

CONSERVATION ON SMALL ISLANDS

the human dimension

THE earth is a small island of life in the emptiness of space, and man is coming to learn that he must live within the limits of our planet. On a much smaller scale, the populations of small islands in the sea must live within the limits of their island.

An island system is not only the land and coastal waters, but also the natural communities of plants and animals that found their way there and evolved to suit its particular conditions.

Ever since Darwin immortalised the Galapagos, islands have often been celebrated for their unique flora and fauna. Such species richness often goes with small population sites and high endemism on all but the smallest islands. Typical island species and ecosystems have adapted to their isolation, so are fragile and easily upset by disturbances or the introduction of alien species. Many of the world's recent extinctions have happened on islands, and the proportion of rare and endangered species relative to their land area or human population may be a hundred times higher on islands than in most continental areas.

Man, too, has had to adapt to the small island environment, where at the same time he both faces and has his back to the sea. There is no escape on an island and no new frontier. The island cultures of the South Pacific, for example, are based on consensus, cooperation and sharing within extended families, with a complex social structure in which roles are clearly defined to diminish conflicts. When populations were small and resources abundant, there was no need to worry about the next day's food. Anyone could take what they needed, and the rest would still be there for tomorrow. Food storage was often not possible, so there was no incentive to hoard.

However, where resources were limited, or vulnerable to natural disasters such as cyclones, conservation measures were necessary for survival and could be quite elaborate. Human use was spread over a wide range of existing resources, resources were exploited in moderation, and some resources were reserved for times of unfavourable conditions or shortages.

An islander's attachment to his terrain is very strong, since land is so limited. In some Melanesian societies, the land is regarded as the origin of all; the individual is not seen as separate from his family, his ancestors and the land from which they sprang. The ties to the land and coastal waters are as much spiritual as material. 'Ownership' (if such a western word is appropriate) is generally collective, and individuals may have complex rights to the exclusive or partial use of different areas or resources. A local animal or fish may be the family totem, protected because of its sacred associations. People live close to their island and its resources and understand them intimately.

Traditional conservation was closely linked to customary beliefs and magic. A mountain, forest or islet might be sacred or



The proportion of rare and endangered species on small islands can be up to a hundred times higher than in most continental areas.

Photo: J. Thorsell

Arthur Lyon Dahl

taboo, with entry reserved to certain individuals or circumstances. Such protected areas functioned as strict nature reserves. Other taboos might be placed temporarily during a particular season, or upon the death of the owner, or to set aside resources for a ceremonial occasion. Such temporary protection allowed resources to build up.

Magic touch

Religion or magic may have been used to justify every conservation-related act, continuing as a rite long after the original sense was lost. In the Solomon Islands, for example, fishing for certain shells used to make shell money was controlled by the pagan priests, who placed taboos for three to five years on different parts of the lagoon — thus allowing the shells to grow to maturity. However, when the villagers converted to new religions, one priest kept up the taboo for more than 30 years, waiting to be given enough sacrificial pigs for the ceremony necessary to lift it.

The priests or elders were the experts or 'scientists' of their day, advising on the use and protection of resources on the basis of knowledge accumulated over generations. The processes of observation and deduction were much the same as in modern science; only the frame of reference for interpreting the results was different.

These cultural characteristics of island societies are strongest among indigenous island people, but even some later immigrant populations have taken on some of the traits of the island way of life.

Customary conservation measures were closely associated with and often enforced through the traditional religion. However, they have tended to be lost under the impact of missionaries, colonial administrators and European ways. Even the extensive traditional knowledge of island natural history is rapidly disappearing as children go to school rather than learning from their elders.

Transition

Today, island societies are in a state of transition as their isolation breaks down and outside influences, new values and western laws or administrative systems are introduced. They share many of the problems of the Third World; rapid population growth and increasing pressure on resources, both for subsistence and economic development. The islands' small size and isolation makes these problems worse by presenting difficult choices between a simple lifestyle with self-sufficiency or dependence with greater material benefits.

Outsiders may now come and take the resources formerly left for tomorrow, and self-interest and greed are starting to replace cooperation and sharing. New technologies make the accumulation of wealth possible, and increase the likelihood of destructive development through easy land clearance and more efficient hunting and fishing techniques. The traditional conservation ethic of taking just what is needed for today and leaving the rest for tomorrow has largely been lost.

In addition, the strong attachment to and collective ownership of the land makes modern conservation measures such as the creation of parks and reserves more dif-

ficult. Where land is so limited, no one wants to lose any possible resource, and land use controls or zoning are strongly resisted. Even taking land for essential public purposes like roads can be almost impossible. Exposure to the outside world has created desire for development and a high material standard of living. But this desire cannot be met with limited island resources. The result is heavy pressure the island system cannot resist.

Natural areas are rapidly diminishing, and on some islands they are already gone. There is confrontation between human needs and desires on the one hand, and conservation interests on the other. The confrontation seems more acute because the islands are so small and their natural values so unique and irreplaceable.

