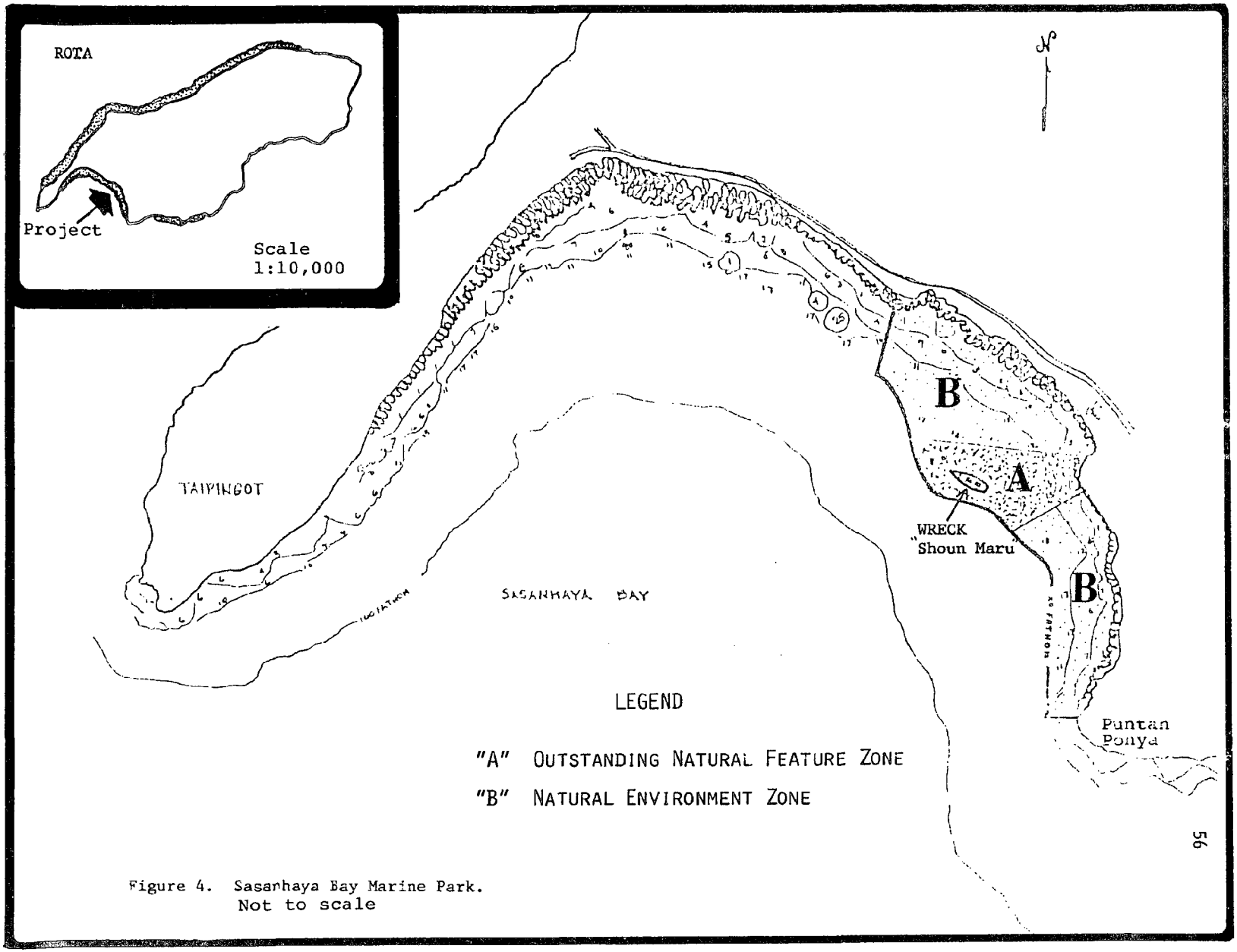

Figure 4. Sasanhaya Bay Marine Park.
Not to scale

IV. THE MANAGEMENT PLAN

A. RESOURCE MANAGEMENT AND ZONING

The Resource Management Plan is designed to monitor existing use patterns for the proposed marine parks, develop unique interpretation concepts for each site, improve existing facilities and services and provide long range plans as visitor use increases.

Each of the marine parks are to be zoned as previously noted according to the various uses presently in effect and those established as management objectives. Proposed management objectives of the park lands and waters will be shown on the Zoning Management Map in each of the subsequent Management Plans. These zones are in accord with the National Park Service Classification System. In this system, all lands, reefs and waters are classified into three zones as follows.

1. Zoning

a. Outstanding Natural Feature Zone A

This zone encompasses coral reefs and features of unusual intrinsic value that led to establishment of the particular marine park. The zone will be managed to protect aquatic resources and to provide for public appreciation and enjoyment to the extent that natural values are not impaired. There will be no taking of any marine life or other artifacts in the area.

b. Natural Environment Zone B

Land and water in this zone will be managed to allow environmentally compatible recreational activities. For the most part these activities involve swimming, diving, wind surfing, sailing, boating and other activites of this nature. This management

zone will continue to receive much of the existing use within the park and the water.

c. Conservation Zone C

Land in this zone possesses particular value as wildlife habitat and/or for research. The land will be managed to perpetuate ecological values. Fishing in this zone will only be allowed for subsistence purposes.

2. Resources Management

a. Natural Resources

Fragile coral formations in the vicinity of each marine park will continue to be protected by designation of an underwater trail identifying these features. Endangered species will continue to be protected by local and federal legislation.

Research programs will continue and new programs will be initiated as needed to provide knowledge for management of natural resources. One particular field of investigation which should be examined are the consequences of continued consumption of marine life by inhabitants of the CNMI. Other research that should be conducted include:

- Development of a natural resources base map, including a complete coral inventory.
- Investigation and monitoring of beach processes.
- Analysis of impacts by swimmers, scuba divers, fishermen, boats and natural ocean and storm processes on the reefs.
- Investigation of coral growth rate, productivity and mortality.

- Monitoring of turtle nesting, including species composition and reproductive success.
- Monitoring of established exotic plants to determine their growth, regeneration and detriment to native flora.
- Monitoring and impact analysis of water pollution resulting from commercial and recreational boating and sources outside the park.

b. Cultural and Historical Resources

Cultural and historic resources within Marine Parks of the CNMI will be managed according to the managment policies of the CNMI Historic Preservation Office. All undertakings in the Managment Plan have been developed in consultation with the Historic Preservation Office and the Territorial Historic Preservation Officer.

