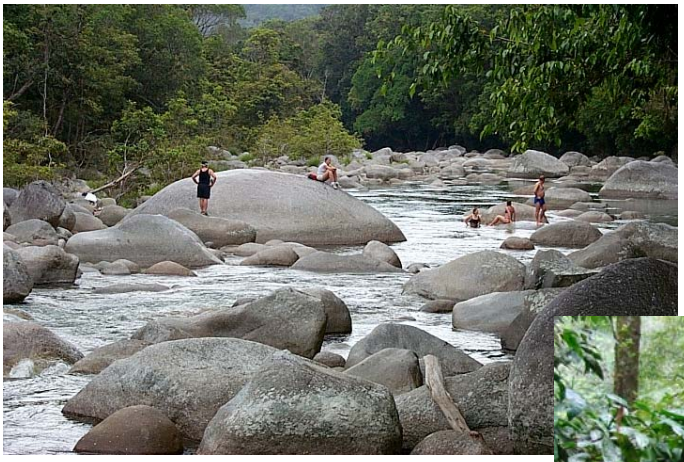
Mossman Gorge

Site Level Data Report

2001/2002



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Rainforest CRC

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For this research:
- James Cook University Ethics Approval No. H1272
- Queensland National Parks & Wildlife Service Permit No. FNQ06
- Wet Tropics Management Authority Contract No. 654

Terms of Reference

Visitor Use Survey

The following Terms of Reference have been extracted directly from the WTMA/Rainforest CRC Contract document.

Background

Measurement of visitation to the WTWHA extends far beyond the estimation of visitor numbers. The collection of basic visitor numbers provides baseline information only. Further visitor specific information is required to provide managers with an understanding of patterns of visitor use, behaviour, perceptions, attitudes, expectations and satisfaction. A comprehensive understanding of these visitor aspects is critical to effective visitor management including minimisation of biophysical impacts and maximising benefits to the land manager, visitor and community.

WTMA commissioned Manidis Roberts Consultants in 1993 to conduct an extensive visitor survey with the aim of providing baseline information for comparison with future visitor use surveys. The Manidis Roberts 1993/1994 visitor survey was conducted over 56 sites and although not comprehensive provided an important first step in visitor monitoring within the WTWHA. The MR survey approach include 3 key elements:

- traffic counts
- site observations
- visitor interviews

A number of subsequent visitor use surveys have taken place throughout the WTWHA, and although they have not taken place in as many sites as the Manidis Roberts 1993/1994 survey, they have been far more comprehensive and complex in order to investigate the variety and complexity of issues identified by management agencies.

Aims:

- To collect, compare and review site-based visitor information against previous survey exercises, including aspects of the MR survey
- To update WTMA's visitor survey system to achieve improved administrative efficiency and capture of key site-based visitor information which will aid land managers and the tourism industry in making informed management decisions
- To contribute to measuring psychosocial indicators for State of Wet Tropics reporting processes
- To provide an integral input or tool for the 'Visitor Monitoring System (VMS) for the Wet Tropics World Heritage Area', a project which is also being undertaken by Rainforest CRC during 2001 to 2002.

(Ref: *WTMA Contract # 654 , 2001*)

About the Author

Dr Joan M Bentrupperbäumer is a Senior Research Fellow and Project Leader with the Rainforest CRC and Lecturer at TESAG and the School of Psychology, James Cook University, Cairns. Her research interests include human-natural environment transactions using social, psychological and biophysical perspectives. Her research approach incorporates an interdisciplinary perspective on reciprocal relationships indigenous and nonindigenous people have with the natural/built/social/cultural environment in the WTWHA and the implications of such relationships for environmental management, tourism and local communities in the region. A particular emphasis in the research is placed on the 'real world' application of results in terms of planning for, managing, monitoring and reporting on the State of the Wet Tropics, and developing practical mechanisms and strategies to mitigate impacts on those features of the WTWHA inherent to its World Heritage status.

Acknowledgments

The success of this research project, which was undertaken across ten sites within the Wet Tropics World Heritage Area, has very much depended on the many people involved in various research related tasks. In particular I would like to acknowledge my colleague Dr Joseph Reser who has worked together with me over a number of years now developing and refining the analytic framework, survey instruments, and methodologies for this multidisplinary research on impacts of visitation and use in protected areas. Together we have finalised a report which brings together the results from the ten site level reports, and discusses in detail the analytic framework, methodologies and procedures which were used to undertake this research (Bentrupperbäumer & Reser, 2002a). I would also like to specially acknowledge my research assistant, Sue-Ellen O'Farrell, who has made a major contribution to this research by assisting me in every aspect of the administration of this project

In addition I wish to acknowledge all of those listed below who were involved in various aspects of this research.

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Bronwyn Guy, Joshua Guy, Charmayne Paul, Sue-Ellen O'Farrell, Lucas Talbot, Sunny Pegaroro, and Jenny Butler

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Kristie Ashden, Rosanna Brown, Shannon Bros, Megan Campbell, Margit Cianelli, Campbell Clarke, Laurel Cooper, Cheryl Cornelius, Ian Curtis, Leyla Demis, Mathew Earle, Heidi Freiburger, Malcolm Frost, Michelle George, Paula Gilbard, Bronwyn Guy, Joshua Guy, Kristen Haaland, Alicia Hill, Steve Lawrence, Denise Lievore, Lisa Martin, Rik Morgan, Sue-Ellen O'Farrell, Charmayne Paul, Sunny Pegoraro, Romina Rader, Quinn Ramsden, Hilde Slaatten, Mathew Sutherland, Lucas Talbot, Colin Tonks, Ben Trupperbäumer, Steve Turton, Roger Wilkinson, Robyn Wilson, Cleo Wilson.

C. Field Assistants at Mossman Gorge
Steve Turton, Charmayne Paul (Field Supervisors), Lucas Talbot, Sue-Ellen O'Farrell, Leyla Demis, Malcolm Frost, Ian Curtis
Rik Morgan (Traffic Counter)

D. Research Colleagues
Dr. Robyn Wilson, Assoc. Prof. Steve Turton and Assoc. Prof. Joseph Reser.

E. WTMA Personnel
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This Research

Natural resource managers are increasingly aware that the real issue and challenge for them is people management. In a protected area context this requires an informed understanding of the nature and quality of the interaction between people and environment. The multilayered and multidisciplinary site-level approach applied in this research is one that provides such an understanding and has evolved from, built upon and refined earlier research endeavours (Bentrupperbäumer & Reser 2000). The conceptual and methodological framework which assesses and documents this interactive process and which was applied in this research is outlined in Figure 1. This framework differentiates between four primary research layers or domains, one for each of the four key site-level 'environments' within the setting: *social and psychological (*psychosocial*), natural and built (*physical*)* (Reser & Bentrupperbäumer, 2001). Research projects representative of each of these 'environments' were conducted simultaneously at the site, which provided a comprehensive and realistic context for measuring, monitoring and reporting on the *impacts* of visitation and use at recreational settings in the Wet Tropics World Heritage Area.

From a management perspective, this site-level research approach provides specific site and situation level data which can directly inform site level decision-making and practice, as well as monitoring and reporting (see Site Level Reports #1 to #10, Bentrupperbäumer 2002 a to j). In addition, this site-level sampling allows for an accurate and meaningful aggregate picture of what is happening at a bioregional or World Heritage Area level, as long as data collection sites and data collection are representative (see Report #11, Bentrupperbäumer & Reser 2002a , *WTWHA Site Based Bioregional Level Perspective 2002*). Given that reporting on the State of the Wet Tropics is a statutory requirement, the standardised conceptual and methodological framework used across the ten WTWHA sites and the subsequent information provided by research such as this is critical for continued monitoring and reporting change over time.

