

As a start maps of North Male', South Male', and Ari Atoll are being distributed to concerned groups to mark where they do not wish sand and coral mining to take place. The completed maps should be returned to Ministry of Planning and Environment, Environmental Research Unit, Tel. 324861, Fax. 327351 by January 01st 1992. (from where further copies can be obtained).

These maps will be used to assist in designating sand and coral mining areas in the 3 Atolls. Maps showing proposed areas for coral and sand mining will be distributed by March 01st. Any objections should be notified to MPE by April 01st.

The scheme in which mining is only allowed in certain designated areas should be implemented by June 01st 1992.

**SPECIAL SHORT TRAINING  
PROGRAMMES IN COASTAL  
MANAGEMENT  
(UNIVERSITY OF RHODE ISLAND)**

We have been asked to let you know that the Coastal Resources Center at the University of Rhode Island, in the USA, will be sponsoring two training programs on coastal resources management in 1992. The first program will be aimed at a regional audience and will be at Songkla University in Thailand from March 23rd to April 03rd 1992. The second program will be aimed at a global audience and will be at the University of Rhode Island between June 15th and July 10th 1992. Contact the Training Co-ordinator, Coastal Resources Centre. The University of Rhode Island Narragansett Bay Campus, Narragansett RI 02882 (Fax. 401-789-4670) for more information.

**AND REMEMBER!  
BY JAN 01st 1992**

Please return your completed Maps showing where  
you do not wish Sand and Coral mining to occur in

**North Male', South Male' and Ari Atoll**

and

**HELP TO KEEP THE MALDIVES BEAUTIFUL!**

REG.No:354

*For further communications contact:-*

**MARINE RESEARCH SECTION  
MINISTRY OF FISHERIES AND AGRICULTURE,  
Male', Maldives.**

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**Please give a Copy to  
your Diving School!**

NO: 15  
AUG - OCT 1991

**WORKSHOP  
ISSUE**

**COT  
NEWS LETTER**



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**MARINE RESEARCH SECTION  
MINISTRY OF FISHERIES AND AGRICULTURE  
The Republic of Maldives**

## EDITORIAL

### MANAGING THE MARINE ENVIRONMENT WORKSHOP



For the past three years Marine Research Section, of the Ministry of Fisheries and Agriculture, with the administrative support of the Ministry of Tourism, has arranged a workshop on a particular marine environmental theme. Each workshop aims to present research findings and generate discussion about the marine environment.

#### CROWN OF THORNS STARFISH

In 1989 the theme was "crown of thorns starfish". Efforts were made to encourage resorts to develop a co-operative strategy to deal with plagues of these starfish. Unfortunately Resorts that did not have COT plagues saw no reason to help those that did. Resorts that have had to deal with plagues of these starfish have been unable to cope on their own and their reefs are now virtually dead.

#### ENVIRONMENTAL HEALTH AND DIVER SAFETY

In 1990 the theme was "Environmental Health and Diver Safety". The workshop aimed to cover the issue of reef damage by divers and how this could be minimised. Attendance was poor but it can be argued that the workshop partly catalysed efforts by MATI (the Maldives

Association for Tourism Industries) to look into the whole issue of diving safety standards. In August these efforts lead to the formation of a committee to set the terms of reference for setting such standards.

#### MANAGING THE MARINE ENVIRONMENT

In October 1991 the workshop was entitled "Managing the Marine Environment". This workshop was also poorly attended. Despite the poor attendance three recommendations were made and unanimously adopted. The full text of the recommendations is given on page 2.

#### TURTLE MORATORIUM

The first recommendation was to ask Government for an immediate moratorium on exploitation of turtles. The second asked for an immediate moratorium on exploitation of black coral. The third asked that a legal framework be generated to allow for designation of particular marine areas where certain things would not be allowed. For example this framework would enable particular mooring buoys to be designated as 'no' fishing sites and allow particular areas to be designated for other special uses such as nature protection or recreation.

#### OTHER SUGGESTIONS

Other helpful ideas came from the floor. Rainer suggested that underwater national parks should be designated and that MATI should establish a system for grading resorts according to how green they were. Ahamed Mujuthaba suggested that the confusion over which Ministry has overall responsibility for the environment should be clarified by designating one Ministry (*the Ministry has already been designated and is MPE - Ed*). Nashid suggested that there should be a national conference on the environment to include representatives from the atolls as well as Male' and the tourism sector (*there are plans for such a workshop during 1992 which is the "SAARC year of the environment" - Ed*). Amin suggested that plastic bags should not be im-

## 1991 WORKSHOP RECOMMENDATIONS

### TURTLE MORATORIUM

The participants of the workshop on "Managing the Marine Environment" recognising:-

1. That turtles in Maldives are in decline and at risk of local extinction...
2. That the financial and social benefits from a total moratorium and subsequent sustainable management exceed those from uncontrolled exploitation...
3. That there are national, regional and international responsibilities to maintain biodiversity...