An underwater survey has been conducted as a part of a larger project to evaluate submerged resources within the boundaries of the park. This survey has determined the number and significance of historical and cultural resources. In addition, the survey will recommend the importance of these resources. Through the Advisory Board the appropriate agency will monitor these wreck sites and take appropriate measures to protect them if the resource is threatened in any way.

A number of known submerged cultural and historic sites exist in the three proposed parks. Significantly more historic sites exist in the Saipan Lagoon than other islands of the CNMI. Some of these properties exist within the boundaries of the pro-

posed Managaha Island Marine Park. One ship is within the confines of the Rota Park.

The Historic Preservation Office managment policies state that the dynamics of shorelines in the CNMI will be allowed to take place naturally. These proposed Marine Parks are being created to preserve existing natural beauty. The process of seashore dynamics and island geomorphology might uncover presently unknown cultural or historic resources. Accordingly, the following program will be implemented to identify, evaluate, and determine future management actions for such presently unknown historical or cultural resources:

- If a cultural resource is identified, it will be recorded and evaluated as to its integrity and significance by appropriate cultural resource specialists in consultation with the CNMI Historic Preservation Officer.
- Following completion of the evaluation study, the resource will be managed in accordance with its significance.
- The CNMI Historic Preservation Officer will be notified of the resource discovery and will be advised of the proposed management strategy by the National Park Service, if within NPS jurisdiction.

No adverse impacts on significant cultural resources are anticipated as a result of this plan. However, should unanticipated natural phenomena threaten a significant resource or if a

newly discovered resource is found to be threatened by a proposed action, then CNMI cultural resource specialists will ensure that all feasible planning or design measures are taken to avoid or minimize impairment of the resources. Unavoidable adverse effects will be mitigated by professional data retrieval involving controlled excavation, architectural recording, archiving or other acceptable means.

c. Recreational Resources

Recreational use will be controlled to avoid overuse and damage of submerged resources, such as propeller scarring of corals or destruction of coral by anchors and prop thrust. Mooring devices should be provided at selected sites for proper mooring of boats.

B. VISITOR USE AND INTERPRETATION

1. Orientation

With an average ambient water temperature of 28°C (82°F), clear water, coral reefs, colorful fish and the diverse variety of marine life, there is tremendous potential for visitor use within a marine park in the CNMI. For many, this view of the underwater world will be their first and likely an experience they will long remember. For the trained snorkeler and scuba diver, the islands provide some of the best reef and wreck diving and spearfishing found anywhere in the world. It is imperative that the interpretive methods and procedures reach as many tourists as possible including those that never venture underwater.

It is reported that, regardless of location, most visitors to any underwater park will be nondivers. The key to the nondiver's awareness and enjoyment of the underwater park lies in the art of interpretation. The nondiver can only experience the underwater world through creative interpretation. Therefore, a major emphasis of the interpretive program takes place through an on-shore visitor orientation center. The visitor orientation center can range from an indoor or covered "theater" where park staff might give an oral orientation augmented by a color slide presentation, movie or video tape. Professional presentations can be prepared that are fully automated by using either a videotape cassette or a slide program utilizing a two-projector dissolve system with cassette tape. These presentations could be run at regularly scheduled times, two to four times a day and coordinated with peak visitor arrival times.

Other exhibits at a visitor center might include museum displays, maps, aerial and underwater photographs and artifacts. An effective way to present visual material is through the use of small kiosks with exhibit panels (Figure 5). These Kiosks would contain a locator map(s), aerial view of the park, photographs of marine life and general park information. These exhibits should be clearly presented and not overly technical avoiding confusion. As would be the case with all orientation materials and programs for tourists in the CNMI, they must be given in Japanese and English.

2. Underwater Trails

In designing and locating an Underwater Nature Trail, an area with good coral reef development and diverse marine life must be

Interpretive Display Concept

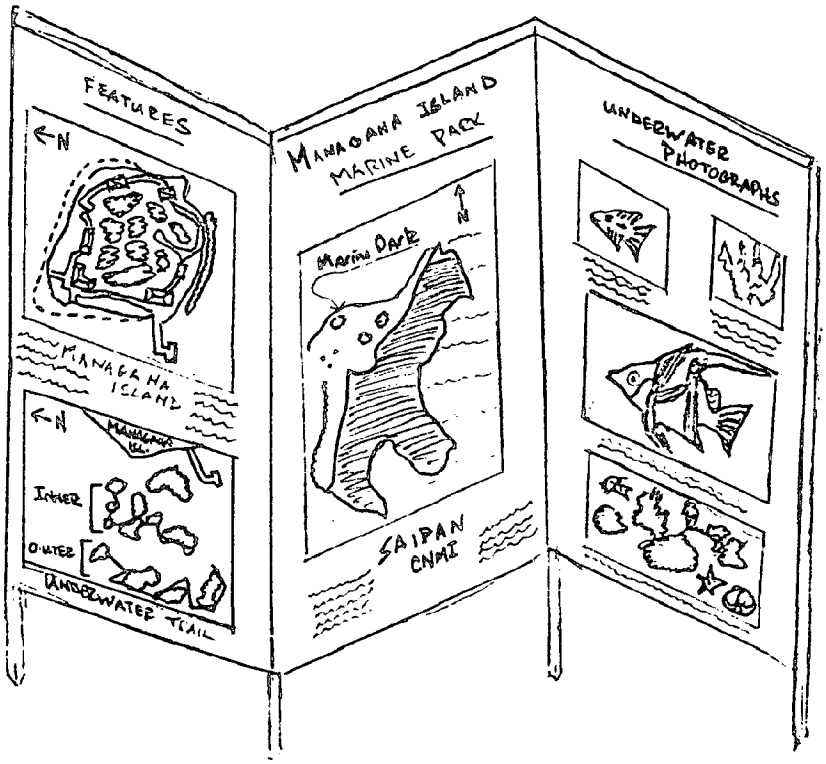

Figure 5. Marine Park Interpretive Display. Two-sided, free standing plexiglass display framed in wood with matt liner between plexiglass sheets. The panels are 3'x6' and detatchable with handles for easy transporting between display sites. Text will be in English and Japanese.

chosen. The water should be shallow enough to allow enjoyment and viewing by both snorkeler's and scuba diver's and should be in an area where the water is consistently clear and free of pollutants. Access could be from shore and/or by boat depending on proximity of the resource and safety considerations.