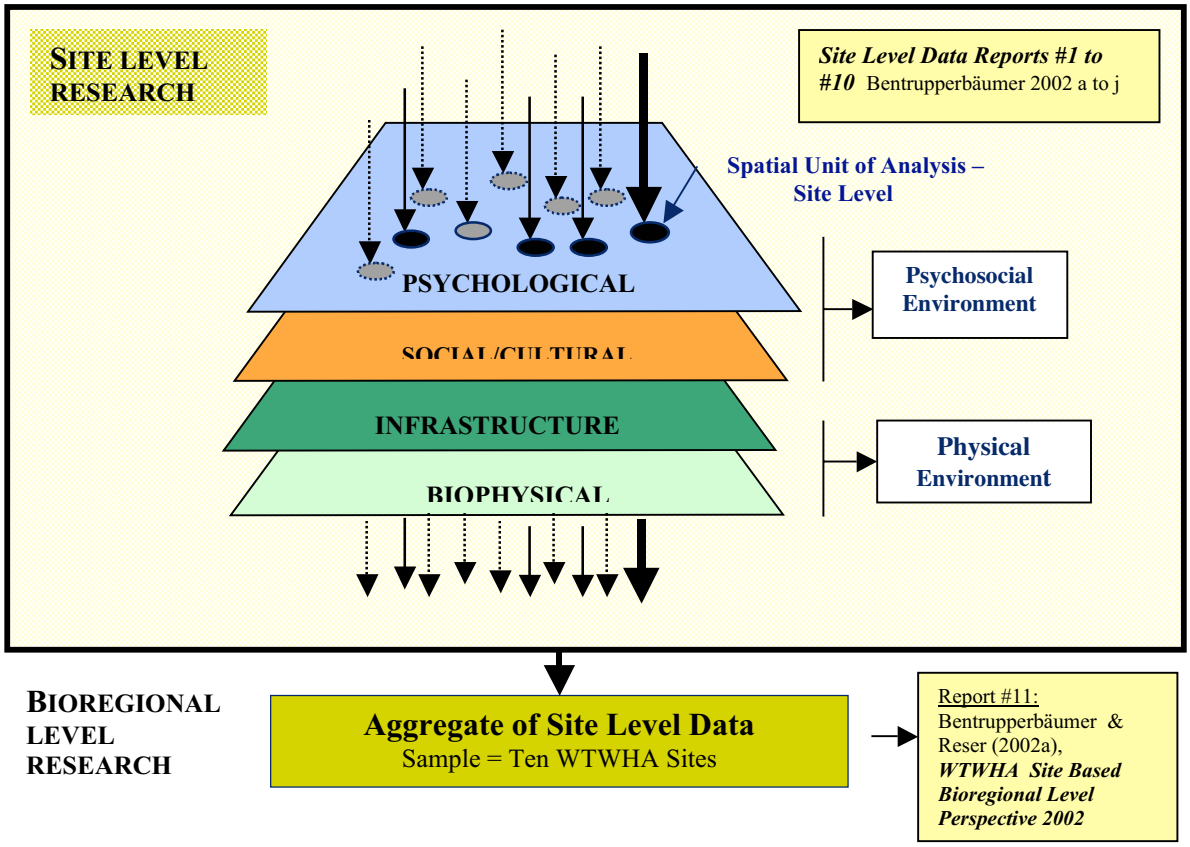


Figure 1: Diagrammatic representation of the research layers, domains and report outputs for this research .

This Report

This report is one of ten site-level reports which presents a comprehensive set of data analyses for the strategic sample of research tasks undertaken across three of the four research domains outlined in Figure 1. The research covered in this report was undertaken at the Queensland Parks & Wildlife Service and Wet Tropics World Heritage site, ***Mossman Gorge***, during 2001 and 2002. Since the primary objective of this report is to provide key site-level data of relevance to all levels of management, from on-ground to policy, planning, monitoring and reporting, details of methodology are not included here. This information is available in a separate but accompanying report (Report #11, Bentrupperbäumer & Reser, 2002a). When *comparative data* from previous studies are available they are included in each relevant section. When such data is from studies other than the authors, methodology and specific measures are often different. The layout of this report, which compliments the research domains presented in Figure 1, is outlined in Figure 2 and the discussion that follows.

SITE LEVEL REPORT

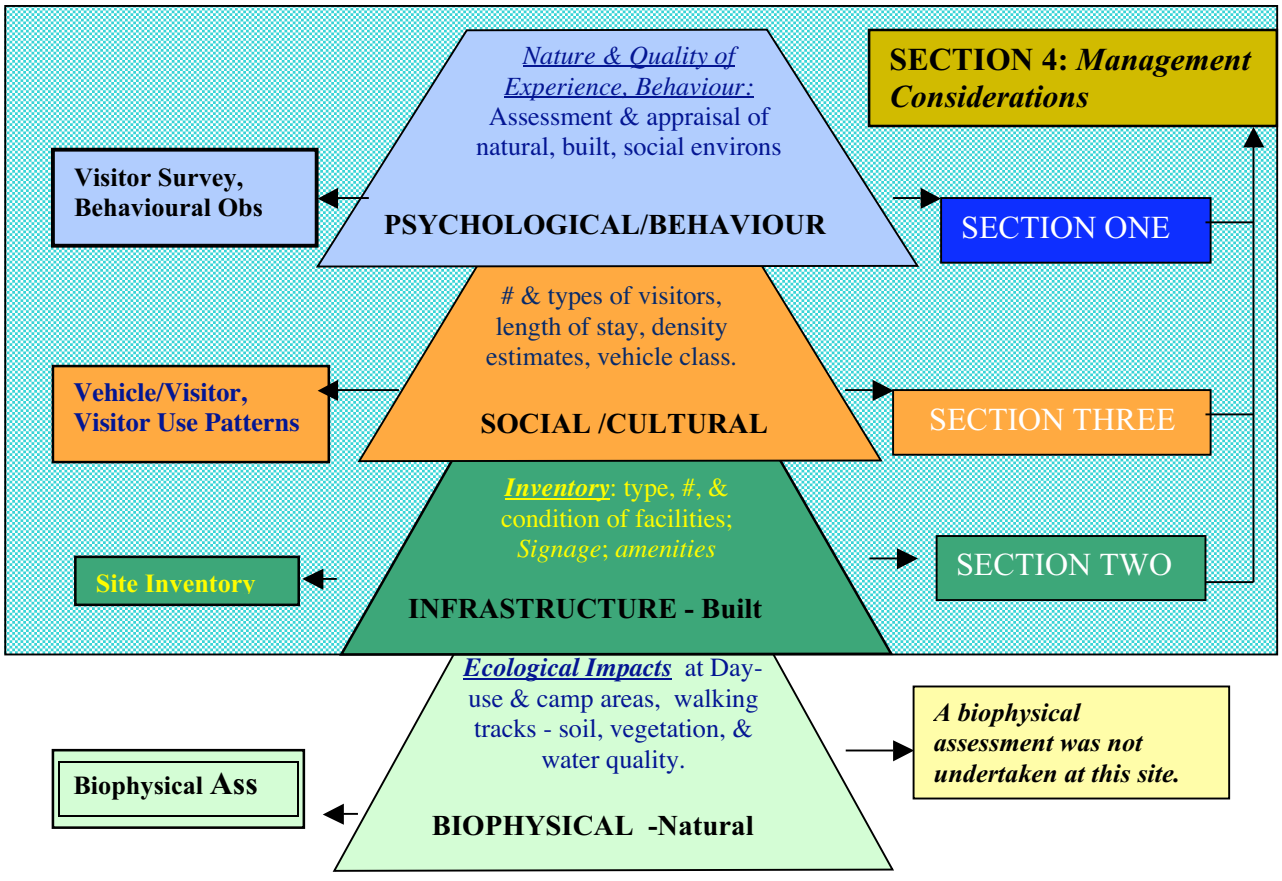


Figure 2: Diagrammatic representation of the report layout and report sections.

The layout of this report is in four sections. The first three sections present data which reflect the strategic sampling across three research domains, while the fourth section addresses key management considerations. The data in this report is presented in some considerable detail the purpose of which is to allow for the identification in future monitoring of changes in the system over time, however subtle. It also provides management agencies with the detail required for State of Environment reporting and planning, policy and on-ground management decision-making.

Data Sections

Section 1: *Psychological and Behavioural*

In the first section, general descriptive analyses of the two stages of data collection undertaken at this site in September, 2001 and April, 2002, are presented. Data collected includes:

a) ***visitor survey*** provides information on visitor profile, reasons for visiting, appraisal of the natural, built, social environment, and signage, visitor activity, prior information sources used, experience and satisfaction. Comparable survey items from Manidis Roberts (1993/1994) are also included.
b) ***behavioural observations***, and
c) ***general comments and additional observations*** by visitors, field assistants and field supervisors.

Section 2: *Infrastructure/Built Environment*

The second section presents an ***inventory of site facilities and infrastructure***, including all ***signage***, which was undertaken by the author during the same data collection periods. An inventory from previous research (Bentrupperbäumer & Reser 2000) is included for comparison as is signage information from SitePlan (1993).

Section 3: *Social Setting/Visitor Use Patterns*

The third section presents information on the social setting of the site including visitor use patterns. While the research undertaken in this section does not encompass the full meaning of *social*, the information nevertheless addresses some aspects of visitor use patterns including number and type of visitors accessing the site, length of stay at the site, pattern of use over time, vehicle type, etc. This information was obtained and is presented in two ways.

a) The first is observer-based information which outlines vehicle and visitor data obtained over 4 x 8 hour observation periods during September 2001 and April 2002.
b) The second is instrument-based information obtained from the traffic counter which provides monthly, weekly, daily records of vehicle numbers, and visitor numbers calculated from visitor counts in vehicles and Questionnaire item # 8 in the visitor survey. The traffic counter was installed for a continuous period of 12 months from mid September 2001. Traffic counter data from Manidis Roberts (1993/1994), the WTMA Traffic Counter Program (1993-1997), and Bentrupperbäumer and Reser (2000) are included for comparison.

