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## **SYMBIOSIS BETWEEN EDUCATION, RESEARCH AND TOURISM**

Andrew Dunstan

Reef Biosearch is a group of nine marine biologists employed within the Quicksilver Connections company.

Quicksilver runs two high speed wave-piercing catamarans to the outer reef and a large sailing catamaran to Low Isles daily, employing biologists on board for educational and interpretive activities.

A common question asked of us is "Do they actually pay you to do this every day"? Increasingly in tourism it makes economic sense not only to ensure the long term survival of the reef but to provide the educational and interpretive options demanded by a more environmentally aware tourist/client population.

For the marine biologist this means being able to spend valuable time in the reef environment, daily accruing knowledge in the field. It also gives the chance to educate many thousands of people not only to the wonder and beauty but the importance and fragility of the reef system. It also means that biologists, generally a group with highly protective moral standards towards their reef subjects are on hand to ensure the integrity of an operation.

This is a healthy outcome from a trend towards ecotourism. Ecotourism has been defined by the Ecotourism Association of Australia as "Ecologically sustainable tourism that fosters environmental and cultural understanding, appreciation and conservation". This does not mean just having a reef guide on board to take rudimentary tours but a policy spanning all company activities.

This type of attitude equates well with the Great Barrier Reef Marine Park Authority (GBRMPA) guidelines which dictate that tourism activities must "provide for the protection, wise use, understanding and enjoyment of the Great Barrier Reef (GBR) in perpetuity." The enjoyment aspect is well catered for by tourist operations, while reef understanding is an increasingly integrated part of the whole package.

At Reef Biosearch, since its inception in 1986, we have taken approximately 70,000 people out on extended snorkelling tours, captivating their interest and knowledge of the reef. About half a million people have been subjected to our indoctrination procedures during slide presentations and talks, and over 100,000 during naturalist walks at Low Isles.

Education is accepted as possibly the best conservation tool and we have extended this beyond the boat/reef operations to within the regional school and community. Programs have been developed in conjunction with the environmental educational division and local teachers which are compatible with existing curriculum requirements. These involve students in four to eight week long school programs devoted to the reef. A great thing about these programs is the enthusiasm generated for subjects otherwise seen as boring. Community talks and activities such as beachcombing, rainforest and mangrove walks are also conducted frequently. Quicksilver's commitment to

the school program has been invaluable, providing biologist time and greatly reduced fares to Low Isles.

The other half of the GBRMPA requisite, for protection and wise use of the reef, is the area of most concern and contention between reef tourist operators and conservation minded groups. This is certainly a valid point when you consider the vast increase in tourist reef use over the last decade. The number of day trippers to the reef has increased 35 fold while the number of operators is up by a factor of 10. This is largely due to the advent of high speed catamarans offering fast and comfortable transport to the outlying reef areas on a large scale.

It could also be argued that the speed of development has overtaken the speed of acquisition of the knowledge needed to ensure the protection of the very reef they visit. Certainly now there are strict requirements operators must adhere to right from the initial proposal and accompanying environmental impact statement (EIS) to continued monitoring of the reef area of operation. These are at the moment being formalised and structured to monitor the effects tourist operation has on the reef and to develop methods to keep these effects well below an acceptable level.

Reef Biosearch has over the last 4 years been carrying out research and monitoring programs. The site of a pontoon installation at Agincourt 4 is being examined for changes in fish and coral communities and water quality. This research is a requirement of the operators permit and information from it will result in increasingly better management guidelines for tourist reef use.

The symbiosis between tourism and reef education has led to large scale employment of marine biologists in the field. Increased public awareness of the reef and its importance leads not just to the employment of marine biologists as educators but also to corporate funding for relevant research. Money in research is always in hot demand and short supply. The research carried out by on site biologists can be very productive in data intensity and sampling frequency due to the greatly reduced boat costs and easy accessibility.

The biologists of Reef Biosearch have expertise in a variety of fields including coral taxonomy, marine mammals, biochemistry and statistics. Rostering of work times is flexible enough to allow for irregular research programming while still maintaining full-time work status. The result is a variety of research programs run by Reef Biosearch and also in collaboration with other research institutions. Daily interaction in reef waters gives invaluable recorded observations, through all seasons, to investigate otherwise unforeseen or unconnected biological events of importance.

In general at Reef Biosearch we are in the unique position to combine education and research in a tourist framework. This should be increasingly carried out by other

operations both on the GBR and areas such as the rainforest and mangroves.

The most important aspects are:

- 1 The conversion from tourist to ambassadors for reef protection via education and involvement.
- 2 The overall expansion of research funds and projects.

The employment of concerned biologists can only increase the concern and care a tourist operation has for their immediate environment.

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## **DIVING AND THE LAW A SHORT HISTORY OF THE REGULATION OF SCIENTIFIC DIVING IN AUSTRALIA**

E.A.Drew

### **Introduction**

The first scientific diving in Australia was carried out under the direction of (Sir) Maurice Yonge at Low Isles during the 1928-29 Great Barrier Reef Expedition. They used the diving helmet shown in Figure 1, a piece of equipment initially developed by a Paris fire chief to allow access to smoke-filled buildings and subsequently used by Professor Milne Edwards to study marine biology down to 7.5 m (25 ft) in Sicily in 1856. Similar equipment was used in the Caribbean in the 1920s by William Beebe to depths of 18 m (60 ft) and was still being used by Jack Kitching to study kelp in Scotland in 1940.

Although the aqualung was brought to Australia in 1952, early scientific diving work by CSIRO in 1957 to study the pearl beds of northern Australia used Greek sponge divers with hard-hat diving equipment. Indeed, scientific diving in conjunction with both the pearl and abalone industries in Australia still uses the same equipment as the commercial operators in those industries, namely hookah (surface supplied air from a petrol driven compressor) diving. Initially, use of the aqualung was restricted to recreational spearfishermen, but scuba-based scientific diving in Australia began in the late 1950s and blossomed during the 60s.