One problem some underwater trails have experienced is that the visitor gets lost or has difficulty in locating each successive station. A major objective would be to design a trail that is easy to follow from beginning to end without a guide. This means keeping stations short distances from each other. In addition, surface markers or floats could be provided to allow the diver to see the next station or to reorient himself should he become confused. These buoys could also be designed to serve as rest stations and augment security and safety of the visitors.

The most common interpretation system of an underwater trail consists of a series of stations with plaques or markers containing descriptive language and drawings or simple numbers keyed to a waterproof chart or booklet the visitor would carry with him. The underwater trail should not be too long with no more than 20 - 25 stations. The markers are generally concrete blocks or stands with an engraved plastic or glass plaque (Figure 6). The message should be brief and simple, should stimulate interest, provoke curiosity and stress the fragile nature of the resource. A plaque could point out a type of coral such as "brain coral" with an outline drawing of it. A station could be situated in an area where a certain species or two of fish are almost always found. Next to a bed of staghorn

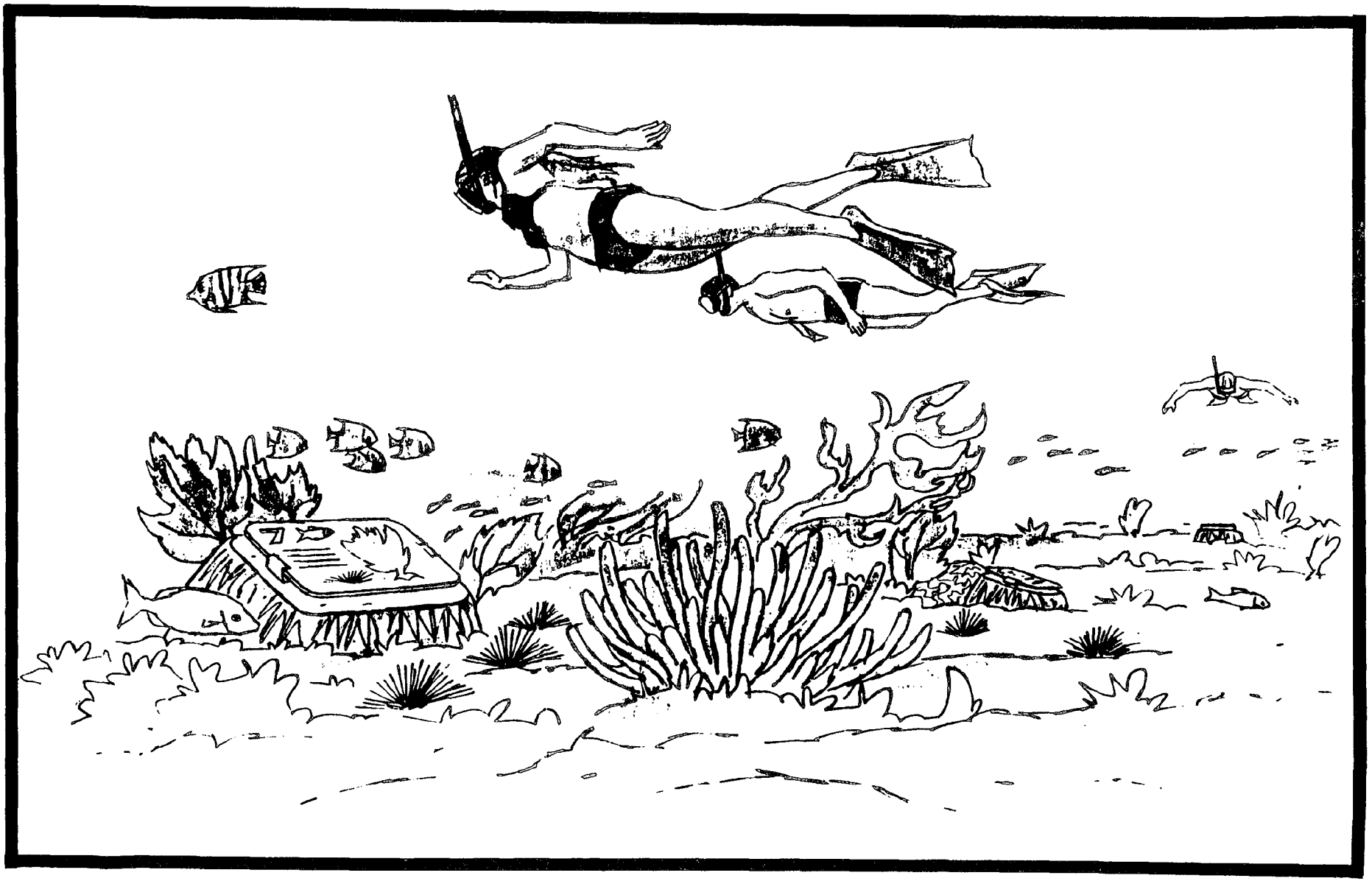

Figure 6. Example of Underwater Site Marker System.

(Acropora) coral a plaque might warn the visitor, "FRAGILE CORAL-DO NOT STAND OR REST ON IT" and other language of this nature.

One advantage of the underwater trail system is that it firmly directs the visitor's attention to specific areas which contain interesting marine life. This provides for the most efficient use of the visitor's time while also providing for leisurely, unsupervised travel along the trail.

A disadvantage of the underwater trail is that it concentrates divers in one area and could lead to crowded conditions on busy days. It may also stress the environment by concentrating individuals in a small area. Possible mitigation measures to these impacts include changing trail routes periodically, moving plaques to other (nearby) areas of similar features and periodic closure of trails.

Another method of interpreting park features is through the use of a small, waterproof guide pamphlet which points out features and interesting marine life found in various parts of the park. This allows the visitor to choose diving areas that are most interesting to him. This technique promotes dispersal of divers throughout the park, eliminates crowding and reduces impacts to any one area. This set-up might also eliminate, or certainly reduce, the costs of maintaining a permanently mounted underwater trail system. One disadvantage of this concept is reduced safety by spreading the divers out over a larger area. It would also be more difficult to restrict or monitor boat traffic within the park, another safety consideration for the park users. This might best be accomplished

through interpretive workshops for the private concessioners. These workshops would increase and improve the quality of services offered to the visitor.

3. Non-Diver Park Use

The non-diver could benefit from displays and audio-visual presentations at the orientation center. Educational publications, slide sets and other materials would be available for sale by the park and private vendors.

Glass bottom boat tours around certain areas of the park would provide the non-swimmer with excellent views of coral reefs, fishes and other colorful marine life as well as historic artifacts. In areas where there are sunken historic properties such as ships and airplanes, viewing from a glass bottom boat can be truly exciting.

