

## **INTRODUCTION**

### **Background**

#### ***Aircraft Noise Pollution***

Since the onset of the industrial age, and the concurrent increase in noise in our environment, natural quiet has become an ever scarcer resource. Yet, natural quiet is as important a resource as clean water, clear air and wildlife (Lee 1994; Nadis 1994; Berglund et al. 1996; McCain 1997; Udall 1997). Noise pollution is among the most serious environmental problems faced by countries belonging to the Organisation for Economic Co-operation and Development. It is estimated that a third of the inhabitants of these countries are exposed to unacceptably high daily doses of noise due primarily to road and airport traffic and industry (Angus 1994; Bequette 1994; Blanchard 1998; Batz 1998). Other than destroying natural sound environments, noise has been linked to various health conditions including, hearing impairment, learning impairment, annoyance, hypertension and cardiovascular disease (Godlee 1992; Angus 1994; Trong-Neng Wu et al. 1995; Bond 1996). Noise has also been linked to behavioural changes in other species (Hicks et al. 1987; Stockwell et al. 1991; Maier et al. 1998). Although many of the impacts of noise, both on humanity and on the ecosystem in which we live, are yet to be fully defined and discerned, there is little doubt that they occur.

Aircraft noise pollution in National Parks and other protected areas as an impact on human recreational use, is a growing issue, which has only recently started to be addressed. To date few other studies describing aircraft activity and sound levels in protected areas are known to have been conducted in Australia. Although several social surveys, addressing user perceptions of aircraft noise in protected areas, have been undertaken and published in Australia. Conversely, since the late 1980's the United States of America (USA or US) has been active in undertaking studies aimed at determining both the social impacts of aircraft and the levels of aircraft use and noise in its National Parks and Forests. Studies investigating aircraft noise in the vicinity of airports in urban areas have been undertaken both in Australia and overseas. However, because of the context of the noise, this issue is quite different to that of aircraft noise in National Parks.

#### ***The Great Barrier Reef Marine Park***

The Great Barrier Reef Marine Park (GBRMP, the Marine Park) is currently the largest Marine Park in the world comprising an area of 347 800km<sup>2</sup> and stretching along the Queensland coast from Cape York in the north to Frazer Island in the south (Wachenfeld et al. 1998). The Marine Park is also a World Heritage site and experiences a diverse range of uses including: recreation and tourism; commercial fishing; shipping; scientific research; traditional hunting and mariculture. Tourism is the largest industry in the Marine Park and growth in the tourism industry is expected to continue into the future (Campbell 1993; Driml 1994; Ormsby and Shafer 1999; UNESCO, 1999). A total of 2.2 million people were estimated to have visited the park in the 1994 / 1995 financial year (Valentine et al. 1997). While between 1991 and 1995, aircraft tourist operations in the Marine Park increased by approximately 45 percent (Adami and Jennings 1995). The Whitsunday Islands are located within the Marine Park north of Mackay City between latitudinal co-ordinates 20°00'S and 20°45'S. They constitute 1% of the total area of the Marine Park but are one of the most important

tourist destinations within it, receiving a third of all visitors to the Marine Park and thus are likely to be particularly affected by growth in the tourism industry. Within the Whitsunday Islands, Whitehaven Beach is regarded as one of the most popular tourist destinations and received over 80,000 visitors during the 1994 / 1995 financial year (Dutton et al. 1984; GBRMPA 1998).

The Great Barrier Reef Marine Park Authority (GBRMPA, the Authority) is the statutory body in charge of managing use of the Marine Park under the directive of the *Great Barrier Reef Marine Park Act, 1975*. Management of the Whitsundays Region of the Marine Park is also directed by the Central Section Zoning Plan (1987), and the Whitsundays Plan of Management (1998). Day to day management of the Whitsunday Islands occurs through joint management arrangements with the Queensland Department of Environment. In order to manage use of the Marine Park, Recreation Opportunity Spectrum (ROS) settings have been designated within it and restrictions on activities and access to setting areas have been established (GBRMPA 1998). Aircraft in the Marine Park are also governed by the *Air Navigation Act, 1920* and the *Civil Aviation Act, 1988*. Under the *Great Barrier Reef Marine Park Act, 1975*, the GBRMPA may issue permits with conditions regulating aircraft in airspace within the Marine Park (includes airspace to a height of 3000ft / 915m) provided that restrictions imposed by the GBRMPA may be legally compiled with under other legislation, such as the *Civil Aviation Act, 1988*. However, the Civil Aviation Authority (CAA) promote the use of 'Fly Neighbourly Policies' between environmental management organisations and the local operators (Adami and Jennings 1995). Fly Neighbourly Policies are a voluntary code of practice and do not take precedence over CAA or defence regulations. Based on overseas experience, the CAA request that pilots maintain a minimum altitude of 2000ft (the altitude limit is considered to be potentially negotiable) above environmentally sensitive areas. To date, Fly Neighbourly Policies have been used in several parks in Australia and are judged to have been reasonably successful (Adami and Jennings 1995). According to sources at GBRMPA, they were not in use in the Marine Park in 1999 (Innes, *pers. comm.*, 1999).

The Authority has identified a range of issues which need to be resolved in order to better manage use of the Whitsunday Islands area. These include: "managing intensive use to ensure it does not devalue visitor experience at popular destinations" and "minimising disturbance to users of the Area caused by noisy and intrusive activities" (GBRMPA 1998, p.11). The need for management of the Marine Park for the purpose of human amenity is also discussed by Adami and Jennings (1995) who claim that while past issues, notably the need to regulate aircraft near seabird colonies, are still relevant, a new issue needing to be addressed in relation to aircraft is that of human amenity. They recommend that the Authority undertake a study to determine the affects of aircraft activity on human users at sites located in the various settings of the ROS. They also recommend that a detailed analysis of tourist flight operations including their routes and visitation frequencies be undertaken in order to more accurately assess the impact of aircraft in the Marine Park.

As a result of issues identified regarding use of the Whitsunday Islands Area, the GBRMPA contracted environmental psychology consultants Jayne Ormsby and Scott Shafer to undertake a social survey of visitors to Whitehaven Bay. The survey, undertaken in early 1999, aimed to assess visitor use and experience of the area, while evaluating the influence of aircraft and watercraft on peoples use and amenity (Ormsby and Shafer 1999).