SUMMARY

Background

The *Commonwealth Commission of Inquiry into Shoalwater Bay, Capricornia Coast, Queensland* (1994) provided information and recommendations for the future management of the terrestrial and marine areas of Shoalwater Bay. To supplement the terrestrially focussed information on recreational usage patterns presented in the Inquiry's report, the Great Barrier Reef Marine Park Authority (GBRMPA) commissioned this study to investigate marine-based recreational usage of the area.

The aim of the study as specified in the consultancy brief was:

- To determine the recreational marine usage of the Shoalwater Bay area.

The scope of the brief excluded the study of recreational usage of the area by indigenous users as well as the direct targeting of commercial fishers. The Shoalwater Bay area as defined for the purposes of this study were those waters located between the latitudes of 22° 08'S to 23° 00'S and longitudes of 150° 02'E to 151° 02'E.

To date, very few studies have focussed on the recreational usage patterns of the marine areas of Shoalwater Bay, in fact Gutteridge Haskins and Davey (1996) suggest none exist. Several studies of land usage patterns have been conducted as part of the *Commonwealth Commission of Inquiry: Shoalwater Bay, Capricornia Coast, Queensland.* Specifically, A G B McNair (1994) conducted a study of Central Queensland residents and residents residing elsewhere in Queensland regarding their attitudes towards various land use issues related to the Shoalwater Bay Military Training Area. In another study, Wood, Thompson, McIntyre and Killion (1994) developed a theoretical recreational and tourism opportunity spectrum for the Shoalwater Bay Military Training Area.

While literature on marine usage of Shoalwater Bay was limited, literature on general marine based recreation provided useful information for data analysis. Most of the literature pertained to recreational fishing, which was reported as a popular leisure time activity in national parks and wilderness areas (Borschmann, 1987: 42). Though the desire to catch a fish was the primary goal of recreational fishers, non-catch related motivations associated with the experience were also considered important (Dovers, 1994: 103). These non-catch related motivations included a desire to escape from the everyday environment, a need to experience freedom and a need for rest and relaxation within a natural 'wilderness' environment (PA Management Consultants, 1984a: 38). The social aspect of being with friends and family was also noted as a component of the experience (PA Management Consultants, 1984a: 38).

Participation rates in recreational fishing and boating have increased in western countries during the twentieth century (Dovers, 1994: 103 and Kenchington, 1993: 8). Within Australia, there are approximately 5.5 million recreational fishers (RecFish in Orr, 1997). An earlier estimate for 1990 made by the National Recreational Fisheries Working Group (Dovers, 1994: 104) proposed that there were 4.5 million people who participated in recreational fishing. This estimate approximated to 25 - 30 percent of the population. The National Recreational Fisheries Working Group also noted that seventy percent of recreational fishers were men.

A number of other writers (Gartside, 1986: 17; Kenchington, 1993: 8 and Dovers, 1994: 106) mentioned the conflict of interests associated with the use of marine based environments for recreational and commercial activities. Primarily, the continuous debate between recreational and commercial fishers regarding who is responsible for diminishing fishing stocks and the blaming of each other for the situation (Gartside, 1986: 17 and Dovers, 1994: 106).

The literature also noted the desire by recreationalists to experience a 'wilderness' setting while participating in outdoor activities coupled with a desire to '*preserv*[e the] *environmental quality*' (Jackson, 1986) of recreational settings.

Methods

The study was conducted during June 1995 - July 1996 and used quantitative research methods which included the secondary analysis of existing aerial surveillance data sets, primary data collection through mail surveys of registered recreational boat owners and recreational club members, the use of self selection surveys with the general public, and mail surveys of commercial operators. A modified delphi technique was also used to establish a general consensus from experts regarding usage patterns.

There were some constraints, biases and limitations associated with the various data sets and any use of the findings must acknowledge those constraints, biases and limitations. These included inconsistencies in aerial surveillance data, a 33% response rate for the mail survey of registered recreational boat owners and a non-saturation sample of commercial operators. The lack of a 100% response rate for mail surveys is a common feature of such surveys, Babbie (1994) notes that between 10-50% is the common range for response.

Findings and Discussion

An estimated range of 329 - 3 587 local recreationalists used the Shoalwater Bay and adjacent waters during June 1995 - July 1996. This range is based on mail, club and self selection survey respondents. The lower limit represents the number of users based on survey returns. The upper limit was estimated by determining the percentage of users by postcodes and then applying those percentages to the number of boat registrations for each postcode. The resultant number of registrations for each postcode were then summed. Based on the fact that most survey respondents noted that they were accompanied by other users, the lower limit range estimate might then be considered a rather conservative one. Expert opinion estimates of usage suggested some 1 858 vessels access the study area.