For the non-diver who can swim or feels comfortable in the water, privately conducted basic snorkeling lessons could be given by trained instructors in a very short time on the beach and at the water's edge. Using equipment supplied by the concessionaire, including an adequate inflatable flotation vest (buoyancy compensator), these neophyte snorkelors could be safely led in a group along an underwater trail. For the visitor who has never personally viewed a tropical coral reef, this will present a truly outstanding experience.

To maintain high standards of visitor enjoyment and safety, educational seminars and/or training for diving instructors, guides and boat operators are essential.

4. Other Park Features

If sunken historic properties are located within the boundaries of an underwater park they can be incorporated as features to be enjoyed by snorkelors, scuba divers and glass bottom boat passengers, depending upon their location and depth of water. In addition, if there are wrecks located outside the confines of the park that would be of interest to the visitor, they could be located, identified, buoyed and protected. As is the case with all historic properties in the Truk Lagoon, there should be no salvage or removal of any artifacts associated with the wrecks, and to enhance their roles as artificial reefs, spearfishing on the wrecks should also be prohibited.

Saipan and Rota both have sunken wrecks inside and outside of the proposed marine parks which would be of interest to divers. Scuba diving on these wrecks should be limited to properly certified divers and there should be bilingual information available regarding identification, depth of water, orientation of the wreck and other interesting aspects. It is also advisable to attach sturdy mooring buoys to most of the wrecks. This not only provides for easy location of the site but also minimizes damage to the wreck and coral from repeated anchoring.

5. Site Specific Interpretation

a. Saipan

The Managaha Island Marine Park should have an underwater nature trail in the area shown in Figure 2 (Zone A). Approximately 20 stations with plaques would be sufficient to adequately cover the area.

Within the park boundary the following historic properties can be found: A wing and partial fuselage of a small, probably Japanese aircraft; an almost intact, single engine, upsidedown Japanese airplane; a large wing and other pieces of what appears to be an American airplane; a piece of tail and fuselage from the same plane; a badly deteriorated barge and a few other miscellaneous objects. It is recommended that all these be protected and incorporated into the park as attractions.

In addition to the above properties, adjacent waters of Tanapag Harbor and Saipan Lagoon contain a 4-engine Japanese seaplane, a small Japanese sub-chaser, several M-boats (landing crafts) and other significant war related properties. A study that is currently underway for the Historic Preservation Office document these properties. Some of these may warrant inclusion and protection as features of an underwater park.

The shore-based orientation display center would be located on Managaha Island as part of or adjacent to the existing pavillions and gift shop area. It is recommended that a quality audio-visual presentation be prepared for the marine park. It should be either a two projector/dissolve slide show with an accompanying sound track (bilingual) or a video-tape cassette program, depending upon the amount of funding available and other requirements. Either format can be easily duplicated and used for off-island promotions and advertising. The program could be available to dive clubs, travel organizations and other interested groups.

In addition to the audio-visual program, interpretive displays should be prepared using photographs and maps on orientation display panels. These can be properly mounted and protected from sunlight, rain and other elements. The presentations should be simple, easily understood, brief and attractive. In addition, the park should develop an interpretive guidebook explaining the park concept and underwater trail. This could also be used for park orientation, education and advertising. Private interests should be encouraged to develop booklets, maps, slide sets and other products that would appeal to park visitors. The University of Guam has recently published two excellent color books which describe fish and corals found in Guam waters. Many of the species described in these books are also found in the Saipan Lagoon.

There are currently three dive shops on Saipan offering dive classes, rentals and tours. Many visitors now dive in the vicinity of Managaha Island and equipment for snorkeling and scuba diving can be rented there through a tourist oriented concesion. It would appear that the private sector is well equipped to handle the needs of visitors to the marine park. It will be necessary to devise a fair method for providing services from the dive shops. The park may also want to implement a modest entry and use fee for visitors which could be used for operation, maintenance and improvements.

b. Tinian

The present level of tourism on Tinian (1,857 in 1984) is quite small compared to Saipan. There are no dive shops or

other sources of snorkeling or scuba equipment rentals and no compressor for filling tanks.

Although the current situation does not warrant the expense of implementing an underwater trail or building a visitor orientation center, the Taga Beach Marine Park should be established now to preserve the area for future interpretive development. A few anchored buoys could be placed to mark the patch reef and the boundaries of the park. A simple roofed kiosk orientation center could be erected on shore with a locator map, aerial view of the park and a few underwater photos. A simple brochure could be produced to orient the visitor to the park and its features. When warranted, shoreside park facilities could be upgraded and expanded to include a changing room, showers, restroom, picnic tables and shelters.

One drawback to the Taga Beach Marine Park is the 350m distance from shore to the patch reef making it a long swim for a novice or out of shape snorkeler. The harbor is very close to the park, however, at this time there are few boats available to ferry visitors to and from the park area.

c. Rota

Rota currently receives nearly 7,000 tourists annually, many of which are snorkelers or scuba divers. There is currently one dive shop at the Paupau Hotel which offers lessons, tours, rental equipment and air. There are a few small boats that take tourists out for fishing or diving excursions. If a marine park were established, it may provide an opportunity for another dive shop and/or a dive tour related business.

The Sasanhaya Bay Marine Park covers a .5 mi^2 area along the southeast portion of the bay to Puntan Ponya. However, there are only limited beach areas that provide safe access to the reef and beyond. The orientation center and access point will have to be developed in a suitable location, perhaps at Sagua Beach or similar site. Limited facilities such as a restroom, shower complex and one or two kiosks with interpretive information could be constructed. A brochure with map describing the features of the park could also be developed.

Site investigations need to be conducted to determine the feasibility of implementing a limited underwater trail system with plaques. Such a trial would follow the reef edge as there are no offshore patch reefs or pinnacles in this area. There is good coral development and fish diversity along the reef front and in surge channels.

The Japanese cargo ship "Shoun Maru" lies upright in 30m (100 ft) of water within the park boundaries (Zone A) (Figure 4). This wreck can be viewed through glass bottom boats and by snorkelers. It provides an excellent wreck dive for scuba divers who can view such artifacts as a truck body, bicycles, portholes and excellent marine life. It is recommended that the wreck be marked with a mooring buoy for ease of locating and to minimize damage to the ship from anchoring. Removal of artifacts and spearfishing would be prohibited on the wreck.