Integrative Section

Section 4: *Management Considerations*

The fourth section of this report addresses management considerations that have emerged through the integration of the data across the above three research domains. These considerations cover topics such as: presentation, protection, opportunities, problems and issues, threatening processes, layout and design, indicators and monitoring.

Site Location & Description

Mossman Gorge is situated within the Daintree National Park, 5 kilometres west of Mossman. Mossman Gorge is a Wet Tropics World Heritage site and occurs in the north east central section of Australia's Wet Tropics of Queensland World Heritage Area (WTWHA), which extends from Cooktown southwards to Paluma, encompassing an area of 894,420 hectares (Figure 3).

Natural Environment

One of the main features of the site, the Mossman River which flows from the tableland, has over time carved through the granite mountain ranges and created the other main feature of the site, the Mossman Gorge. The site is typical of a low land forest, with a dense canopy made up of strangler fig trees, epiphytes, and woody vines (Thomas, 1994). More than 100 species of trees, shrubs and vines have been identified at the site, with fig trees and their flying buttresses being popular attractions (Ritchie, 1995).

Indigenous and Non indigenous Cultural Environment

Mossman Gorge has traditionally been occupied by the Kuku Yalanji tribal people (Ritchie, 1995; WTMA, 2000). The mythology of the Daintree region is evident with many sites such as Mossman Gorge having a strong spiritual meaning for the Kuk Yalanji people. It is believed by the Kuku Yalanji that the region originated from the actions of the Rainbow Serpent (WTMA, 2000). The Kuku Yalanji's intimate knowledge of the natural environment allowed them to seasonally take advantage of what the environment offered (APD, n.d.). European contact to the area came in the form of cedar cutters and tin miners (WTMA, 2000). The presence and settlements of Europeans forced the Kuku Yalanji into missions along the Daintree, in particular Mossman Gorge (WTMA, 2000). Today, the Kuku Yalanji have established a cultural tourism venture at Mossman Gorge, informing visitors of the cultural and historical significance of the area (Bentrupperbäumer et al., 2001).

Built Environment

The Mossman Gorge site has been designed for day usage only, providing visitors with the following facilities: car park area, walking tracks, lookout platforms, swinging bridge, picnic areas, swimming opportunities, and toilet facilities. Signage is evident throughout the site. The layout of the site is presented in Figure 4. See Section 2 for details of infrastructure/built environment.

Opportunities

Recreational There are two main activity-based recreational opportunities available at Mossman Gorge, walking and swimming. There are two walking circuits at the site, a short loop and a 2.7 kilometre loop that extends deeper into the rainforest. The current status of the tracks is outlined in detail in Section 2. Visitor comments relevant to these tracks are presented in Section 1. Visitors are also able to swim in the crisp water of the Mossman River. Other recreational opportunities available include: photography, and having a picnic.

Experiential In addition to the activity-based recreational opportunities outlined above, Mossman Gorge provides an important experiential opportunity such as nature appreciation and experience. Solitude is an experience rarely achievable at this site due to the popularity of the site. Early morning and late afternoon would be the only time this site is not busy.

Visitation

Compared to other sites in the Wet Tropics, Mossman Gorge experiences very high levels of visitation with approximately 366,000 visitors per year. This visitation is lowest in September (5,310 vehicles) and highest in August (12,563vehicles), and is spread evenly across the weekdays with a slight increase during weekends.

Site Maps

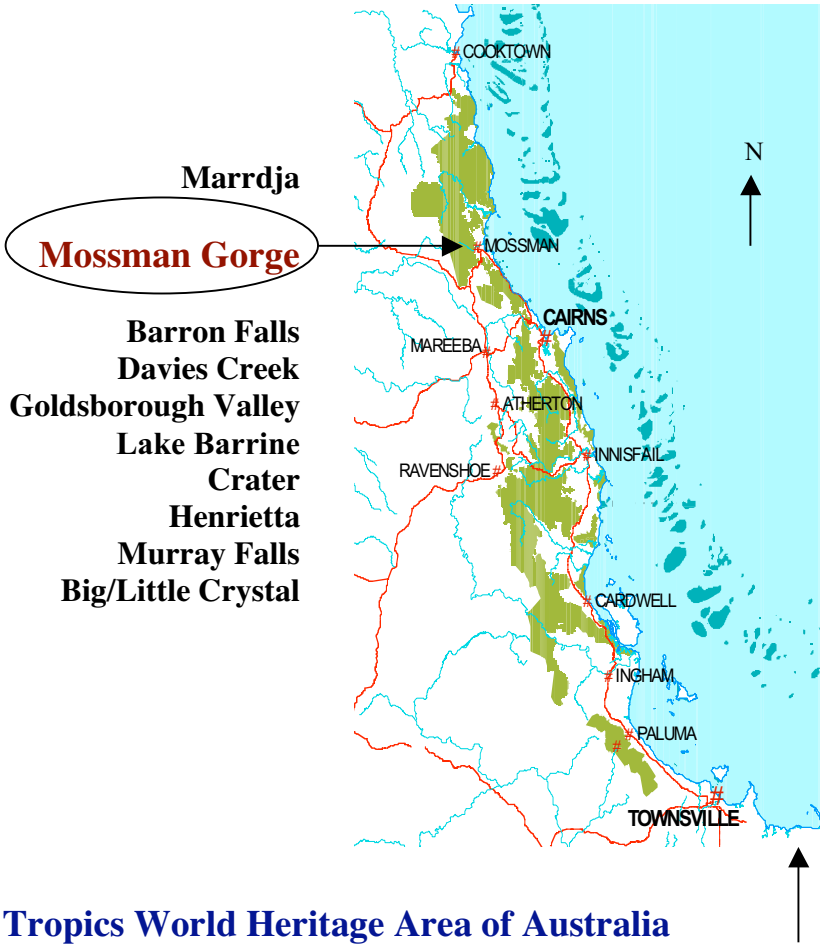


Figure 3: Site location within the Wet Tropics World Heritage Area.

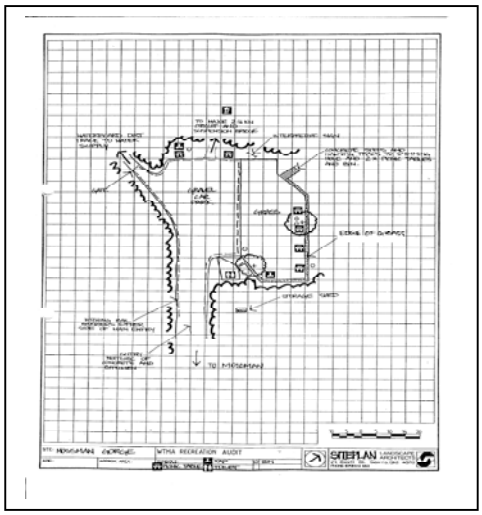


Figure 4: Mossman Gorge site map.
(Source: SitePlan Landscape Architects, 1993)

Site Management

Queensland Parks and Wildlife Service/Environmental Protection Agency

The Queensland Parks and Wildlife Service/Environmental Protection Agency (QPWS/EPA) is responsible for the on-ground day-to-day management and upkeep of Mossman Gorge site.
According to the management principles for Queensland's National Parks:

A national park is to be managed to –

(a) As the cardinal principle, "provide, to the greatest possible extent, for the permanent preservation of the area's natural condition and the protection of the area's cultural resources and values; and

(b) Present the area's cultural and natural resources, and their values; and

(c) *Ensure that the only use of the area is nature-based and ecologically sustainable."*

(The State of Queensland, EPA, 2001, p.7)

In the context of *sustaining recreational and tourism opportunities* the following principles were identified in the Master Plan for Queensland's Park System (The State of Queensland, EPA, 2001):

> *A range of opportunities will be provided for visitors to enjoy parks, and interpretive programs will enhance visitor awareness, appreciation and protection of natural and cultural heritage.*
>
> *The park system will be managed to provide visitors with facilities that are safe and are located, designed, constructed and maintained to meet appropriate safety standards, and with information that will provide visitor awareness of the hazards present in parks and the levels of skill and competence required to cope with the risks they may face.*

Wet Tropics Management Authority

The Primary Goal for the Wet Tropics World Heritage Area is to implement Australia's international duty to *"protect, conserve, present, rehabilitate and transmit to future generations the Wet Tropics World Heritage Area, within the meaning of the World Heritage Convention."*

Site Specific Management Intent

Mossman Gorge site is classified as a Zone D site by the WTMA's zoning scheme. This zoning system is based on a "distance from disturbance" model. The WTMA management intent for this zone type is described below:

"To accommodate developed visitor facilities to enable visitors to appreciate and enjoy the Area. To ensure that the impact of visitor infrastructure is managed to minimize the effect on the integrity of the Area" (Wet Tropics Management Authority, 1997 p.33).