The total number of days Shoalwater Bay and the adjacent waters was visited between June 1995 and June 1996 was approximately 3 106 days for mail survey respondents, approximately 244 days for club survey respondents, approximately 352 days for self selection respondents. As none of the respondents in each of the three survey groups had completed a survey in any of the other survey groups, the cumulative number of usage days approximated 3 702 days. The six commercial operator respondents accessed the area for a total of 44 days.

In generalising the trends evident in the survey data sets, the local recreational users were drawn primarily from Yeppoon and Rockhampton, were men mostly aged 45 - 49 years of age, were employed as skilled workers or service industry employees or professionals, had lived in the study area between 1 - 10 years and accessed the study area directly via their own vessels or by vehicular transport. Those who accessed the area by vessels usually departed from Rosslyn Bay. The key areas of use were Port Clinton, Island Head Creek, Corio Bay, Five Rocks area and the northern section of Shoalwater Bay including Stanage Bay. Smaller vessels utilised the Shoalwater Bay area and open water vessels accessed the outer coastal areas. Sail powered vessels utilised the outer coastal areas in preference to Shoalwater Bay itself.

Shoalwater Bay and the adjacent waters were used by local recreationalists because of the quality of the fish stocks, the amenity of the area, the proximity of the study area to the users' residences as well as the provision of safe anchorages in various sections of the area. The primary activities conducted within the study area were recreational fishing, boating, sightseeing, camping and tourist activities with recreational fishing being the dominant recreational activity.

The local recreationalists visited the area on weekends, week days and holiday periods with holiday periods being preferred by sail driven vessels due to the time needed to access the area. The minimum usage of the area by recreationalists was once or twice a year with the mode being 3 - 4 visits per year. Some users expressed a monthly usage pattern. (Two respondents reported fishing daily during the study period.) Most users had visited the area in the last three months of

the study period and were generally accompanied by friends and family. The local recreationalists also considered non-recreational fishing extractive activities as inappropriate for Shoalwater Bay and the adjacent waters and were concerned with the protection of the recreational setting.

Management Issues

Issue One

Any use of aerial surveillance findings for management purposes must acknowledge the biases inherent in the ways that data was collected, recorded and analysed. Those biases being different periods of data collection in different years, incomplete data sets, the potential double counting of users associated with commercial vessels and recreational vessels and their dinghies or tenders as well as the inclusion of vessels observed in-transit.

Issue Two

Any use of mail survey findings for management purposes must acknowledge the response rate was 33% and that the data was biased by a lack of non-use returns even though the proportionate sampling was maintained in the return rate.

Issue Three

Recognition of 'established' usage areas by recreationalists should be considered when planning the recreational and tourism opportunity spectrums for the study area. Those 'established' areas being Port Clinton, Island Head Creek, Corio Bay, the area between Five Rocks and Cape Manifold, the area between Cape Manifold and Cape Clinton and the northern section of Shoalwater Bay including Stanage Bay.

Issue Four

The 'wilderness' qualities of the study area need to be maintained through the development of a recreational opportunity spectrum for Shoalwater Bay and the adjacent waters as 'wilderness' qualities were noted as one of the primary non-catch related motivations of recreational users.

Issue Five

Development of a recreational opportunity spectrum for the study area should include provision for the future needs of an ageing local population so as to ensure the quality of their recreational activities are maintained in their local marine-based recreational area. The recreational opportunity spectrum should also take into account the fact that the income level of the aged disadvantages their recreational opportunities and consequently their ability to recreate elsewhere, hence access to 'established' usage areas should again be considered and maintained.

Issue Six

The income level of most of the survey respondents placed them within the skilled worker or service industry category, amounts of discretionary income may also disadvantage their recreational opportunities including finding other suitable settings, consequently, continued access to 'established' usage areas should be considered by management.

Issue Seven

The study only surveyed recreational users and commercial operators of tourist activities, it did not study the commercial fishers nor the indigenous users' activities. To address this bias, any consideration of overall management of the area by GBRMPA and QDoE agencies must incorporate information and data gathered from these two user groups.

Issue Eight

Due to the conflict of interests which exist between recreational users and commercial fishers, long term monitoring of fish stocks within the study area might be commenced and/or maintained in order that catch/effort by both groups may be scientifically ascertained and publicly disseminated so comments and attitudes expressed by both user groups may be founded on fact rather than hearsay.

Issue Nine

Planners and managers need to acknowledge and include management practices which account for in-transit use of the area by both sail and motor driven vessels for short term recreation and because of the area's provision of safe anchorages.