Unanimously recommend to the Government that it implement an immediate\* and total moratorium on exploitation of turtles and turtle eggs of all species until such time as a management plan can be developed to exploit turtles sustainably.

\* By SAARC year of the Environment 1992  
By the Earth Summit 1992.

### BLACK CORAL MORATORIUM

The participants of the workshop on "Managing the Marine Environment" recognising:-

1. That black coral in Maldives is in decline and at risk of local extinction...
2. That the financial and social benefits from a total moratorium and subsequent sustainable management exceed those from uncontrolled exploitation...
3. That there are national, regional and international responsibilities to maintain biodiversity...

Unanimously recommend to the Government that it implement an immediate\* and total moratorium on exploitation of black coral until such time as the resource can be assessed and a management plan can be developed to exploit black coral sustainably.

\* By SAARC year of the Environment 1992  
By the Earth Summit 1992.

### DESIGNATION OF PROTECTED AREAS

The participants of the workshop on "Managing the marine environment" unanimously recommend to Government that it develop an institutional and legal framework for designating particular geographically located areas for sustainable uses and for excluding other conflicting used for the long term benefit of the country.

harmful substances being imported into the country. Youssuf suggested that there should be a ban on coral and sand mining and that duties on imported sand and aggregated should be removed (*efforts are being made to control sand and coral mining in the country and there has already been a partial reduction in import duty on imported sand and aggregate - Ed*). Finally Nooradean suggested that there should be some evaluation of the steps taken by various government departments in managing the marine environment over the last few years.

## RUBBISH IN THE SEA

Observers at a recent Tourism meeting were shocked that a so-called expert should suggest that it only took a few months for plastic bags to break-up in the marine environment. A news item in the *New Scientist* magazine (2nd February 1991) reports on some studies by the Hellenic Marine Environment Protection Association. The item reveals that "a humble bus ticket takes two to four weeks to decompose in seawater... a wool sock, meanwhile takes a year to decompose.... a painted piece of wood... takes 13 years to decompose, a tin can takes 100 years, an aluminium can (which is what most tin cans are) takes 300 years, and a plastic bottle, 450 years". From this it would appear extremely likely that a plastic bag will take several years to break-up.

The issue of waste disposal is a serious one. The argument from the tourism sector is that Male' should clean up its 'waste' act before the Resort operators and not the other way round. Government does not accept this strategy and points out, not only that they are making efforts to improve waste disposal on Male', but also that comparisons between the tourism and local sector are not appropriate. For example would the tourism sector wait to install toilets before all local islands have them?

## NEWS ABOUT COT

Ihuru continues to take COT out of the sea. They removed 152 COT from the house reef in August and September. Halim reports lots of

COT on a ring reef between Ihuru and Nakatchafushi. A site visit by staff from MRS failed to find the plague. In the meantime there is little evidence that reefs are starting to recover from recent COT plagues in the NW of north Male' atoll.

New Scientist of 3rd August 1991 reports that Crown of thorns starfish have been "**observed spawning en masse for the first time**". New Scientist also reports that researchers are testing whether the mass spawnings are cued by release of hormones into the water. If such mass spawnings do occur it seems that collecting starfish from plague areas could be justified even if those areas are killed by the starfish. Collecting the mass aggregations of starfish may limit opportunity for mass spawning which may cause a plague by the next generation in another reef area.

## TURTLES

The recommendation of a moratorium on turtle exploitation by the workshop should be considered in the context of present Maldives Government regulations and trends in other countries. Some of this information is presented below.

Present Maldivian Government laws on turtles are that it is forbidden to catch green turtles with a shell less than 2 feet six inches long and hawksbills with a shell less than 2 feet long (Law 24/78). It is forbidden to export unworked hawksbill turtle shell (Law 31/79).

The "Traffic" bulletin disseminates information on the use of wild animal and plant resources. It is funded by WWF (the World-wide Fund for Nature) and IUCN (the International Union for the Conservation of Nature). The Spring/Summer issue (Vol. 12 Nos. 1/2) reports some good news for turtles.