There are supposedly one or two other sunken ships located in deep water in the vicinity of the Paupau Hotel or further to

the southwest. It should be determined whether or not these exist and if they are shallow enough to dive on. If warranted, other historic properties should be considered for protection and inclusion in a park.

C. OPERATION

1. General Statements

Marine parks generally function to protect underwater environments while providing safe and enjoyable recreational opportunities for visitors. They help to educate people about the ocean and its ecosystems and provide interpretive programs of the marine environment for everybody's enjoyment.

2. Advisory Board

The essence of efficient operation and proper management is vested in the Advisory Board. This board establishes policy and determines the direction marine parks take in the CNMI. Suggested representation on the Advisory Board include the following agencies:

- CRMO (Lead Agency)
- Legislature
- Historic Preservation Office
- Department of Natural Resources (Division of Fish and Wildlife and Department of Parks and Recreation)
- Marianas Visitors Bureau
- Department of Public Safety

Figure 7 represents a flow diagram of the Advisory Board and how the different agencies interact. Each agency will be represented by one individual appointed for a term of one year except the

CRMO and Legislature. The latter two groups will have a representative appointed for two (2) years. CRMO is the only non-voting representative except to break a tie when an equal number of representatives make a quorum. Appointments will be staggard in order to provide consistancy to the Board.

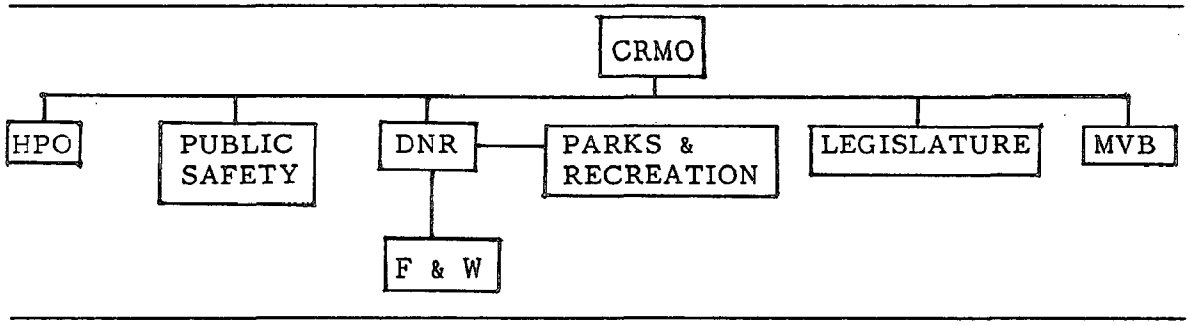

Figure 7. Flow Diagram of CNMI Marine Parks Advisory Board.

Meetings will be held monthly and will be comprised of a quorum (at least four). The CRMO will be responsible for coordinating these meetings, establishing an agenda and deciding a convenient time and place. Each agency, by the nature of their responsibilities within the CNMI Government, will add input to these meetings and carry out any projects delegated within their jurisdiction by majority vote of the board.

3. Staff

An educated and trained staff will add much to the general enjoyment and safety of visitors to the marine park. Staff should have a reasonable working knowledge of each park's unique features

and should be able to present them enthusiastically and in a interesting fashion. Staff assigned to oversee diving activities need not be divers. However, it would be helpful in most cases. Nevertheless, staff members must be able to recognize and evaluate unsafe practices or activities that may be damaging to the environment and hazardous to all users particularly divers.

When selecting personnel to staff marine parks in the CNMI one should look for individuals who have specific academic skills and interest in nature and the marine environment. One should look for individuals who are willing to continually improve their knowledge and who can pass this knowledge on to others with interest and enthusiasm. Using volunteer groups to work within the framework of the marine parks system is a viable alternative to any interpretation program.

One (1) worker will be needed to oversea the day to day operation of small marine parks like those in the CNMI. For the sake of reducing costs during start up operations, an existing government employee should be utilized and may be found in the following CNMI government agencies:

- Department of Natural Resources, Division of Fish and Wildlife, Division of Parks and Recreation
- Historic Preservation Office
- Coastal Resources Management Office

As the park grows, additional employees can be added based on specific need. Individuals participating in this program will be given special interpretive and diver training as needed.

4. Policy Guidelines for Visitor and Diver Use

SCUBA diver qualification will be required of all divers who intend to scuba dive within park boundaries. Diver qualifications will consist of certification cards issued by the following associations: National Association of Underwater Instructors (NAUI), Young Mens Christian Association (YMCA), Professional Association of Diving Instructors (PADI) or an appropriate international organization. Uncertified divers in a training class will be permitted to use scuba within the park only under supervision of a certified instructor.

All scuba diving shall take place in at least buddy pairs. Refusal by a staff member to allow a dive should be avoided except under unusual circumstances where safety is a factor. A person should be dissuaded to dive through a friendly discussion on equipment requirements and the hazardous conditions to be encountered or by recommending alternate diving areas or methods (skindiving only) within the limits of the diver's experience, skill and equipment. If the diver persists it should be made clear that, as in any dive, the diver assumes full responsibility for his/her actions.

Use of a log-in/log-out system for scuba diving will provide a record of divers using the park system. Diving logs should list the name of certifying organization for each diver, level of certification, location of dive, time of dive, time in the water and expected time out. There must be a designated dive master when organized groups dive in the park. Diving parties will be responsible for removing all dive buoys or other objects used during the dive.

For divers who do not use scuba, all of the same requirements will be in effect except diver certification. However, each diver must know how to swim before entering the water. Divers who plan on utilizing the underwater trail system or designated skindives within the park should sign a diver's log located at the park rangers stand.

5. Emergency Procedures

There should be a set of emergency procedures developed for each park where diving takes place. These procedures shall be put into a manual available on site and provide for:

- Diver Rescue
- First Aid for minor wounds and transportation to a hospital for those requiring treatment
- Oxygen and First Aid for pressure related emergencies to be administered by qualified personnel trained in its application
- Phone numbers of emergency facilities kept readily available and updated

D. ENFORCEMENT AND MONITORING

Monitoring and enforcement are essential elements in effective management of a marine park. Without these elements, natural, historic and cultural resources within each park suffers a great degree of degredation. An on-going monitoring program becomes the eyes and ears of what is really happening within the park and how it is holding up to increased visitor pressure. Results of monitoring efforts are then used by the Advisory Board to mitigate negative impacts.

Monitoring of Marine Parks in th CNMI should be the responsibility of the DNR through the Division of Fish and Wildlife. Monitoring activites for these parks could be implemented as a routine part of regular monitoring activities. Findings should be reported to the Director of the DNR in writing or verbally, if the matter is urgent, but always followed by a written report. The director of DNR will then report these findings to the Advisory Board during its regularly scheduled meeting. Special meetings can be called if the matter is urgent.

