

3.0 RESEARCH METHODS

3.1 Data Collection Methods

After initial discussions with planners from GBRMPA and QPWS (Whitsundays division) three methods of collecting information were decided upon. The key methods used to gather data included:

1. Visitor Survey—a self-administered survey given to Whitehaven Beach visitors;
2. On-site Observations—a record of visitor numbers, aircraft activity and vessel types and numbers per setting;
3. Interest Group Survey—postal surveys sent to members of local interest groups.

For the purpose of this report, findings from the visitor survey in association with on-site observational records are presented. Results from the interest group survey will not be shown. However, general findings will be referred to throughout the discussion.

3.2 The Study Site

Whitehaven Beach is situated on the eastern side of Whitsunday Island approximately nine nautical miles east of Shute Harbour. Figure 2 shows the location of Whitehaven Beach on Whitsunday Island. Whitehaven Beach is a six-kilometre stretch of pure white silica sand that extends from Hill Inlet in the north to Solway Passage in the south-east (Wachenfeld et al. 1998). It is an all-tide beach that is very popular with day cruises and yachts. Behind the beach lies an acacia forest established on silica sand (Colfelt 1995).

Hill Inlet, which lies between Tongue Point and the northern point of Whitehaven Beach, is a visual icon for the Whitsundays region. This unique silica sand inlet and delta has many scenic and cultural values, and is an important conservation area (e.g. mangroves, seabird nesting) (Wachenfeld et al. 1998).

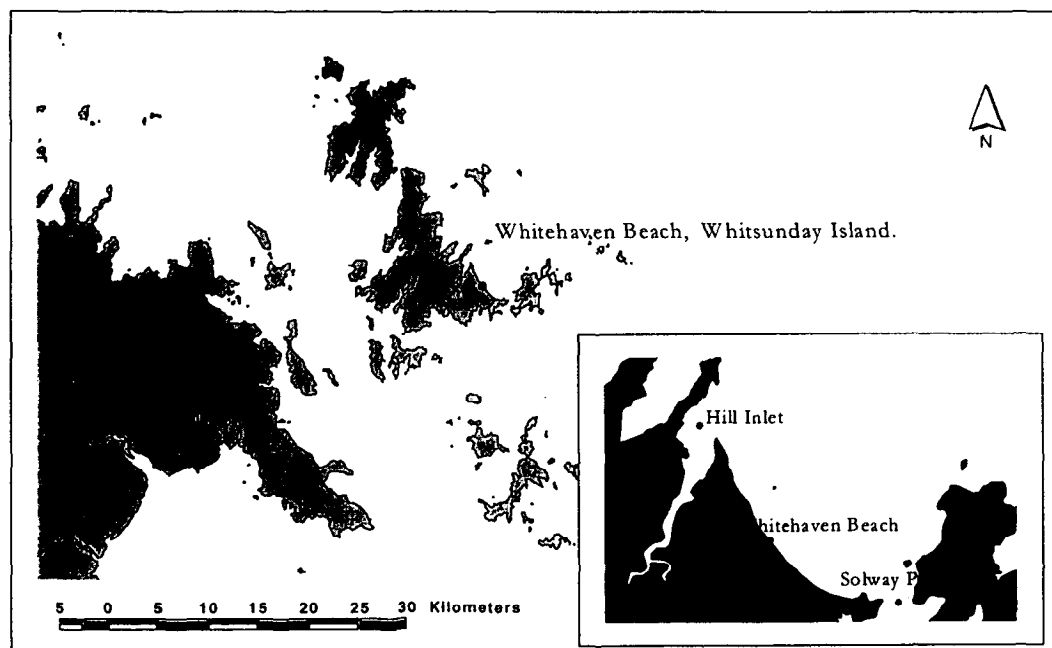


Figure 2. Whitehaven Bay and its location on Whitsunday Island. Source: GBRMPA 1999

The Whitsundays area has been divided into five recreational opportunity settings (figure 3). In order to manage for the increased use and visitation in the Whitsundays area the Authority has set limits on the vessel size, passenger load, types of craft facilities and activities allowed within these settings. This method of recreation planning is designed to provide different opportunities

these settings. This method of recreation planning is designed to provide different opportunities through the use of a spectrum of recreation settings (Clark & Stankey 1979). These areas of the Whitsundays have been assigned settings based on their values, existing use and management requirements (Wachenfeld et al. 1998).

