## 1. INTRODUCTION

The aquarium fish industry is reported to be the world's largest fishery with annual retail sales (including both fish and associated equipment such as pumps, tanks, food and drugs) of $4 billion in 1971 (McKay, 1977). The value in Australia in 1973 was estimated to be $80 million annually (McKay, 1977), although marine aquarium fishes probably do not contribute greatly to this figure, they constitute a small but increasing fraction of the total number of imported fishes (McKay, pers comm.). Of the estimated 2 500 species of aquarium fish recorded from Australia, nearly 90 percent are marine, and most of these are from the Great Barrier Reef (McKay, 1977).

Rapid growth of the industry over the last 15 years is due largely to an improvement in airline services and modern methods of fish transportation (McKay, 1977). Although still in its infancy, the industry's rapidly expanding nature makes it of considerable potential economic significance to Australia.

In addition to being economically significant, the industry may be of ecological importance. The Great Barrier Reef is one of the most complex ecosystems known to man, and is also one of the least understood. The removal of reef fish for the marine aquarium trade has unknown effects on the ecosystem of the reef. Little has been documented on tropical marine aquarium fish collecting in the Great Barrier Reef Region (GBRR) and very little is known about its effects on reef fish populations.

There are no detailed, long term records of species, locations, or numbers of fish collected. As a result, there is little integrated knowlege about the immediate or future effects of the collection of fishes on the natural fish populations.

There is also very little published information on reproduction, larval dispersal, recruitment, life histories and natural mortality of aquarium species. Similarly, there is little

information about whether the lifespan of some marine species in captivity justifies their capture for aquarium purposes.

Due to the economic, as well as ecological, significance of this industry, there are differing views concerning management strategies which might be imposed on the industry. Some of those concerned with the ecology of the reef want the collection of aquarium fish restricted, whilst those relying on the industry for a living want collecting to continue unrestricted.

Until scientific evidence is obtained regarding the effects of aquarium fish collecting on the reef ecosystem, management decisions should take into account both the livelihood of the collector and the continued well-being of the reef. This is difficult to achieve when so little is known of the industry. It is necessary to assess the status of aquarium fishes in the GBRR in order to determine the management measures required, if any, an evaluation of the industry and its effects on the GBRR.

This report considers the operation of the industry, current regulation of the industry, known biology of important aquarium species, as well as presenting discussion regarding regulation of aquarium fish collecting.