Personnel employed by each Marine Park will have the responsibility of enforcing park policy, maintaining order within the park and assisting park users. It is essential that enforcement activities within the park be handled on a low-key basis. When an incident presents itself, all effort should be made to inform the users of park policy and the potential negative impacts that may result from his/her actions. In no way should the user be embarrassed or harassed by a park employee. If, after a reasonable period of time, the user still wishes to pursue his/her own course of action (barring serious consequences) the user should be informed of his/her negligent conduct and that the park will not be held responsible for his/her action. Where serious consequences are possible, the CNMI Police Department should be notified. These matters should then be written into a daily log.

E. VIOLATIONS AND FINES

Violations of park regulations can be minimized considerably through proper park management and monitoring activities. However, violations are bound to occur since many thousands of people will be using the facility for a variety of purposes. The vast majority of these violations

will be minor infractions that can be handled in an informal manner through discussions with park users in the same fashion a life guard would. However, occasions do arise when such informal discussions do not bring about the desired results. In these cases police officers should be called in to deal with the situation. In most cases severe violators are likely to try and escape after warning. Many times they will evade park employees and actually get away. In these cases all pertinent information should be taken down so that it can be turned over to the police department for further action. Warnings can be given first offenders based on the severity of the action.

Fines will only be assesed for major violations where persons are declared to be negligent or purposely violating existing regulations and for repeated offences.

F. SUMMARY OF COST

1. General Statement

It is not possible at this time to project exact costs for the development of each marine park designated in this management plan. Although the sites have been identified, extensive site specific field work and interpretation have yet to be done. Preliminary evaluation of each site was carried out by a CNMI official in 1982. However, this individual is no longer with the government and little specific information was formally organized and prepared. Managaha Island and the Saipan Lagoon is the only site where more than preliminary data exist. This site was extensively surveyed during recent field studies associated with the Saipan Lagoon use Management Plan.

Results of this study suggest that the entire island of Managaha, surrounding reef and selected historic wrecks nearby be included in a marine park. The plan further identifies a cluster of coral heads along the west coast of Managaha as an underwater trail. This trail would become the focal point of the Managaha Marine Park project. Although site specific data have already been collected from the Managaha area, exact location of the trail is still not known. Additional field studies are still required for this site as well as all others in the CNMI.

Costs for implementing this marine park program occur in the categories of additional studies, land aquisition, development of facilities, personnel and equipment.

2. Additional Studies

Each of the three designated sites require a manangement plan that will gather together the necessary site specific data needed to determine the most appropriate methods for interpretaion, aquisition, staffing, equipment and development. First Priority is to develop a scope of work for consultant services to produce a management plan for marine parks on Saipan, Tinian and Rota.

	COST
Saipan: Managaha Island Marine Park Managment Plan	$4,500
Tinian: Taga Beach Marine Park Management Plan	4,500
Rota: Sasanhaya Bay Marine Park Management Plan	4,500
	$13,500

3. Land Acquisition

At this time it is assumed that all potential sites are presently owned by the CNMI government eliminating the high cost of land aquisition. Only an insignificant in-house administrative cost of land transfer is involved. Depending on actual site development identified in the individual park manangement plans, upland areas may need aquisition to provide access and support facilities.

4. Personnel

The number of staff required to properly operate a marine park depends on a number of factors such as size of park, activities and number of daily visitors. Marine parks in the CNMI are small when compared to others in the U.S. and foreign countries. These small parks and can be managed by one individual working closely with the Advisory Board. Since these parks will take years to develop fully, a single individual will be adequate in the short term. This individual might easily handle the marine park managment tasks as a routine part of on-going CNMI government activities. Selection of an individual at this time should come from within selected agencies of the CNMI government, such as the CRMO or Department of Natural Resources, Division of Fish and Wildlife or Parks and Recreation.

Initially, this indiviudal might only require 50 percent of his work time toward the development of the marine park program. Because priority of sites is given to the Saipan Managaha Island Marine Park it is suggested that the employee reside on Saipan where his/her attention can be spent on the most important park for the moment. Periodic trips can be made to each of the other parks as needed.

	COST
One (1) employee at 50% of average income of $7,000	$3,500
Diver training if needed	150
First Year	$3,650
Successive Years (as amended)	$7,000

5. Development of Facilities

Development costs for each of the marine parks will depend on the level of interpretation, infrastructure and numerous related facilities. Since no in-depth site specific plans have been done, it is impossible to determine actual development costs for each site. However, preliminary studies have been done on the Managaha Island Marine Park Plan in the form of data collection and development concepts and these development costs are included as follows:

MANAGAHA ISLAND MARINE PARK	COST
- Visitor orientation center (display of maps, photographs, general in-formation and park layout)	$12,000
- Underwater trail (20 stations with identification plates and marker buoys)	12,000
- Marker Buoys for 10 additional sites in the park	6,000
- Signs and identification plates for additional sites in the park (Terrestrial and Marine)	3,000

	COST
- Interpretive Literature (maps, species identification charts, general information handouts (does not include printing cost)	10,000
- Interpretive Video	10,000
	$53,000

6. Equipment (costs are based on December 1984 estimates)

The following equipment will be needed for the first year but will be useable for three (3) subsequent years or until replacement is required.

	COST
14-Foot Inflatable Boat	$2,000
25 HP Outboard Engine	1,500
Pick-Up Truck	8,000
1 set Scuba Gear	800
	$12,300

7. Annual Operating and Maintenance Expense

Boat and Motor	$500
Pick-Up Truck	750
Visitor Orientation Center	500
Underwater Park	1,000
	$2,750

G. PROGRAM PROJECTIONS

The CNMI Marine Park Management Plan has identified three sites for initial inclusion in the program; one site for each major island. One of these, the Managaha Island Marine Park, is considered the priority site for developmental purposes. The other two sites are designated only as parks at this time although minimal development could take place immediately. Further development of the sites on Tinian and Rota will likely wait for greater demand based on need. It is difficult to project at this time when plans for parks on Tinian and Rota will require funding for interpretive development. However, it is likely that a signiticant increase in visitor use will be the key to improvements in these parks.

This plan will be updated as circumstances dictate. Review and updating will be the responsibility of the Costal Resources Management Office in cooperation with the Marine Parks Advisory Board.