The Whitehaven Bay area is one location that is currently divided into settings based on the ROS. Four settings along Whitehaven Beach have been identified in the Whitsundays Plan of Management. The site for High Use (Setting 2) which is located at the southern end of the beach is managed to cater for large numbers of visitors in a natural setting without adversely affecting conservation values (vessels < 35 metres and an unlimited number of people). Setting 3 is a Moderate Use area (vessels < 35 metres and up to 40 people). The regular aircraft landing area of Whitehaven Beach is assigned to Setting 3, half way along the beach, approximately two kilometres from each end. Tongue Point is also defined as a Moderate Use area. Setting 4 is designated as a Natural area (vessels < 35 metres and a group size limit of 15 people) and Setting 5 is a Protected area and includes Hill Inlet.

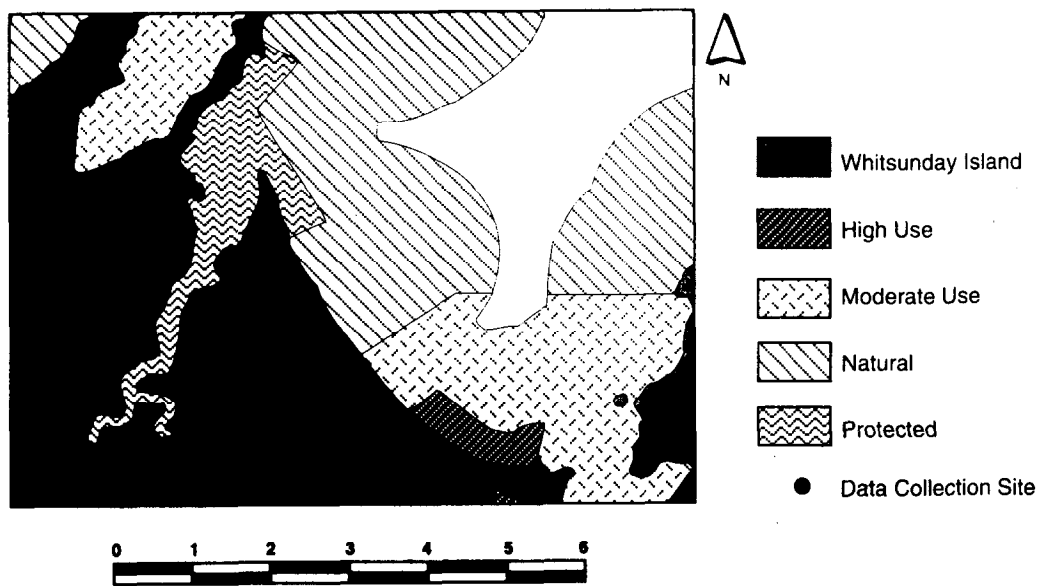


Figure 3. Whitehaven Bay settings. Source: GBRMPA 1999

3.3 Whitehaven Beach Tour Operators

Whitehaven Beach is visited daily by a number of different tour operators. Gaining cooperation from local tour operators was essential for the successful collection of visitor information for this study. A number of selection criteria were used to choose tourism operations for this research. The criteria involved:

1. the methods of transport (aircraft, sailing vessel, motorboat etc.);
2. the size of the operator (the number of tourists they carried and the intensity of use they represented); and
3. the setting visited (e.g. High Use, Moderate Use, Natural or Protected).

Five tour operators were approached and permission sought to undertake surveys with their passengers. All operators agreed to assist with the investigation. Operator 1 represented a large high-intensity use operation capable of carrying up to 400 passengers daily to Whitehaven Beach. Due to vessel size restrictions this tour operator only visits the southern end of Whitehaven Beach (High Use—Setting 2). Operator 2 was a large (21 m) sailing catamaran licensed to carry as many as 60 people onboard. This sailing craft travels three times a week to Whitehaven Beach Setting 2, but occasionally visits Tongue Point if weather conditions are favourable. Operator 3 is a maxi-yacht, which offers three-day cruises around the Whitsunday islands for up to 20 passengers. Operator 4 is a 12.5 metre boat which carries a maximum of 27 passengers and travels at speeds of over 65 km/hr. Operator 5 represented a smaller motor

vessel with seating for up to 17 guests. Operators 4 and 5 travel to either Setting 2 or Tongue Point, and their trip to Whitehaven Beach is just one of three destinations visited during the day. Operator 6, an aviation company, takes scenic flights to Whitehaven Beach landing in Setting 3. Visitation by this seaplane company is greatly dependent upon tourist demand and weather conditions. All operators offer similar activities for their guests and stay for between one to three hours on the beach.