## FIJI

The Fijian Cabinet have introduced stringent new regulations to manage turtles including the prohibition of export of raw turtle (*Cheloniidae* shell), the selling of turtles during certain months, and the selling of turtle

eggs or under-sized turtles at anytime. Finally the Cabinet has endorsed research working towards a total ban on exploitation of turtles (other than ceremonial indigenous use) and means for more effective protection of nesting beaches and the breeding population.

## SEYCHELLES

The Seychelles Ministry of Agriculture and Fisheries has banned the catching of Green (*Chelonia mydas*) and Hawksbill (*Eretmochelys imbricata*) turtles until the permit system is revised. Traffic reports that this is because the number of hawksbills is declining throughout the archipelago and the Green turtle is virtually extinct around certain islands.

## SOLOMON ISLANDS

With effect from August 1990, the exploitation of turtles has been banned for a period of five years.

## JAPAN

Japan (Ministry of International Trade and Industry (Japan) press release of 17th May 1991) has announced its commitment to end all trade in the shell of hawksbill turtle *Eretmochelys imbricata* on 31 December 1992 and will drop its reservations on the species in July 1994. From May 1991 to December 1992 a maximum 7.5 tonnes of turtle shell will be allowed into Japan provided that the imports are accompanied by a legally-issued export permit.

The IUCN report that the Maldives are currently one of the most important suppliers of hawksbill shell to Japan. In 1989 the country was third only to Cuba and the Solomon Islands in the volume it was reported as supplying. In 1989 IUCN reports that the total recorded imports of unworked hawksbill turtle shells to Japan were 25,513 kg. Maldives contributed 2,718 kg (10%). Since only 7,500 kg will be allowed in after May 1991 this may mean a considerable drop in demand for unworked Maldives hawksbill shell. Unfortun-

nately the opposite may happen. Unworked hawksbill shell is illegally exported from Maldives (Law 31/79) and the ban in Solomon Islands may actually create extra demand.

## A RESORT MANAGERS POINT OF VIEW

### MANAGING THE MARINE ENVIRONMENT WORKSHOP



Unfortunately we ran out of time at the workshop and were unable to give Ahamed Mujuthaba of Rannalhi Resort the chance to present his paper entitled "**Managing the Marine Environment: A resort managers point of view**". We present his paper now.

"Some of you may be of the opinion that Resort Managers are sandwiched between the Resort owner and the client. Ministry of Tourism and the Maldives Association for Tourism Industry (MATT) probably have a different perspective.

As a Resort Manager my view of the problems we are facing may provide a third perspective. For me, a resort island, its beaches, and the reefs surrounding it are not a place for experiments - not a scientific underwater laboratory. For me these natural features provide for a way of life and a reasonable and healthy quality of life for a number of people. I recognise that this way of life is directly related to the marine environment... to the beaches, the reefs, the lagoons, the underwater corals, and the sand banks. I... none of us... would want to see these

beautiful islands and their marine environment destroyed or compromised. The white sandy beaches, the clear blue water, the multi-coloured corals and their inhabitants, cannot be treated just as "goods for sale" and they should not be destroyed or damaged through ignorance, negligence, or for short-term financial gain. The tourist islands and their marine environments must outlive the tourism industry. As Resort Managers we are responsible and history will hold us accountable.

So can we make sure that the present and future resort islands outlive... in their magnificence and beauty... if not in their virginity... the tourism industry?

The industry has been utilising these resources for almost 20 years. From day one of tourism we have been constantly attempting to get the maximum benefit out of the tourist resort islands - a key word used in this connection is "Development". Development has so far meant expansion and exploitation. Islands comfortable with an optimum of 100 persons are "developed" to accommodate 200 people. The impact of the additional people is felt on the environment - beaches, house reefs, diving gardens... and fishing fields.

### BETRAYAL

Such impact is also felt in other ways. As an example I'll tell you of the experience of a young child just over two years of age. One afternoon I was coming out of the office. He came to me. I could see the excitement and the thrill in his face. He said "turtle, TURTLE" pointing to the beach. I went out to the beach. Sure there was a turtle... with the shell removed, probably to make souvenirs for sale to tourists. The dive instructor together with some of the divers tried to extend its life.. to let it live again... finally we decided to contact Marine Research Section. I was instructed to kill the turtle... that it was "the best you can do". We killed it. We buried it. The child was observant. He knew what we did. He could not understand why. The first real turtle he saw in his life was exposed to human greed and selfishness. Will he see another turtle? Do we have any responsibility to the turtle or to the child? This can be an everyday occurrence though I hope not. This child has as

much right as you and I to see turtles. Our generation has seen turtles. If our generation destroys the turtle then we have betrayed our responsibility to provide our children with the best possible future.

