

SESSION V111: DEVELOPMENT OF GUIDELINES TO ASSIST THE
AUTHORITY IN DECLARING AND ZONING A
MARINE PARK IN THE AREA

DISCUSSION SESSION VII - DEVELOPMENT OF GUIDELINES

TO ASSIST THE AUTHORITY IN DECLARING AND ZONING

A MARINE PARK IN THE AREA

CHAIRMAN: MR. H.J. HIGGS

Chairman: We come to the final session now, the development of guidelines to assist the Authority in preparing and zoning of the Marine Park. From the viewpoint of members of the Authority this is of vital importance and so we may hear the Chairmen's summary of Session V starting with Professor Back.

K.J.C. Back Mr. Chairman, ladies and gentlemen. I will attempt to bring together points raised by the different groups upon which there is some agreement, and hope that as a result of the group reports and of this summary, research priorities will emerge which will assist the Authority in developing guidelines for the declaration and zoning of marine parks in the area. When speaking on park management priorities this morning, Mr. Kenchington identified three main categories of information required by the Authority - resource inventory, impact management, information and monitoring programmes. He suggested that scientific research might deal with:

- (i) fragility, stability and reef dynamics;
- (ii) past history of the Reef and the effect of human usage;
- (iii) stress indicators.
- (iv) the determination of the inter-dependence of reefs and the critical minimal size of a reef.

The group discussions just reported have indeed dealt with many of the categories of information and research highlighted by Mr. Kenchington, and I shall endeavour to list those of common concern.

Firstly, there is a need for precise definition of terms. For instance, what do we mean by "ecosystem"? Dr. Mather stressed that the term "optimal" is man's definition in terms of his perception. Again, what do we mean by a "reef area"?

Secondly all groups agreed on the need for basic data, data which must be systematically co-ordinated, be stored and be retrievable. Under this heading was included the mapping, naming and adequate description of all reefs in the area. The importance of modern satellite technology was stressed. Evidence was presented of vast gaps in our

knowledge of the biology of the reef system. Associated with this, particularly in regard to the history of the Reef, was the need for study of reef geology and sedimentation.

Thirdly, most groups attempted to identify priority research programmes and it was a common view that priority should be given to protection of rare phenomena, fragile environmental species and areas of special importance. In regard to the latter, not all species can be identified at present but those we know about deserve special and urgent attention. Raine Island is a case in point.

Fourthly, there was agreement on the need for studies which dealt with the marine environment, especially studies on hydrodynamics and hydrology, not only within the reef area, but between the reefs and the mainland and between the reefs and the islands, with special reference to currents, the moving of solutes and micro-organisms and, of course, sedimentation.

Fifthly, there was the question of 'usage'. This includes the assessment of the impact on the reef system of disturbance factors, especially factors relating to human activities such as fishing, tourism and recreation, scientific activity, and the usage of the reef by aborigines both in the past and present. Disturbance factors also include land based effluents, such as industrial and agricultural wastes, urban wastes, and of course, oil spills. Other disturbance factors discussed were natural hazards (cyclones, earthquakes), and biological phenomena such as predation by crown-of-thorns starfish. Reference was made to the health of the reef and methods of determining the general level of healthy reef activity and the indicators which might be monitored.

Finally, a most important matter was raised by Professor Pitman's group, namely, the management and logistics of reef research. Do we need a research station in the Torres Straits or will research be done by way of expeditions? How will the research be funded and co-ordinated? This whole question deserves full and detailed consideration by all those associated with research on the Great Barrier Reef. Thank you Mr Chairman.

K.P. Stark: Mr Chairman, ladies and gentlemen. Most groups raised the question "should the zoning regulations that we consider here apply to all the Great Barrier Reef or merely to the northern section?" Most groups adopted the principle that they would look at the general question

for the whole of the Great Barrier Reef Region, but with specific reference to the northern region where appropriate. A problem arose because a number of groups considered that the northern region was a particularly special part of the whole Region. This point was highlighted by Dr Milward's group which suggested that it might be appropriate to place a moratorium on the whole northern area until further research development could be undertaken. This might appear to be an extreme viewpoint, but the merit of it is there, and I believe it was considered by the other groups also because of the special features of the northern region. Fundamentally, it is a zone with unique features of pristine character where it might be possible to apply maximum protection with little disturbance of the naturally evolving ecosystem. This then is the first zone classification and the most restrictive. It could be applied perhaps where access is already difficult. Other groups suggested that we would also need this particular zone type where we have some special species or merely to ensure that at least part of the Reef is retained in a way that could allow the monitoring of changes occurring elsewhere.

The second type of zone was labelled by some groups as a restricted zone in the sense that access would require some form of license. Perhaps it would be a zone where research activities or educational facilities without extraction of species except for particular research projects could occur. This zone then could be labelled a 'research' or 'restricted' zone in which there would be controlled protection, but not as restrictive as required in the first zone.

The third type of zone could be called a recreational zone in which there would be limited extractive activities such as fishing or shell collecting, controlled perhaps by a Marine Park Ranger.

The fourth category of a commercial zone would allow such activities as shipping, harbours, definition of transportation routes and tourist facilities.

The fifth zone, a fishing zone, it was suggested could apply to all areas except the first two types which were specifically restricted.

The final zone type recommended is self-explanatory and related to 'special groups'. This zone would protect the rights of special groups such as Aborigines and even historical European sites.

I would like to comment on a couple of points that came from the Chairmen's summaries. There was a general feeling that controls might best be exercised by educating people to understand why zoning is necessary so that they would appreciate the regulations and the need to protect the Reef. It was suggested that the definition of zone is itself an educational exercise which could help people to understand the need to control the utilization of the Reef. Apart from the patrol-boat rangers, aircraft flights, satellites, the issuing of permits and other surveillance techniques, the importance of the educational aspect of such control should not be overlooked.