Table 1 indicates the number of trips taken on each of the tourist boats and the setting visited during the data collection period. A total of 16 survey trips were undertaken on five different tourist boats from mid-March through to mid-April, 1999. The southern end of Whitehaven Beach (Setting 2) was the most visited site by tour operators, and three trips were taken to Tongue Point (Moderate Use). No tourist vessels visited Settings 3 or 4 at Whitehaven Beach during the study.

Table 1. Number of survey trips and setting visited by each tour operator

Tour operator	Setting visited			Total trips
	Setting 2	Setting 3	Setting 3 (Tongue Point)	
Operator 1	8	0	0	8
Operator 2	1	0	3	4
Operator 3	1	0	0	1
Operator 4	2	0	0	2
Operator 5	1	0	0	1
Total	13	0	3	16

3.4 The Survey Instrument

After much consideration it was decided that a self-administered questionnaire was the best method of obtaining information from Whitehaven Beach visitors. It was felt that visitors would not want to complete extensive on-site interviews, especially since their time on Whitehaven Beach was limited. The development of a standardised, concise survey instrument meant that it was possible to achieve high response rates and therefore obtain a reasonable sample size whilst overcoming logistical constraints imposed by time and money. The survey (Survey 1, see appendix 1) took respondents approximately 10 minutes to complete.

A pilot study was undertaken to refine the survey instrument and identify initial problems. During the pre-testing phase one problem was exposed which concerned the length of the survey. It was found that passengers on smaller boats had difficulties completing the survey due to limited time and rough sea conditions. Water spraying over the boat made completing a survey onboard impossible. To compensate for this problem, a shorter survey (Survey 2) was administered on some of the smaller tourist boats. This survey took around five minutes to complete (see appendix 2). Both surveys were made available in English and Japanese.

3.4.1 Survey Components

Survey 1 was arranged into six sections each designed to capture and measure different experiences, perceptions and characteristics of visitors to Whitehaven Beach. Survey sections and questions are described below.

Introduction

The survey commenced with an introduction to the study and a statement ensuring that all responses would remain confidential.

Section 1: Visiting the Whitsundays region (Previous Visits)

Questions 1 and 2 were designed to gather information about respondents' previous visitation to the Whitsundays region and Whitehaven Beach.

Question 2c asked visitors whether they had, on previous visits, travelled with a different operator and if so why?

Section 2: Today's Visit to Whitehaven Beach

Questions 3 and 4 enabled visitors to respond to open-ended questions regarding things that 'added to' or 'detracted from' their Whitehaven Beach experiences. It was hoped that respondents would identify any intrusions or conditions that had an influence during their Whitehaven Beach visit without being let to do so.

Question 5 asked for information about the types of experiences people expected to have whilst visiting Whitehaven Beach. This question was included to evoke expectations and to provide an insight into people's motivations for choosing Whitehaven Beach as a destination.

Question 6 allowed the respondent to describe the Whitehaven Beach setting they visited by using three words or phrases, thereby reflecting visitors images of the beach.

Section 3: Values of Whitehaven Beach

The value scale (Question 7) presents a list of nine reasons why people might value Whitehaven Beach. This scale was constructed on wording in the legislation surrounding the formation of the GBRMP and designated park/protected areas in general (Shafer et al. 1998). Visitors were asked to rate, using a five-point scale ranging from 'no value' to 'extreme value', how important each item was to the value of Whitehaven Beach.

Section 4: Experiencing Whitehaven Beach

Question 8 included an experience scale that consisted of 16 items derived from research by Driver (1977) and adapted by Shafer et al. (1998). All items were intended to measure how well specific aspects of 'experience' and 'experience dimensions' were met during a person's visit to Whitehaven Beach. Research has indicated that these types of benefits represent important aspects of people's experience in the natural environment (Brown & Haas 1980; Manfredo et al. 1983). Respondents were questioned about how much their visit to Whitehaven Beach provided these benefits by allocating a score from 1) 'not at all' to 5) 'very high'.

Question 9 was an open-ended question aimed to elicit unprompted 'top of the head' responses with regards to what improvements could be made to Whitehaven Beach. This question was incorporated in the survey to identify any positive or negative issues that may have related to the current management of the area.

Question 10 presents a list of activities which visitors may have participated in whilst on Whitehaven Beach. Respondents were asked to indicate the activities they participated in during their visit on Whitehaven Beach and allocate the percentage of time they spent on each.

Question 11 asked visitors to rate how they felt about the 'number of visits', 'distance away from' or 'amount of noise by' vessels, aircraft activity and people. Respondents assessed how they perceived each of these conditions by circling one number on a four-point response format. Respondents were given the option of answering 'didn't matter to me', to avoid the problem of being forced to rate a condition they may have had no concern about.