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APPENDICES

A. Legislation

1. An Act proclaiming Marine Parks in the Commonwealth of the Northern Marianas.

B. Memorandum of Understanding

C. Rules and Regulations

Appendix A

AN ACT PROCLAIMING MARINE PARKS IN THE COMMONWEALTH OF THE NORTHERN MARIANAS

Date _____

Establishing Marine Parks in the CNMI of the United States of America.

Whereas: The Commonwealth of the Northern Marianas (CNMI) is situated in the Western Pacific between Latitudes 15° 05' 00" N and 15° 17' 30" N and Longitude 145° 40' 30" E and 145° 50' 30" E. These islands were ceded to the United States Government by Japan in a mandate at the end of WWII.

Whereas: All property acquired by the United States at the end of WWII by mandate not reserved by the United States for public purposes was placed under control of the Marianas Public Land Corporation with legal title remaining with the CNMI Government.

Whereas: Not all offshore exposed and submerged lands have been reserved by the CNMI or United States Governments for specific purposes.

Whereas: Numerous offshore areas within the CNMI and its adjoining shores, rocks and undersea coral reef formations possess some of the finest marine habitats in the Western Pacific.

Whereas: These lands and their related features are of great scientific interest and educational value to students of the sea, tourists and local residents.

Whereas: This unique natural area and the rare marine life which are dependent upon it are subject to constant threat of commercial exploitation and destruction by natural and unnatural elements.

Whereas: The Coastal Resources Managment Office impressed by the caliber and scientific importance of offshore lands and coral reefs within the CNMI has urged their prompt protection to prevent further degredation.

Whereas: The Governor of the CNMI under authority vested in him by the Legislature wishes to protect the following marine habitats as marine parks in the CNMI for the protection of natural historic and cultural resources for scientific resources and other purposes so all people may enjoy them forever.

1. Saipan: Managaha Island Marine Park
   Lat. 15° 14' 0" N and 15° 14' 45" N
   Long. 145° 41' 30" E and 145° 42' 30" E
2. Rota: Sasanhaya Bay Marine Park
   Lat. 14° o6' 40" N and 14° 07' 35" N
   Long. 145° 09' 30" E and 145° 09' 58" E
3. Tinian: Taga Beach Marine Park
   Lat. 14° 56' 43" N and 14° 57' 33" N
   Long. 145° 37' 28" E and 145° 37' 28" E

Whereas: It is in the public interest to preserve these areas of outstanding scientific, aesthetic and educational importance for the benefit and enjoyment of all people.

Now, therefore, I _____, Govenor of the CNMI under and by virtue of the authority vested in me do proclaim that, subject to valid existing rights, there is hereby reserved and set apart each of the previously mentioned sites as Marine Parks within the CNMI.

Warning is expressly given to all unauthorized persons not to appropriate, injure, destroy, deface, or remove any feature of these Marine Parks and not to locate or settle upon any of the lands reserved for these parks by this Act.

The Coastal Resources Management Office through the Marine Parks Advisory Board shall oversea the supervision, management and control of these Marine Parks.

In withness whereof I have unto set my hand and caused the seal of the CNMI to be affixed.

Done at the village of _____ this _____ day of _____ in the year of our Lord _____.

_____
Governor

Appendix B

MEMORANDUM OF UNDERSTANDING

To: Directors
Department of Natural Resources
Division of Fish and Wildlife
Division of Parks and Recreation
Department of Public Safety
Historic Preservation Office
Marianas Visitors Bureau
CNMI Legislature

From: Director
Coastal Resources Management Office

Subject: Establishment of Marine Parks Advisory Board

It is understood in this memorandum that an Advisory Board is established for the proper managment of marine parks in the CNMI. The board will consist of one representative from each of the seven (7) aformentioned agencies and chaired by a non-voting representative from the CRMO, voting only to break a tie. Appointments to the Advisory Board will be for one (1) year except for the CRMO and Legislature which are appointed for two (2) years for the sake of Board continuity.

Meetings will be held monthly on a regular schedule established by the CRMO. A quorum of four (4) representatives excluding the CRMO constitute a legal meeting. Special meetings can be called at the descretion of any board member by contacting the CRMO. All representative agencies will assume responsibilities vested in them by majority vote of the board.

Signed _____ Date _____
Director CRMO

Signed _____ Date _____
Director DNR

Signed _____ Date _____
Director F&W

Signed _____ Date _____
Director P&R

Signed _____ Date _____
Director Public Safety

Signed _____ Date _____
Director HPO

Signed _____ Date _____
Director MVB

Signed _____ Date _____
Legislature

Appendix C

CNMI MARINE PARKS RULES AND REGULATIONS

Sections

I. Authority

These marine parks have been designated by the Governor of the CNMI pursuant to the authority of the Legislation Proclaiming Marine Parks in the CNMI. The following rules and regulations are also issued pursuant to the authority of this Legislation.

II. Purpose

The purpose of designating these Marine Parks is to protect and preserve the coral reef ecosystem and other natural resources of selected waters in the CNMI and to ensure the continued availability of the area for public educational purposes and as an ecological research and recreational resource. These areas support a particularly rich and diverse marine biota. The areas are accessible to and are widely used by private boaters, commercial boat operators, recreational divers, fishermen, tourists and local residents. Consequently, both present and potential levels of use may result in harm to these areas in the absence of long-term planning, research, monitoring and protection.

III. Boundaries

The Marine Parks consist of areas of various sizes as described below. The precise boundaries are:

MARINE PARK	LATITUDE	LONGITUDE
Saipan Managaha Island Marine Park	15° 14' 0" N 15° 14' 45" N	145° 41' 30" E 145° 42' 50" E
Rota Sasahaya Bay Marine Park	14° 06' 40" N 14° 07' 35" N	145° 09' 30" E 145° 09' 58" E
Tinian Taga Beach Marine Park	14° 56' 43" N 14° 57' 33" N	145° 37' 28" E 145° 37' 58" E

IV. Definitions

A. Advisory Board Marine Parks is chaired by the CRMO with representatives from the Department of Natural Resources, Division of Fish and Wildlife and Parks and Recreation, Marianas Visitors Bureau, Department of Public Safety, Historic Preservation Office and CNMI Legislature.

B. "Director" means the Director of the Coastal Resources Management Office.

C. "Chief" means Chief Division of Fish and Wildlife, (DNR).

D. "Person" means any private individual, partnership, corporation, or other entity; or any officer, employee, agent, department, agency or instrumentality of the Federal government, or any local unit of the government.