There were two suggestions that the Act might not quite cover the whole of the requirement of zoning; one was the need for the Barrier Reef Authority to study ways to implement what you might call dynamic planning to allow zoning plans to have some kind of time scale or some method of adjustment.

There was another suggestion that the entire ecosystem is not included under one jurisdictional body. For example, the mangroves, rivers and estuaries are still within the overall system of the Reef but not included in the definition of the Great Barrier Reef Region under the Act. Maybe some attention should be given to this, particularly if we are looking at special areas where complete restriction of activity is envisaged. Islands also are not within the framework of this Act, but are controlled by other Acts and to some extent by different Governments and there is a need for careful liaison and co-ordination by the Authority if what we have been talking about in the last two days is to be achieved. Lastly, it was suggested that the Authority should undertake the role of co-ordination of all the data that applies to the Barrier Reef Region. With that, Mr. Chairman, it would be best to leave the rest of the framework of that session to discussion.

Chairman: Thank you very much Professor Stark. I would like to take a few minutes of questions or comments on Sessions V and VI if anyone wishes to make them.

B. Goldman: I would like just to make two comments, firstly on what Professor Stark said with regard to a data base. It might be sensible if we could consider the establishment of a reference and scientific data base co-ordinated through the Great Barrier Reef Marine Park Authority in Townsville

where one could have a computer based system of all literature relevant to works done on the Reef, and perhaps species inventories for ecological programmes might also be appropriate. The Great Barrier Reef Marine Park Authority could act as this informational unit and a clearing house for scientific research.

Secondly is the concept of a biotic corridor across the Reef. In other places, like Africa for instance, it has been obvious that if one destroys a migratory path of some species, then you severely influence its population. The problem here would be to delineate a zone on a reef and expect that to remain as a unit. The extension of this argument is that we should be aware of the fact that we cannot allow any destructive influence to create a wedge right across the Reef which might act as a biotic barrier.

Chairman: Any comment on that?

K.P. Stark: Well just briefly, we suggested "shipping ways" should be defined as particular zone types and what you are saying is we should have "turtle ways" to protect biotic corridors of turtles and so on.

B. Goldman: No.

Chairman: We need to seek some form of clarification on what people were saying about zones. It seems to me that an important part of this study is to discover what is the smallest viable zone, or at least what is the range of area necessary to protect the "wilderness zone", or "fishery zone" - Dr. Mather?

P. Mather: I would like to start off Mr. Chairman by very thoroughly agreeing with Dr. Goldman - I think he is absolutely right about biotic corridors. I would recall discussion (that followed Professor Talbot's paper) in regard to the probable route by which you get inter-connection between reefs, and that is the floating larvae. No matter what the use of a particular reef (as long as you have viable populations on intervening reefs), the biotic corridor will probably be preserved. This is what is meant by biotic corridor.

I would also like to comment on the term fragility that has been mentioned by several groups. There has been much debate as to whether the Great Barrier Reef is fragile

or not, and yet I feel that the only true fragility that has been identified to date has been confined to a few vertebrate species like the dugong and whales. This does not mean that there is not a very complex fragility (as Dr. Bunt reminded us). This ecological fragility - if it exists - is not understood. It is very relevant and central to modern ecological theory. The Authority will need to assume for the present that the system is fragile and maintain the environment in such a condition so that the habitats and their biota might continue to survive.

Finally I would like to point out that there was a consensus that knowledge on the chemical processes of sedimentation and lithification have a high priority of research.

F. Talbot: Firstly, we have talked a lot about ecosystems and management when we do not really know anything about the ecosystems. I would remind you that we are really like a group of intelligent chimpanzees looking at a Rolls Royce jet engine and we should not really talk of management.

Secondly it seems throughout that we are still bringing terrestrial concepts to a marine area. We are talking of zoning, and thinking in our minds of circumscribed areas as we have been forced to on land. I am a little concerned that maybe we are handling a system which is so broad that we are dealing with an area extending from the bottom end of the Great Barrier Reef right through into the central west Pacific. Perhaps we should not be thinking so much in terms of circumscribing areas, but in terms of looking at the whole area and trying to keep it healthy.

N. Webb: I would just like to comment on Session VI. We were asked to examine and we did so in this sequence, criteria and categories for zoning and then went on to methods of regulation. I do not object to that sequence. I just want to suggest that at some stage though in the process of addressing these considerations, we run that through backwards and start with the administrative problems and the enforcement problems going backwards through to the criteria and objectives.

J. Oliver: I feel that the Authority is thinking of a dynamic approach in management terms, and that much of the discussion of gaps in information tends to have rather a static viewpoint in terms of processes,

in terms of distributions, variability and the dynamism of the natural environment. I have a specific personal orientation here in a concern for climatic change, and it seems to me that much of the crystallisation into zones, the crystallisation of distributions, perhaps the study of processes, is in danger of being undertaken in a static rather than a dynamic situation.

J. Bunt: If I might add a word or two here as this is a little bit of one of my hobby horses. There is the symptomology of a reef where you have a "body" and it has a "pulse" a "heart beat" and a "temperature", and these are the results of the inputs. In terms of a reef these are the resource transformations and the products; it is spelt out in our discussions and it should not get buried, for this is perhaps more critical in terms of our monitoring than anything else we can do.

Chairman: Thank you Dr. Bunt, and here we must conclude this specific discussion on Sessions V and VI.

THE END