Question 12 followed by asking respondents about whether aircraft activity, size of vessels or other people influenced their enjoyment, in either a positive or negative way, and if so how?

Section 5: Rating Your Whitehaven Beach Visit

Questions 13 and 14 gave respondents the opportunity to rate their visit to Whitehaven Beach on a scale from 1 to 10, and indicate whether they would recommend the trip to friends and family. Question 15 enabled respondents to rate how satisfied they were with the tour operator they travelled with and the services that were provided by staff.

Question 16 sought information about the likelihood of a return visit to the Whitsundays region, and the type of trip that the respondent would take.

Section 6: General Characteristics

Section six sought details on the socio-demographic and group characteristics of visitors.

Note: Questions 2c, 6, 7 and 15 were not included in Survey 2.

3.5 The Procedure

A sample of day use visitors (domestic and international) were surveyed onboard tourist boats on the return journey from Whitehaven Beach. Interviewing passengers onboard vessels had the advantages of gaining a post-visitation experience, not interrupting visitors whilst on Whitehaven Beach, and obtaining a captive audience during the administration of surveys. Sampling occurred on different days of the week to ensure that variation in visitor numbers was accounted for. As such, surveying was undertaken on selected weekdays, on weekends when visitation was busier and during each of the four public holidays over the Easter period.

The administration of surveys was undertaken jointly by the consultant and a team of volunteer research assistants associated with the Whitsundays Queensland Parks and Wildlife Service. A training session was held to familiarise research assistants with the survey and data collection procedures. This session was aimed to ensure that differences among researchers and recorded observations were minimised. In addition, debriefing sessions were conducted after every data-collection trip to provide an opportunity for discussions about the trip and reflect upon observations made whilst at Whitehaven Beach.

To ensure the representativeness of the sample on each trip, different sampling techniques were employed on various tourist boats. On Operator 1, passengers were seated on upper and lower decks (some inside and others outside). Passengers on their return ferry were selected to represent an even spatial distribution within a given seating area. As such, passengers were randomly selected at tables and seating sections on both decks. The number of visitors approached depended upon the number of passengers travelling onboard that given day. On Operator 1 the captain made an announcement introducing the study and the research team. See appendix 3 for a copy of the Captain's announcement.

On smaller vessels it was possible for a single member of the research team to introduce the study and administer the surveys. A census was possible on these smaller vessels as passenger numbers ranged from six to a maximum of 32 during the surveying period. Operator 6 (Seaplane Company) distributed the survey during their debriefing at Hamilton Island.

3.6 The Sample

Of 610 surveys completed by visitors to Whitehaven Beach, 583 were used in the final analysis. Twenty-seven surveys (4.5%) were not used in the analysis because 11 of these were incomplete and 16 surveys from Operator 3 got wet onboard and therefore were unable to be read. Most people who were approached accepted the offer to complete a survey (97% response rate). The final sample was distributed among the different tourist operations as displayed in figure 4.

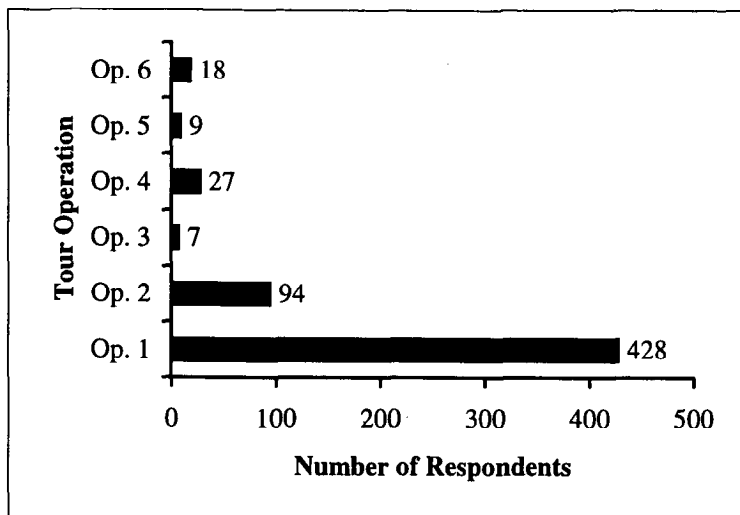


Figure 4. Number of visitors surveyed on each tourist operation

3.7 On-site Observations

In addition to the visitor surveys, an observation form accompanied researchers on each trip to Whitehaven Beach. The observation sheet was used to record information which included details about the tour operator, setting visited, amount of time spent on the beach by visitors, weather conditions, the number of vessels and people observed in each setting, and the activities of seaplanes and helicopters. Refer to appendix 4 for a copy of the observation form. The collection of this observational data was important because the number of boats, aircraft and other human-made structures in the water and on the beach are all 'social' conditions which may have an influence upon visitors and their experiences (Shafer et al. 1998). Observations made it possible to assess the relationship between perceived conditions (perceptions of aircraft activity/vessels and crowding) with recorded observations of conditions present during people's visit to Whitehaven Beach. On-site observations were not recorded for Operators 3 and 6.