V. Activities Permitted

All activities except those specifically prohibited herein may be carried on in designated Marine Parks subject to all prohibitions, restrictions and conditions imposed by any other authority.

VI. Activities Prohibited

A. Unless permitted by the Director through the Advisory Board or as may be necessary for the national defense or to respond to an emergency threatening life, property or the environment, the following activities are prohibited within Marine Parks. All prohibitions must be applied consistently with international law.

1. Removing or damaging distinctive natural features.

a. No person shall break, cut or similarly damage or take any coral or marine animal except as an accidental result of anchoring. Sand anchoring is encouraged but not required. Divers are prohibited from handling coral or standing on coral formations.

b. No person shall take any tropical fish or marine animal from those zones designated (A) Outstanding Natural Features.

c. There shall be a rebuttable presumption that any items listed in this paragraph found in the possession of a person within Marine Parks have been collected or removed from within the Marine Park.

2. Operation of watercraft. All watercraft shall be operated in accordance with Federal Coast Guard rules and regulations that would apply if there were no Marine Park. The following constraints shall also be imposed.

a. No person shall place any anchor on coral within (A) zones of the Reef of the Marine Park nor allow any chain or rope to touch the Reef in a way that injures any coral in these areas. When anchoring dive boats, the first diver down will inspect the anchor to ensure that it is placed away from corals in such a way so as not to damage them. No further diving is permitted until the anchor is placed in accordance with these requirements. Exceptions are permitted where there is danger of drifting. Anchoring in other zones is permitted on coral reefs.

b. Watercraft must use mooring buoys, stations or anchoring areas when such facilities and areas have been designated and are available.

c. Watercraft shall not be operated in such a manner as to strike or otherwise cause damage to the natural features of the Marine Park.

d. All watercraft from which diving operations are being conducted shall fly in a conspicuous manner, the red and white "divers down" flag.

3. Using harmful fishing methods.

a. No person shall use or place wire fish or lobster traps within any zone of designated Marine Parks.

b. No person shall use pole spears, Hawaiian slings, rubber-powered spearguns, pneumatic and spring loaded spearguns or similar devices known as spearguns within zones designated (A) of Marine Parks and only for subsistence purposes in other zones.

c. No person shall use poisons, electric charges, explosives or similar methods whatsoever within any zones of the Marine Park.

4. Removing or damaging distinctive historical or cultural resources.

a. No person shall remove, damage or tamper with any historical or cultural resources, including cargo pertaining to submerged wrecks.

5. Discharges.

a. No person shall deposit or discharge any materials or substances of any kind within Marine Parks.

6. Markers.

a. No person shall mark, deface or damage in any way or displace, remove or tamper with any signs, notices, or placards, whether temporary or permanent, monuments, stakes, posts or other boundary markers installed within Marine Parks.

b. The prohibitions in this section are not based on any claim of territoriality and will be applied to foreign persons and vessels in accordance with principles of international law, including treaties, conventions and other international agreements to which the United States is signatory.

VII. Penalties

A civil penalty of not more than $100 will be levied against any person for each violation of any regulation and further authorizes a proceeding in rem against any vessel used in violation of any such regulation.

VIII. Permit Procedures

A. Any person in possession of a valid permit issued by the Director in accordance with this section may conduct the specific activity in the Marine Park including any activity specifically prohibited if such activity is:

1. Scientific research related

2. for educational purposes

3. for salvage or recovery operations.

B. Permit applications shall be addressed to the Marine Parks Advisory Board. ATTN: Director CRMO, CNMI, 96950. An application shall include a description of all activities proposed, the equipment, methods, and personnel (describing relevant experience) and a timetable for completion of the proposed activity. Copies of all other required licenses or permits shall be attached.

C. When considering whether to grant a permit the Director shall evaluate such matters in terms of:

1. Professional and financial responsibility of the applicant.

2. Appropriateness of the methods envisioned to accomplish the purpose(s) of the activity.

3. Extent to which the conduct of any permitted activity may diminish or enhance the value of the Marine Park as a source of recreational, educational or scientific value.

4. End value of the activity.

5. Other matters as deemed appropriate.

D. In considering any application submitted pursuant to this section, the Director shall seek the views of the Advisory Board and may seek and consider the views of any person or entity, within or outside of the CNMI government and may hold a public hearing as deemed appropriate.

E. The Director may not at his/her own discretion, grant a permit which has been applied for pursuant to this section, in whole or in part without the majority vote of the Advisory Board. The Director may require the submission of one or more reports regarding status

or progress of such activity. Any information obtained shall be made available to the public.

F. Any permit granted may not be transferred without written consent of the Advisory Board.

G. The Director through the Advisory Board may amend, suspend or revoke a permit granted pursuant to this section, in whole or in part, temporarily or indefinitely, if the permit holder has acted in violation of the terms of the permit or of the applicable regulations. Any such action shall be set forth in writing to the holder, and shall set forth the reason(s) for the action taken. The holder may appeal the action to the Advisory Board.

IX. Other Permits

All permits, licenses and other authorizations issued pursuant to any other authority remain valid. Any person may request an appeal hearing from the Director if an activity is prohibited by these regulations.

X. Appeals

A. Any person (the appellant) may appeal the granting; denial or conditioning of any permit to the Advisory Board through the Director. In order to be considered such appeal shall be in writing and shall state previous action(s) by the Board. The appellant may request a formal hearing before the Advisory Board on the appeal.

B. Upon receipt of an appeal authorized by this section, the Director shall notify the applicant, if other than the appellant, and may request such additional information and in such form as will allow action upon the appeal. Upon receipt of sufficient information, the Director through the Advisory Board shall decide the appeal based upon information relative to the application on file with the Advisory Board and any additional information. A summary record shall be kept of any such hearing. The Director shall notify all interested persons of the decision, and the reason(s) in writing within 30 days unless additional time is needed for a hearing.

C. If a hearing is requested or if the Director determines one is appropriate, he/she may grant an informal hearing before the Advisory Board after first giving notice of the time, place and subject matter. Such hearing shall normally be held no later than 15 days following publication of the notice. The appellant, the applicant (if different) and, at the discretion of the Advisory Board, other interested persons may appear personally or by counsel at the hearing and submit material and present such arguments determined appropriate.

D. The Director will adopt the Advisory Board's recommended decision, in whole. The Advisory Boards action shall constitute final action on the matter.

E. Any time limit prescribed in this section may be extended for a period not to exceed 30 days by the Director for good cause, either upon his/her own motion or upon written request from the Appellant or Applicant stating the reason(s) therefor.