In addition, the Wet Tropics Management Authority's (WTMA) Visitor Opportunity Class system describes Mossman Gorge site as a Visitor Facility Node (Class 4). The criteria for this category of site, as defined by the WTMA (1997 p.94), are detailed below:

- An area where a visitor may expect opportunities for presentation, intensive social interaction, and where management presence may be obvious;
- Accessible by vehicle along presentation roads;
- Having developed visitor facilities such as formal car parks, toilets, picnic facilities and camping areas;
- Providing access to a range of recreation opportunities;
- Having the potential for further development of visitor facilities.

Executive Summary

Section One :
Psychological & Behavioural

Visitor Survey & Behavioural Observations 2001 & 2002

Visitor Survey Analyses

The following key findings are based on the visitor survey being undertaken over four days in September 2001 and April 2002, and a respondent number of 738.

Visitor Profile

- Mossman Gorge is an ***important site for overseas visitors generally***, and an important ***local use site in the wet season.***
- It is a site most frequently used by people between ***20 and 29 years*** of age.
- Approximately the same number of visitors who visit Mossman Gorge travel in private and hired vehicles.

Prior Information Sources used

- Most people know of Mossman Gorge because of ***word of mouth.*** Having ***been before*** and ***travel guide or book*** are also important sources of information. Very few visitors to Mossman Gorge use the web as a source of information.

Reasons for Visiting

- The primary reason given for why people visit Mossman Gorge is to ***see the natural features*** and ***to be close to/experience nature.***

Visitor Appraisal of Natural Environment

- Visitors find the ***natural features*** of Mossman Gorge to be ***interesting, in good condition*** and ***appealing***.
- ***Natural features*** that visitors were expecting to find but were unable to, were ***fauna related***.

Time Spent and Activities Engaged in

- Visitors spend just enough time at Mossman Gorge to undertake the ***short walk, take some photos*** and ***have a swim.***
- Very few visitors spend time picnicking and looking at signage/interpretation material.

Visitor Appraisal of Signage

- Of the information types available ***natural/ecological information*** received the lowest assessment (minimally available).
- Most visitors found the ***rules and regulations*** and ***safety information*** easy to determine, understand and locate.
- ***Natural, ecological,*** followed by ***cultural and historical information*** were the types of additional information most frequently sought by visitors.

Visitor Appraisal of Built Environment

- Overall, visitors were satisfied with the ***condition of the facilities.***
- The ***walking track*** was used most frequently by visitors.

- The most frequently requested additional facility was a cafe / kiosk.

Visitor Knowledge of Management Agencies

- The majority of visitors were ***unfamiliar*** with the agency responsible for managing Mossman Gorge.
- The World Heritage status of Mossman Gorge was also ***unknown*** to the majority of visitors.

Visitor Appraisal of Social Environment

- ***Experienced crowding*** appears to be a problem for the majority of visitors to Mossman Gorge.

Experience & Satisfaction

- ***V***isitor satisfaction which was measured by ***enjoyment*** and ***worth the money*** was moderately high.

Comments

Most of the visitor ***comments*** were about the natural environment**,** built environment and the social environment**.**

- The social aspects of the environment at Mossman Gorge were frequently reported as detracting from visitor enjoyment, in particular, crowding and the behaviour of other visitors.

- Positive comments about the site focused on the natural aspects. Visitors often made comments about the beauty of the site. The aspects that enhanced visitor enjoyment of the site related to the water/river.

- Comments that suggested improvements on the site focused on:
  - more ranger presence,
  - more information and signage on the walking tracks,
  - more rubbish bins around the picnic areas and walking tracks,
  - better / more car parking.

Behavioural Observations

From the observations made at Mossman Gorge in September 2001 and April 2002, the following events were the most frequently observed.

- ***Domestic Animals***

  Dogs were observed in vehicles, and being walked around the site on a lead.

- ***Speeding***

  Vehicles were observed speeding up the road close to the car park. Motor bikes were more frequently observed speeding than cars.

- ***Inappropriate Visitor Behaviour.***

  Inappropriate behaviour was often the result of congested parking at the site. Aggressive behaviour (swearing at field assistants and other visitors), and dangerous driving (reversing down the road) were frequently observed in the car park and along the access road.

Section Two:

Infrastructure Inventory and Profile

Key Findings

Site Infrastructure Inventory & Assessment

- Mossman Gorge contains three distinct activity nodes – ***Car Park, Picnic Area*** and ***Walking Track.***
- Within each of these nodes a variety of ***infrastructure*** has been established.

Car Park
- The car park is highly structured and landscaped, but far too small during visitor peak times.
- Minimal litter present in this area and no damage to infrastructure evident.

Walking Track - swinging bridge & circuit along Mossman River
- The infrastructure is good with little evidence of ***graffiti or vandalism***
- ***Litter*** is evident around certain locations on the track.
- The wear on the facilities of the track is high, with high soil erosion also present.

Site Information and Signage

- A total of ***28 sign structures*** containing ***46 separate sets of information*** relevant to Mossman Gorge were recorded at the site itself.
- Most of these signs (32.6%) were for the purpose of ***visitor orientation***.
- ***Visitor advice*** was mainly in the form of safety information, cautioning visitors about risks associated with the river/swimming, and maximum carrying capacity of the bridge.
- No ***interpretive*** signage currently present at this site compared to 1993 when there were nine interpretive signs. Some natural/ecological information is incorporated in the corporate signs.
- Three ***corporate identity*** signs were present and they were along the access road and in the picnic area.
- The ***foreign language*** signage present at this site was part of the safety information provided on the visitor advice signs.

Section Three:

Vehicle and Visitor Monitoring

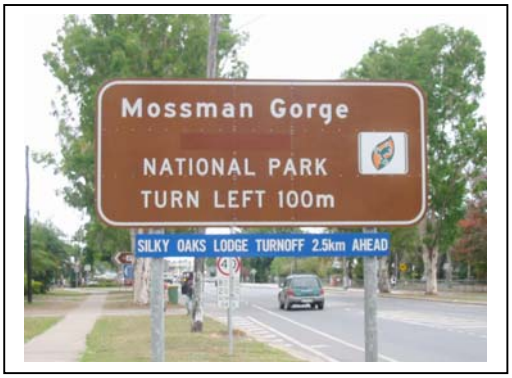
Key Findings

Vehicle and Visitor Records

- Most common vehicle type accessing Mossman Gorge was the ***car*** (69%).
- The highest number of people at the site at one time was ***340*** (1500 hours 31st March 2002).
- The highest number of vehicles at the site at one time was ***105*** (1240 hours 31st March 2002).
- The busiest periods at Mossman Gorge occurred around midday and throughout the mid afternoon.
- On average, people stayed at Mossman Gorge for ***76 minutes*** (just over an hour).

Traffic Counter Data

- A total of ***107,769 vehicles*** and ***366,415 people*** visited Mossman Gorge in the 12 months September 2001 to 2002.
- On average, ***8,290 vehicles and 28,182 people*** visited this site ***each month,*** range 18,047 to 42,695 vehicles.
- ***August*** received the ***highest number of visitors.***
- On average, ***1,924 vehicles and 6,543 people*** visited Mossman Gorge ***each week***, range 4,002 to 10,683 vehicles.
- ***Daily*** vehicle numbers ranged from ***349 to 1,867***.
- ***A***verage ***weekday*** vehicle number was ***924 per day.***
- Average ***weekend*** vehicle numbers was ***1,015 per day.***



Section Four:

Management Considerations

Key Findings

Presentation

- The presentation of Mossman Gorge as a World Heritage Area site is moderately effective in that just over 40 percent of visitors are aware of its World Heritage Area status.
- Indigenous and nonindigenous cultural attributes of the site are not at all presented in terms of interpretive signage.
- Natural attributes are reasonably well presented in terms of appeal, condition and management of the site.
- Management identity of the site is not well presented, but their responsibilities as assessed by visitor appraisal of the condition and management of the built environment is well presented.
- Legibility, functionality, and environmental sensitivity of the infrastructure and facilities, layout and design is a concern, so some redesigning and upgrading is required.

Opportunities

- Mossman Gorge is providing for and facilitating activity-based recreational opportunities in a reasonable way.
- Experienced-based opportunities are very important for visitors and are reasonably well accommodated for at this site.