The conservation of fragile island ecosystems requires scientific understanding and trained managers. Yet, tiny microstates of a few thousand or a few tens of thousands of people cannot afford such specialisation. Many island countries have no scientists and perhaps only one or two officers responsible for all aspects of conservation and environmental protection, among other duties. It is hard for such a voice to be heard in the press of competing interests.

These human dimensions require different approaches to conservation on small islands. The protection of natural areas or species will only be possible with the understanding and support of the population. Enforcement is almost impossible when everyone is a friend or part of the family, but peer pressure can be even more effective if the majority and particularly the traditional leaders support protective measures.



Conservation on small islands has to start with education which teaches people to appreciate the island heritage and to understand its limits. Since conservation was part of many traditional island societies, educational programmes can build on that foundation, showing that conservation is not new, but an extension of traditional practices. Islanders will always be in a better position to manage their own resources than any number of outsiders. Conservation education can give them the understanding to do the job well.

More and more islands are approaching the limits of their carrying capacity for human populations. Without permanent outside subsidies to bolster their



economies, inhabitants face the choice of exhausting every island resource, or halting the destructive over-exploitation of their

island while it is still possible to conserve essential ecosystems and genetic resources for the future. They have before them the tragic example of Easter Island, where the total destruction of the forest and the deterioration of the soils apparently led to social disintegration and the collapse of the population during prehistory.

The challenge is great, but approaches sometimes work on small islands that would seem impractical anywhere else. If island societies can apply the principles of the *World Conservation Strategy* and learn to live within their resource limits, they will set an example for all humanity on our small planet. □

Arthur Lyon Dahl has lived and worked in the South Pacific region for many years. An expert on Pacific island ecosystems and cultures, he steered the creation and adoption of the South Pacific Action Plan under the UNEP Regional Seas Programme.

Dugong hunting in the Great Barrier Reef Marine Park

Richard Kenchington

THE Great Barrier Reef is the largest system of coral reefs in the world. It runs for about 2000 km from its landward start off the coast of Queensland in northeastern Australia, and supports a spectacular diversity of life forms, including 1500 species of fish and 400 species of hard and soft corals. Among the rarest and most intriguing creatures of the region is the dugong, *Dugong dugon*, the world's only strictly herbivorous marine mammal, listed in the IUCN Mammal Red Data Book as a species in danger of extinction.

Many dugongs are found in the Great Barrier Reef Marine Park, the largest marine protected area in the world, embracing almost the whole of the Great Barrier Reef Region. It is there that many of the problems involving conservation of the species and rational use by man have come to a head.

The Great Barrier Reef Marine Park Authority manages the park, the largest of its kind in the world. Its goal is to provide for protection, wise use, appreciation and enjoyment of the Reef in perpetuity. It tackles this task by minimising regulation of human activity, by maximising the involvement of the community in manage-

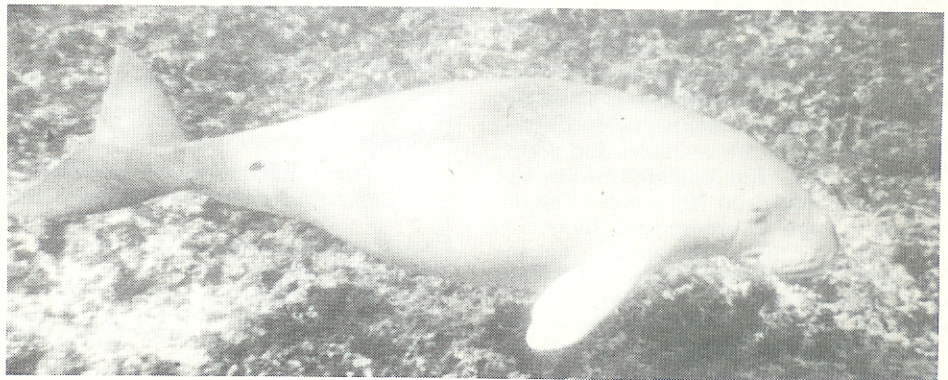
ment of the Marine Park and by nurturing community understanding and acceptance of necessary restraints.

Reasonable use

Day-to-day management of the Region is undertaken by the Queensland National Parks and Wildlife Service with plans and guidelines prepared by the Authority. The Authority's main management tool is the preparation and implementation of zoning plans intended to separate potentially conflicting uses, while still allowing all reasonable activities. The overall care of the Reef is always the prime consideration.

In November 1983 the Zoning Plan for the Cairns and Cormorant Pass Sections of the Great Barrier Reef Marine Park came into effect. Among other things, it provides that traditional hunting of dugong may only be continued in the Marine Park subject

Continued, over



Dugong dugon — the world's only strictly herbivorous marine mammal.

Photo: WWF/Anderson