3.8 Interest Group Survey

Members of local interest groups were contacted by mail and asked to complete a short survey regarding their perceptions and views of Whitehaven Beach and current issues. The Whitsundays Coastal Advisory Committee and QPWS provided a contact list of local interest group members. Forty surveys were sent out, and 20 were returned completed (in a stamped-addressed envelope). Neuman (1994) noted that a response rate of between 10 and 50% is common for this type of mail survey. Refer to appendix 5 for a copy of the interest group survey and information letter sent to local members.

It should be noted that not all interest group members were listed on the contact list supplied by the Whitsundays Coastal Advisory Committee and QPWS. As such, the sample obtained for the purpose of this study was not representative of the local interest group population or of local residents' views. The survey simply was aimed at providing a richer understanding of local perceptions of the present condition and management of Whitehaven Beach. Results from the interest group survey are found in appendix 6 and shall be referred to throughout the discussion of results.

3.9 Data Analysis

Survey questions and observational records were classified, coded and entered into SPSS (Statistical Package for Social Scientists—Version 7). Data were treated in two ways. Firstly data were summarised to provide a basic description of the sample and how they scored individual items. Secondly, relationships were tested among different variables and user types.

Only statistically significant differences are reported. In most cases differences were examined using chi-square or ANOVA.

To examine the 16 benefit items (experience scale), a principal components Factor Analysis with Varimax Rotation was conducted. For this study factors were retained with an eigenvalue higher than 1.00. Variables loading 0.4 or higher were interpreted as representing a factor. To test the potential utility of these scales the reliability coefficients were examined with Cronbach's Alpha.

A K-Means Cluster Analysis was used to group people into like categories, using the factored benefit domains as independent variables. This multivariate statistical technique was used to profile visitors into groups searching for similar types of recreational experiences. Experience types were then compared across factors such as socio-demographic characteristics, previous visitation, values, perceived conditions and satisfactions.

3.10 Limitations of the Investigation

This was an exploratory study to identify visitors experiences and the potential influence of conditions that may have an effect upon people's use and amenity whilst at Whitehaven Beach. Before discussing the findings several limitations should be noted.

Firstly data was collected during the low tourist season. Because this study was site specific, and conducted with time limitations, it was particularly challenging to obtain a reasonable sample size. The numbers of passengers on tourist boats were below the licensed carrying capacity. On smaller operators, some trips only carried half a dozen passengers, and there were days on the large catamaran (Operator 1) when only 65–70 people were onboard. In peak season this particular operator drops an average of 200 to 300 people daily at Whitehaven Beach, and smaller boats run to full capacity. As such, the data-collection phase was a lengthy process, and it was difficult to obtain an equal cross representation of passengers from small versus large tourist vessels.

In addition, weather conditions were particularly poor. Results will show that only 12% of the sample experienced fine, moderate weather conditions during their Whitehaven Beach trip. During the data-collection period that extended through March and April, four clear days were recorded. A tropical cyclone also hindered the field research. For one week many smaller tourist boat operators called off their trips. These bad weather conditions also were reflected in the many trip cancellations by potential Whitehaven Beach visitors.

Administering social surveys in a 'wet' environment did not come without some interesting challenges. On smaller vessels it was practically impossible for respondents to complete surveys during their return trip because of the spray from rough sea conditions wetting surveys. On certain days, some passengers were simply not approached because they were suffering from seasickness. To combat these rough conditions, surveys were administered on boats before departure, in the calm of Whitehaven Bay. Due to poor weather conditions and the low tourist season, the number of aircraft overflights and events were limited. As such results do not reflect the peak airtour season at Whitehaven Beach.

Finally, it was not possible to survey visitors from the different Whitehaven Beach settings because of the difficulties in trying to get to these settings. Tour boat operators did not visit Settings 3 and 4. Observations also showed that other recreational boaters didn't often use these settings. A trip to Tongue Point was difficult to plan in advance. We were aware that some smaller operators were more likely to visit Tongue Point, however the final destination (setting to be visited) was usually a last-minute decision made by the skipper on the day.

Despite these difficulties in obtaining the sample, some interesting and informative data were collected. Results are described and discussed in the following chapters.