Specific Problems and Issues

- Principal behaviour management problems relate to visitors violating regulations which occur despite the presence of signage. This may require more innovative rule/regulation communication and redesign and upgrading of facilities.
- Inappropriate behaviour most evident included littering, speeding and swinging and jumping up and down on the bridge.

Section One

Psychological & Behavioural

Visitor Survey & Behavioural Observations 2001 & 2002

SECTION ONE

- Descriptive Analyses of Survey
- Additional Comments on Survey
- Comments to Field Assistants
- Behavioural Observations

Visitor Survey of the Wet Tropics Region in North Queensland Dry (Stage 1) and Wet (Stage 2) Season 2001/02

GENERAL DESCRIPTIVE DATA ANALYSES

Survey Location: **Mossman Gorge National Park**

	Stage 1	Stage 2
Survey Dates	29th & 30th September 2001;	31st March & 1st April 2002;
Survey Times	0830 to 1700 each day	0830 to 1700 each day
Weather	51.1% Sunny 47.1% Overcast 0.3% Raining 0.3% Hot 0.9% Warm 0.0% Cool	88.5% Sunny 3.9% Overcast 0.0% Raining 3.1% Hot 4.4% Warm 0.0% Cool

This visitor survey was undertaken over two periods, September 2001 and April 2002. For clarity of presentation the data analysis/results corresponding to these data collection periods are represented in two colours, grey and green, and for the combined, dark red:

Stage 1: September 2001

Stage 2: April 2002

In addition, where comparative data is available from Manidis Roberts 1993 and 1994 data collection periods this is included in the relevant section and is represented in yellow.

Comparative Data ***(Manidis Roberts 1993/1994)***

- Primary data analysis for this section of the report has been undertaken by Bronwyn Guy, James Cook University.

Questionnaire Profile

Mossman Gorge is one of the most visited sites in the WTWHA (366,415 visitors per year – 2001/2002). It was therefore possible during the survey distribution period to approach many visitors and request participation in the survey. On the whole field assistants found visitors to be co oporative, interested in the research, and willing to participate. Over four days of field work approximateky ***784*** people agreed to participate, and ***738*** surveys (94%) were successfully completed and analysed. The results presented in this section are representative of those dependent and independent visitors using Mossman Gorge at the time during which surveys were undertaken. The following tables outline the details of respondent participation and survey distribution .

a) Type of Questionnaire Distributed & Returned

A total of **738 questionnaires** made up this data set, the majority of which were completed on site. Four percent were take-homes and mailed back.

	Stage 1: 2001		Stage 2: 2002		Combined	
	n	Percentage	n	Percentage	n	Percentage
On-Site	317	91.1%	334	85.6%	651	88.2%
Take-Home	31	8.9%	56	14.4%	87	11.8%
Total	**348**	**100%**	**390**	**100%**	**738**	**100%**

b) Status of Questionnaire Returns

Of the **784 questionnaires returned**, 5.5% were rejected for the following reasons: they were over 50% incomplete, respondents were too young, or they were posted back well after data entry and analysis had been completed.

	Stage 1: 2001		Stage 2: 2002		Combined	
	n	Percentage	n	Percentage	n	Percentage
Analysed: Completed	348	89.7%	390	98.0%	738	94.5%
Rejected: Incomplete, under age, returned too late etc.	40	10.3%	6	2.0%	46	5.5%
Total	**388**	**100%**	**396**	**100%**	**784**	**100%**

c) Non-Response Information

Because of the considerable number of visitors to this site field staff found it very difficult to obtain exact numbers and details of non-responses. However, an estimate has been established from what information was available. Approximately **1,150** people were approached over four days of survey distribution, of which 27.8% would either not take part or failed to return the survey. Many of these non responses were from tours.

a) Background Information *Key Findings*

Stage 1: September 2001 *Visitor Profile*

During this first data collection stage,

- The majority of visitors (respondents) to Mossman Gorge were ***Australian*** (as opposed to overseas visitors). Of the Australian visitors, most were ***national*** visitors, i.e., they lived outside the Wet Tropics bioregion but within Australia;
- ***Nonindigenous Australians*** were the major ethnic group;
- The highest level of education achieved for the majority of visitors was ***Tertiary B (University);***
- While the average age of visitors was ***37 years***, the majority were in the ***20 – 29 age class***;
- More females participated in this survey than males.

Stage 2: April 2002 *Visitor Profile*

A number of differences in the visitor profile was evident in this second data collection stage.

- There was a slight decrease in the number of ***Australian*** visitors to Mossman Gorge during this survey distribution phase. Of the Australian visitors, while the majority lived outside the Wet Tropics bioregion, nevertheless the number of ***local*** visitors had increased considerably and they were mainly from Cairns & district;
- ***Nonindigenous Australians*** were still the major ethnic group;
- The highest level of education achieved for the majority of visitors was ***Tertiary B - University***;
- The average age of visitors declined slightly to ***35years,*** with the majority in the ***20 – 29 age class***;
- More females than males participated in this survey.

Combined Seasonal Data & General Comments

For the combined data set, the visitor profile was as follows:

- The majority of visitors to Mossman Gorge were ***Australian (57.7%),*** which is higher than the 1993 Manidis Roberts results (35.9%). Of the overseas visitors, the majority came from the ***UK*** (35.6%) followed by ***USA*** (22.4%);
- Of the Australian visitors, the majority were ***national visitors (66%),*** i.e., living outside the Wet Tropics bioregion. There were significantly more local visitors in the April (wet) than September (dry season). Of the local visitors, ***49.2%*** came from ***Cairns & district***, 18% from ***Townsville & district***;
- Forty percent of visitors identified themselves as ***Nonindigenous Australians***.

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1. *This visitor profile suggests that Mossman Gorge is an important site for* ***overseas visitors*** *generally but an important* ***local use site in the wet season****, particularly for those residents of the* ***northern region*** of the WTWHA.
2. *It is also a site that is used most frequently by young people between 20-29 years of age.*
3. *Of the international visitors it is most popular with* ***English/UK*** *citizens and* ***Americans****.*

a) Background Information

QUESTIONS & RESULTS

1. Where do you live?

STAGE 1: (September/October 2001)						STAGE 2: (March/April 2002)					
n = 348						n* ***= 390***					
Australia	**58.9%**	n = 205				**Australia**	**56.7%**	n = 221			
Locals	n = 39	(20.9%)	(n = 187 responses)			Locals	n = 89	(48.10%)	(n = 185 responses)		
Cairns & District	n = 17	Mossman / Daintree	n = 1			Cairns & District	n = 46	Ingham	n = 1		
Mission Beach	n = 2	Tableland & District	n = 6			Innisfail	n = 2	Townsville & District	n = 20		
Innisfail	n = 2	Townsville & District	n = 3			Tableland & District	n = 6				
Gordonvale	n = 3	Large Coverage	n = 5			Gordonvale	n = 1				
Non-Locals	n = 148	(79.1%)				Non-Locals	n = 96	(51.90%)			
Overseas	**41.1%**		**n = 143**			**Overseas**	**43.3%**			**n = 169**	
Austria	n = 2	Hong Kong	n = 1	NewZealand	n = 9	PNG	3	Germany	14	Japan	1
Belgium	n = 1	Ireland	n = 5	Saudi Arabia	n = 1	NZ	8	Netherlands	7	China	4
Canada	n = 3	Italy	n = 2	South Africa	n = 1	USA	43	Norway	3	Singapore	1
Denmark	n = 1	Japan	n = 1	Sweden	n = 2	Canada	6	Switzerland	7	South Korea	2
France	n = 2	Kenya	n = 1	Switzerland	n = 3	UK	69	Denmark	2	Hong Kong	5
Germany	n = 24	Korea	n = 1	UK	n = 42	Ireland	5	Sweden	2		
Holland	n = 3	Netherlands	n = 3	USA	n = 27	Spain	3	Austria	1		

Comparative Data 1993: *Australian = 64.1% (Local = 32.1%);* *Overseas = 35.9%* *n = 209 (Independent Visitor Survey)*

2. How long have you lived there?

Period of Residence: ***n = 344***	Period of Residence: ***n = 374***
$\overline{X}$ **= 25.01 years ± SD 17.51 (range 0.2-73)**	$\overline{X}$ **= 25.25 years ± SD 18.55 (range 0-75)**
≤ 10 years = 25.6% > 10 years = 74.4%	≤ 10 years = 27.3% > 10 years = 72.7%