Yes we are faced with the very real issue of environmental deterioration. The tourist resorts - like other islands - inhabited or deserted - are feeling the forces of erosion, the effects of mining sand and aggregate, and the obnoxious sight of bleached and dying corals. The children of today are being subjected to the consequences and example of human greed and to the lack of the necessary priorities to reverse this self indulgence.

Some people are concerned at this. They are not only concerned at the vanishing beach that does not return, at the lost attractiveness of diving spots, at the discolouration of the beautiful and colourful house reef corals, at the gradual disappearance of the groupers from the fishing and diving sites, they are also concerned for the people who are paying to enjoy these marine resources. These people expect the marine environment to be protected and they feel betrayed.

### HOSPITALITY

So what do we care of betrayal? We should care about these feelings because it is in our cultural heritage to be hospitable and friendly... to welcome the guest to our island and our home... and Rannalhi has now been my home for ten years. I see horror in our future if we lose this most tremendous asset of hospitality towards the guest and we are losing it even as we financially enrich ourselves. That the environment is under threat is in no doubt. That we are failing to do anything about it is a betrayal of our children and of our hospitality.

### THE TOURISM INDUSTRY

The tourism industry in this country is in a better position to deal with the problems facing the marine environment than any other. The industry has the incentive and it has the assets. It also has a responsibility to set the example for development for local islands. I also feel

that the tourism industry is more aware of the problems facing the marine environment than any other industry. I feel that the industry can, and should, co-operate with Marine Research Section when they make recommendations. The work they do on coral and sand mining, the status of reef dependent stocks, crown-of-thorns, coral bleaching, and storm damage is all linked to our environmental needs in the tourism sector.

However, the solutions to environmental problems are not simple. We are faced with several dilemmas and contradictions that seem to have no resolution.

### USE OF CORAL AND SAND

Not all Resorts can afford to use imported sand and aggregate for construction, or reconstruction. Sand and aggregate miners and their families have benefited enormously from their industry over the last two decades and the Tourist Resorts have been amongst their best customers. Conversely a beautiful dive on an unmined reef satisfies the enthusiastic diver and an hour or so of relaxed and slow passage over a healthy house reef thrills the snorkeller. Yet even these simple pursuits can break corals and cause damage to the reef.

### FISHING VERSUS DIVING

Another example... fish is served frequently and in abundance in all Resorts. Guests at our Resort love to barbecue the fish they have caught with their own hands. The barbecue, shared with fellow night fishing holidaymakers on the beach, is an unforgettably enriching experience for many. Yet the huge beautiful red snappers that have been eaten with such enjoyment are no longer on the reef for the diver to watch and photograph.

After nearly two decades of tourism we are being asked to account for our failure to develop tourism in an environmentally friendly fashion and to move positively to improve the situation for the benefit of our country, our children, our guests, and our industry. I don't know what we can do about certain of our environmental problems. I am a Resort Man-

ager and not an environmental expert! However, there are some things that can, and should, be done. We should encourage, and support, Government efforts to identify, and manage, special areas where coral and sand mining is allowed. Reef fishing grounds can also be allocated. The individual resorts have the desire and experience to do this. Garbage disposal, affecting hundreds of meters of the house reef can be controlled.

Though the Tourism Ministry has done much to regulate and streamline the growth of the tourism industry solid coral jetties and groynes are still being built on some Resort Islands and others do not open-up the jetties they built once upon a time. Empty cans, bottles of sun cream, and other rubbish, can be seen floating for twenty or more miles finding their resting place on a beach or settle down amongst the corals and the fish. 'Picnic-makers' add to the silent atmosphere of deserted islands their cans, the bottles and their plastic and paper wrappings with the message "I have been here". Sure we know. Do they need to advertise it? People just seem to get away with these things.

We are told that the highest consideration is being given today to the "environment". Let us hope that it is more than just talk and that we are given the advice, and set the example, that we should follow. I am ready for the sake of my children, my country, my guests, and my industry. However, I am not a lawmaker, or a policeman, or an environmental expert. I am a Resort Manager and my job is to manage a Resort... nevertheless for the reasons I have given above I am ready, I am willing, I am hoping, and I am waiting, for positive action to prevent further deterioration of our beautiful environment".

### CORAL AND SAND MINING

Indiscriminate mining of coral and sand for construction work can lead to beach erosion, destroy the beauty of the underwater world, and damage fisheries. It is not possible to ban sand and coral mining completely because all other construction materials have to be imported and are costly. Some mining has to take place and should only be allowed where it will cause the minimum impact.