3. How would you describe your ethnic background?

n = 347				***n = 386***			
Nonindigenous Australian	**42.3%**	*German / European*	*0.3%*	**Nonindigenous Australian**	**36.0%**	*English & Scottish*	*0.5%*
Indigenous Australian	1.2%	*German / English*	*0.3%*	Indigenous Australian	1.6%	*English, Irish,Scottish &*	
American	8.3%	*French / Australian*	*0.3%*	American	12.2%	*Chinese*	*0.3%*
Canadian	1.2%	*Swiss / French*	*0.3%*	Canadian	2.3%	*Greek*	*1.3%*
Swedish	0.6%	*Italian / English*	*0.3%*	Swedish	0.5%	*Hungarian*	*0.3%*
Swiss	0.3%	*Chinese / Japanese*	*0.3%*	German	5.2%	*Indian*	*0.8%*
Scottish	2.3%	*Japanese*	*0.3%*	French	0.3%	*Japanese*	*0.3%*
German	8.3%	*English / Polish*	*0.3%*	Swiss	1.3%	*Japanese, Hawaiian &*	
French	0.6%	*English / Irish*	*0.3%*	Italian	1.6%	*Native American*	*0.3%*
Italian	1.2%	*English / Welsh*	*0.3%*	Chinese	0.8%	*Kiwi*	*0.3%*
Chinese	0.3%	*Irish / Lebanese*	*0.3%*	English	24.1%	*Lithuanian*	*0.3%*
English	18.1%	*New Caledonian*	*0.3%*	Irish	2.8%	*Maltese*	*0.5%*
Irish	1.7%	*NZ*	*1.2%*	Scottish	1.8%	*Polish*	*0.3%*
Malaysian	0.3%	*NZ / European*	*0.6%*	Malaysian	0.3%	*South African*	*0.5%*
		Polish	*0.3%*			*Spanish & Yucatan*	*0.3%*
Other	10.8%	*Russian*	*0.3%*	*Other*	*11.4%*	*Sri-Lankian*	*0.5%*
Indigenous / Non Indig	*0.3%*	*Welsh*	*0.6%*	*Austrian*	*0.3%*	*Trinidian*	*0.3%*
Non Indig / NZ Maori	*0.3%*	*Yugoslavia*	*0.3%*	*Basque*	*0.3%*	*Vietnam*	*0.8%*
Non Indig/Irish/Scottish	*0.6%*	*Austrian*	*0.6%*	*Cook Islander& Maori*	*0.3%*		
Non Indig/		*Belgian*	*0.3%*	*Croatian*	*0.3%*		
German/English/Scottish	*0.3%*	*Danish*	*0.3%*	*Danish*	*0.5%*		
Non Indig/Dutch/Chinese	*0.3%*	*Dutch*	*2.3%*	*Dutch*	*1.8%*		
		Greek	*0.6%*				
		Indian	*0.9%*				

4. What is the highest level of formal education you have completed so far?

n = 347		%	***n = 385***		
Primary	(1-8 years of education)	2.3%	Primary	(1-8 years of education)	2.3%
Secondary	(9-12 years of education)	25.4%	Secondary	(9-12 years of education)	30.4%
Tertiary A	(Technical or further educ institution)	22.5%	Tertiary A	(Tech or further educ institution)	23.4%
Tertiary B	(University)	**49.9%**	**Tertiary B**	(University)	**43.9%**

5. Age

n = 336	***n = 365***
$\overline{X}$ **= 36.75 years ± SD 13.52 (range 11-73)**	$\overline{X}$ **= 35.32 years ± SD 14.01 (range 10-75)**
Age Categories:	Age Categories:
< 20 years = 7.1% 40-49years = 23.2%	< 20 years = 8.8% 40-49years = 17.0%
20-29years = 30.0% 50-59 years = 14.3%	**20-29years = 33.1%** 50-59 years = 11.2%
30-39years = 20.0% > 60 years = 5.4%	30-39years = 22.7% > 60 years = 7.1%

Comparative Data 1993: *16-25 = 18.7%;* *26-45 = 51.1%;* *45-65 = 26.7%* *>65 = 0.5%* *n = 209*

6. Gender (***Comparative Data 1993:*** *Male = 62.2%;* *Female = 37.8%* *n = 209)*

n = 346 Male 46.2% Female 53.8%	***n = 386*** Female 56.2% Male 43.8%

b) Transport & Travel Group — *Key Findings*

Stage 1: September 2001 *Travel Profile*

During this first data collection stage,

- Almost one quarter of the respondents were with an ***organised tour (9 tours),*** which contained on average ***13.13 people per tour***;
- On average there were ***3.05 people*** in each of the 'independent' vehicles;
- The major group profile of people visiting the site was ***two adults who were not accompanied by children***;
- The majority of independent visitors travelled in ***private*** vehicles;
- The **most** important source of prior information about Mossman Gorge used by the visitors was "***word of mouth",*** followed by ***have been before & travel guide or book.*** Only a very small percentage of visitors used the web.

Stage 2: April 2002 *Travel Profile*

Only slight differences were evident in this second data collection stage.

- A slightly higher number of respondents were with an ***organised tour*** (14 tours), which contained on average 15.4 people per tour;
- There was an increase in the average number of people per independent vehicle to ***3.3***;
- The major group profile of people was again ***two adults***;
- The majority of independent visitors travelled in ***private*** vehicles;
- The **two most** important sources of prior information about Mossman Gorge were ***"word of mouth"*** *and* "***have been before"***. The information source least used was ***"from the web".***

Combined Seasonal Data & General Comments

For the combined data set, the visitor profile is as follows:

- One quarter of respondents were with ***organised tours*** (n = 737)***;***
- On average, there were ***3.17 people*** (n = 517) in each vehicle, which is higher than 1993 Manidis Roberts results (2.96, n = 209);
- Just over half of the visitors (54.5%, n = 505) travelled in ***privately owned*** vehicles, which is higher than 1993 Manidis Roberts results (47.9%, n = 209);
- "***Word of mouth"*** appeared to be the most important source of prior information about Mossman Gorge (35.4%, n = 734). The information source least used was ***"from the web"*** (2%, n = 734)***.***

1. *It is clear that most people know of the Mossman Gorge through* ***other people****. It is a site that also attracts* ***repeat visit by local residents****.*
2. *In addition to* ***very few visitors using the web*** *for information about this site* ***very few people used NQ information centres.***

b) Transport & Travel Group

QUESTIONS & RESULTS

7. Are you with an organised tour?

n = 348	Yes 22.1%	No 77.9%
Adventure Tour	n = 3	
Coral Coaches	n = 1	
Daintree River Train	n = 4	
Gary's Safaris	n = 10	
Grand Circle	n = 1	
Jungle Tours	n = 24	
Northern Delights	n = 1	
Suncoast Safaris	n = 11	
Trek North	n = 15	

n = 389	Yes 29.0%	No 71.0%
Adventure Company	n = 13	
Connections	n = 2	
Deluxe Safaris	n = 3	
Gary's Safaris	n = 4	
Grand Circle	n = 14	
Great Adventure Tours	n = 2	
Horizon	n = 1	
Jungle Tours	n = 17	
Reef & Hinterland	n = 1	
Suncoast Safaris	n = 16	
TACA	n = 1	
Trek North	n = 25	
Tropical Horizon	n = 4	
United Vacations	n = 1	

8. If you travelled in a private or hired vehicle, how many people including yourself are in your vehicle?

n = 260

People per Vehicle $\overline{X}$ = 3.05 ± SD 1.30 (range 1-8)

Adults per vehicle $\overline{X}$ = 2.56 (n = 666)

Children per vehicle $\overline{X}$ = 0.51 (n = 133)

Private vehicle 50.4% Hired Vehicle 49.6%

n = 257

People per Vehicle $\overline{X}$ = 3.30 ± SD 1.55 (range 1-12)

Adults per vehicle $\overline{X}$ = 2.60 (n=669)

Children per vehicle $\overline{X}$ = 0.69 (n =179)

Private vehicle 58.6% Hired Vehicle 41.4%

Comparative Data 1993: *People per vehicle = 2.96* *n = 209*
Private vehicle = 47.9%; Hired vehicle = 34.0%; Commercial = 15.3%; Other = 2.8%

9. How did you obtain prior information about this site?

n = 346	n	%
Have been here before	72	*20.8%*
Road sign	30	*8.7%*
Word of mouth	142	***41.0%***
Map which said it was a tourist site	37	*10.7%*
Tourist information centre in Nth Qld	25	*7.2%*
Tourist information centre	19	*5.5%*
Tourist leaflet	33	*9.5%*
Travel guide or book	67	*19.4%*
From the web	7	*2.0%*
Trip included in a package tour	25	*7.2%*
Other	15	*4.3%*
Local / Came with locals	2	*0.6%*
Came with family / friends	4	*1.2%*
Travel Agent	5	*1.4%*
Hotel / Hostel recommendation	3	*0.9%*
Taxi driver	1	*0.3%*

Specify:
Tourist inform centre:
Tourist leaflet: *APT, Daintree tours/trips, Jungle Tours, Port Douglas booklet;*
Travel guide or book : *Lonely Planet, Mondadori Edition, Natural Geographic, RACQ;*

n = 388	n	%
Have been here before	111	28.6%
Road sign	34	8.8%
Word of mouth	118	**30.4%**
Map which said it was a tourist site	26	6.7%
Tourist information centre in North Queensland	25	6.4%
Tourist inform	17	4.4%
Tourist leaflet	34	8.8%
Travel guide or book	58	14.9%
From the web	8	2.1%
The trip here was included in a package tour	53	13.7%
Other	29	*7.4%*
Friends	13	*3.3%*
Car rental company	2	*0.5%*
Hotel recommendation	2	*0.5%*
Work	2	*0.5%*

Specify:
Tourist inform centre: *Babinda*
Tourist leaflet: *Atherton Tableland Map, Innisfail and Mission Beach*
Travel guide or book : *Lonely Planet*

c) Reasons for Visiting ***Key Findings***

Stage 1: September 2001

During this first data collection stage,

- The most important reasons given for why people visit Mossman Gorge were ***experiential***, followed by *activity*-based reasons. *Educational* reasons were least important;
- To ***see the natural features and scenery*** was the most important reason given with ***61%*** of visitors rating this as ***very important***;
- This was followed by three other experiential reason - ***be close to/experience nature, experience the Wet Tropics,*** and, closely linked to these two, ***experience tranquillity***;
- Activity-based reasons were rated moderately important to important. Of these, ***opportunities for short walks*** rated the highest;
- Educational reasons were just slightly important.

Stage 2: April 2002

During this second data collection stage, slight differences in responses were evident.

- The most important reasons for why people visit Mossman Gorge were again ***experiential***, followed by activity-based reasons. Educational reasons were least important.
- To ***see the natural features and scenery*** was the most important reason given;
- This was followed by two other experiential reason - ***be close to/experience nature*** and ***experience the Wet Tropics;***
- Activity-based reasons were rated moderately important to important. Of these, ***opportunities for short walks*** again rated the highest;
- Educational reasons were between slightly important and important.

Combined Seasonal Data & General Comments

- The most important reason given for visiting the site was ***see natural features & scenery.*** Visitors rated the experiential reasons ***significantly higher*** than activity reasons [t(716) = 24.02; p = 0.00];
- Visitors rated the two educational reasons ***significantly lower*** than experiential [t(712) = -28.24; p = 0.00], and activity reasons [t(709) = -8.26; p = 0.00].

1. *The primary reasons given for people visiting Mossman Gorge were to* ***see the natural features*** *of the site and to* ***be close to/experience nature****.*
2. *Clearly activity-based reasons were secondary for most people.*
3. *Learning about the natural and cultural features of the site does not appear to be why people visit this site.*

c) Reasons for Visiting

QUESTIONS & RESULTS

10. We would like to know how important the following <u>reasons</u> were for you visiting this site today.

1 = Not important **2 = Slightly important** **3 = Moderately important**
4 = Important **5 = Quite important** **6 = Very important**

	n	Not Important 1	2	3	4	5	Very Important 6	$\overline{X}$ *
a) Learn about native animals and plants *(Educational)*	338	13.3%	16.9%	26.0%	19.5%	10.9%	13.3%	*3.38*
	373	14.5%	12.6%	25.5%	21.2%	13.1%	13.1%	*3.45*
b) Learn about Aboriginal culture *(Educational)*	330	25.5%	22.7%	24.8%	15.2%	5.5%	6.4%	*2.72*
	365	26.6%	21.6%	16.4%	15.9%	11.8%	7.7%	*2.88*
c) See natural features and scenery *(Experiential)*	344	0.9%	0.3%	3.2%	9.3%	25.0%	**61.3%**	***5.41***
	380	2.1%	0.8%	6.1%	14.7%	26.8%	49.5%	***5.12***
d) Be close to/experience nature *(Experiential)*	337	2.1%	1.5%	10.1%	14.2%	29.4%	42.7%	*4.96*
	368	2.4%	4.1%	8.7%	16.0%	27.7%	41.0%	*4.86*
e) Socialise with family/friends *(Experiential)*	338	22.5%	12.7%	15.1%	13.6%	15.7%	20.4%	*3.49*
	362	22.4%	11.9%	11.3%	14.4%	15.2%	24.9%	*3.63*
f) Rest and relax *(Experiential)*	342	7.9%	8.2%	16.7%	16.7%	23.7%	26.9%	*4.21*
	372	8.9%	7.5%	13.4%	14.5%	20.2%	35.5%	*4.36*
g) Experience tranquility *(Experiential)*	334	1.5%	5.4%	13.8%	20.7%	26.0%	32.6%	*4.62*
	367	4.1%	6.3%	12.5%	14.7%	25.3%	37.1%	*4.62*
h) Experience the Wet Tropics *(Experiential)*	342	2.3%	2.6%	6.1%	16.1%	33.6%	39.2%	*4.94*
	370	4.6%	2.4%	11.1%	18.1%	28.1%	35.7%	*4.70*
i) Outdoor exercise *(Activity)*	335	9.3%	15.2%	19.4%	21.8%	18.2%	16.1%	*3.73*
	371	11.1%	12.4%	17.3%	22.1%	19.7%	17.5%	*3.80*
j) Opportunities for short walks *(Activity)*	339	5.9%	11.8%	18.0%	24.8%	22.1%	17.4%	*3.98*
	368	11.1%	10.9%	14.4%	21.2%	23.4%	19.0%	*3.92*
k) Opportunities for long walks *(Activity)*	329	21.9%	20.7%	19.1%	13.1%	14.6%	10.6%	*3.10*
	354	22.9%	19.8%	20.1%	12.7%	13.0%	11.6%	*3.08*
l) Other	337	0.9%	0.0%	0.9%	1.5%	1.8%	6.2%	***N/A 88.7%***
	380	3.2%	0.3%	0.5%	2.1%	2.1%	8.2%	***N/A 83.7%***

Specify other reasons:

*Reasons provided have been placed into three major categories. Those that are related to **activity, experience, education.** The fourth category is **"other"**.*

	Activity:	n	Experiential:	n	Educational:	n
28	Go swimming	10	Enjoy / Experience		Learn about nature	2
	Rest / Relax	1	nature	5	Show friend from down	
	Have fun	3	New experience	1	south	1
	Have lunch	1(1)			Other:	
	To film / photograph	3			Cute Tour guides	1

	Activity:	n		n	Educational:	n
42	Swimming	19	Have good		Info on the gorge	1
	Snorkeling	1	experience	1	See a heritage site	1
	Photography	2	Jeannie Baker's bk	1	See vanishing forest	1
	Work duties	1	Motorbike ride	1	See an ancient forest	1
	Experiential:		Quality of living	1	Other:	
	Being with family	1	Rockpools	1	See how it has changed	2
	Bliss out	1	See something new	1	Sticky beak	1
			Spiritual energy	1	Friends wanted to stop	1
			See things not of UK	1		

$\overline{X}$ = The mean of the categories are presented despite this being ordinal data and the precautions necessary in interpreting this data.

d) Natural Environment — *Key Findings*

Stage 1: September 2001 *Visitor Appraisal*

During this first data collection stage,

- Overall, ***visitor appraisal*** of the positive aspects of the natural environment at Mossman Gorge was ***high***;
- In particular, the majority of visitors found the natural environment to be ***interesting, appealing*** and in ***good condition***;
- Over ***80%*** of visitors ***somewhat to strongly agreed*** that the natural environment was ***well managed***;
- While 70% of visitors indicated ***some level of concern*** about the ***impacts of human activity*** on the natural environment at Mossman Gorge, the majority of visitors did not consider the site to be disturbed or impacted;
- Few visitors were expecting other natural features at the site.

Stage 2: April 2002 *Visitor Appraisal*

During this second data collection stage, only slight differences in some responses were evident.

- Again, ***visitor appraisal*** of the positive aspects of the natural environment was ***high***;
- The majority of visitors (51.5%) ***strongly agreed*** that Mossman Gorge was ***interesting***;
- In terms of the condition of the natural environment, ***83% somewhat to strongly agreed*** that it appeared to be ***good***;
- Over ***80%*** of visitors ***somewhat to strongly agreed*** that the natural environment was ***well managed***;
- Visitors were again ***slightly concerned*** about the ***impacts of human activity*** on the natural environment, but, did not consider the site to be disturbed or impacted.

Combined Seasonal Data & General Comments

For the combined data set,

- Aspects of the natural environment that were most highly rated were the ***interest factor ($\overline{X}$ = 5.33),*** ***condition ($\overline{X}$ = 5.27),*** and ***appeal of natural attractions and scenic beauty ($\overline{X}$ = 5.30).***
- Few visitors *(16.9%)* appeared to have any particular expectations of what they would find or encounter.

1. *These results suggest that, overall, visitors find the natural features of* ***Mossman Gorge to be interesting, appealing,*** *and in* ***good condition.***

2. *Of the natural features that the small number of visitors reported expecting to find at* ***Mossman Gorge*** *but were unable to, most were* ***fauna-related****.*

d) Natural Environment

QUESTIONS & RESULTS

11. The following statements are about the natural features of this site. Please rate the extent to which you agree or disagree with each statement by circling the number that best reflects your level of agreement /disagreement.

1 = Strongly Disagree 2 = Somewhat Disagree 3 = Mildly Disagree
4 = Mildly Agree 5 = Somewhat Agree 6 = Strongly Agree

		n	Strongly Disagree 1	2	3	4	5	Strongly Agree 6	$\bar{X}$ *
a)	The natural environment at this site is interesting.	348	0.0%	0.0%	1.7%	12.1%	31.3%	**54.9%**	***5.39***
		388	0.0%	0.5%	3.4%	16.2%	28.4%	**51.5%**	***5.27***
b)	I would like to spend more time exploring this natural environment.	345	0.3%	1.7%	8.1%	24.9%	31.3%	33.6%	*4.86*
		387	1.8%	2.3%	10.9%	22.0%	23.8%	39.3%	*4.81*
c)	In terms of natural attractions and scenic beauty this site is appealing.	346	0.0%	0.0%	1.2%	13.6%	35.3%	**50.0%**	***5.34***
		383	0.3%	0.5%	2.1%	17.0%	30.3%	49.9%	***5.26***
d)	The condition of the natural environment at this site appears to be good.	347	0.0%	0.0%	1.7%	11.5%	43.5%	43.2%	***5.28***
		384	0.0%	0.5%	2.1%	13.8%	37.2%	46.4%	***5.27***
e)	The natural environment at this site is well managed.	344	0.3%	0.0%	1.7%	16.6%	44.2%	37.2%	***5.16***
		384	0.0%	1.6%	3.9%	19.0%	36.5%	39.1%	***5.08***
f)	I am concerned about the impacts of human activity on the natural environment at this site.	342	4.7%	9.1%	14.9%	26.6%	18.4%	26.3%	*4.24*
		383	5.7%	8.9%	14.6%	23.2%	18.5%	29.0%	*4.27*
g)	This site appears to be disturbed and impacted.	341	17.6%	30.8%	21.4%	18.2%	8.5%	3.5%	*2.80*
		381	20.7%	27.6%	19.4%	16.3%	9.2%	6.8%	*2.86*

12. At this site were there any natural features you were expecting to find which were not present?

n = 337	Yes 18.7%	No 81.3%	***n = 368***	Yes 15.2%	No 84.8%

If yes, please specify:

*Responses provided have been placed into three major categories. Those related to **natural/biological** features, **natural/physical** features, and the **built/structural** features of the environment.*

	Natural/Biological:	n	Natural/Physical	n	Built/Structural	n
61	Flora	3	More rapids / falls	6		
	Wildlife	21	Gorge	5		
	Butterflies	4 (1)	Rock slide	2		
	Birds (eg. Cassowary)	10				
	Kangaroos	4				
	Snakes & Lizards	5				
	Cat fish	1				
44	Natural/Biological:	n	Natural/Physical	n	Built/Structural	n
	Birds	8(1)	Higher waterfall	5(1)	Guide & info on	
	Cassowary	1	More water	2(3)	plants	1
	Perch	1	More wetlands	1	Info on gorge	2
	Snakes	2(1)	Env. unaffected by		Lookout	1
	Spiders	1	pigs	1	More paths	1
	Wildlife	12	Larger gorge	2(1)	Tap & shower	1
	Giant stinging trees	1	Rain	1		

e) Time Spent and Activities — *Key Findings*

Stage 1: September 2001 *Activity Profile*

During this first data collection stage,

- The majority of visitors, ***62.8%***, spent between ***one and two hours*** at the site;
- Besides ***observing scenery***, the activity most visitors engaged in was taking the ***short walk;***
- ***Photography*** was also an activity quite a number of people engaged in;
- Of those visitors who would have liked to engage in other activities but were unable to, ***swimming*** was the most frequently identified.

Stage 2: April 2002 *Activity Profile*

During this second data collection stage, the responses changed slightly.

- Again, the majority of visitors, ***60%,*** spent between ***one and two hours*** at the site;
- Besides ***observing scenery***, most visitors took the ***short walk***;
- ***Photography and swimming*** were also a popular activities with over a third of the visitors;
- Of those visitors who would have liked to engage in other activities, ***swimming*** was the most frequently identified.

Combined Seasonal Data & General Comments

1. *These results suggest that, overall, visitors spend enough time at Mossman Gorge to do the short walk, take some photos and have a swim.*
2. *Very few visitors use the site for picnics (10.5%), or spend time looking at the interpretative material (14.3%).*

e) Time Spent and Activities

QUESTIONS & RESULTS

13. How long have you spent at this site today?

n = 344	%		%	***n = 387***	%		%
less than 1/2 hour	6.4%	About 3 hours	6.1%	less than 1/2 hour	6.5%	About 3 hours	7.2%
About 1/2 hour	20.9%	About 4 hours	2.6%	About 1/2 hour	22.2%	About 4 hours	2.3%
About 1 hour	**34.6%**	More than 4 hours	1.2%	**About 1 hour**	**33.3%**	More than 4 hours	2.1%
About 2 hours	28.2%			About 2 hours	26.4%		

Comparative Data 1993: *<1/2 hr = 4.8%, _-<1 hr = 43.1%, 1-<2hrs = 44.5%; 2-<4hrs = 5.7%, n = 209*

14. What activities did you engage in at this site today?

	n = 344		*n = 383*	
Activities:	**%**	Activities:	%	
Observing scenery	**87.5%**	**Observing scenery**	**85.4%**	
Bird watching	20.6%	Bird watching	17.0%	
Observe other wildlife	35.2%	Observe other wildlife	30.3%	
Photography/painting/drawing	52.0%	Photography/painting/drawing	38.6%	
Picnic/barbeque	12.8%	Picnic/barbeque	8.4%	
Using café/restaurant	0.0%	Using café/restaurant	0%	
Camping	0.0%	Camping	0.5%	
Walking – Short (1 hr or less)	**71.8%**	**Walking – Short (1 hr or less)**	**67.9%**	
Walking – Long (1-6 hours)	16.9%	Walking – Long (1-6 hours)	8.6%	
Swimming	25.9%	Swimming	37.9%	
Guided tour	15.1%	Guided tour	21.4%	
Looking at interpretation material	20.3%	Looking at interpretation material	8.9%	
Relaxing	40.7%	Relaxing	38.6%	
Other	2.9%	*Other*	*0.9%*	
		Answering survey	*0.3%*	
		Paddling	*0.3%*	
		Snorkelling	*0.3%*	

Comparative Data 1993: *Swimming = 53.8%; Walking (long) = 6.2%; Walking(short) = 54.1%; Photography = 27.2%; Picnic/BBQ = 4.8%; n = 209*

15. Were there particular things you wanted to do at this site which you were unable to do?

n = 302 Yes 13.2% No 86.8% | N = 312 Yes = 15.1% No = 84.9%

If yes, please specify:

Responses provided have been placed into five major categories. Those activities related to ***natural, built, or social*** *environment, and* ***rules/regulations****.*

n = 32	n		n		n
Natural Environ		Built Environ		Social Environ	
Bush walking	2	Disabled: couldn't do the		Barbeque	1
Longer walk	3	walk	1(1)	Eat Lunch	1
Explore environment		Learn more about flora		Experience	
& w'life	7	& fauna	1	tranquility / relax	2
Swim	10	Location map - toilets	1		
				Rules/regulation	
				Camp	2
				Fishing	1

n = 48	n		n		n
Natural Environ		Built Environ		Social Environ	
Swim	6(6)	Boat cruise	1	Time restrictions	9(2)
More access to creek	1	Boat hire	2	Play monopoly	1
Walk	2	A toilet on the 6km walk	1	Buy refreshments	2
Long walk	3	Track was too steep	1	Café	4
See animals	2	Easier access: disability	1	Have a shower	3(1)
Relax & enjoy		More lookouts	1	Use a tap	1(1)
beautiful surrounds	2(1)	Swing off tarzan rope	1		
View the gorge	1(1)	Info on natural history	1	Rules/regulation	
				Pig shooting	1

f) Information ***Key Findings***

Stage 1: September 2001 *Information/Signage Use*

During this first data collection stage,

- While most visitors agreed that ***directional signage*** was easy to locate, slightly fewer agreed that such signage enabled them to find their way round Mossman Gorge;
- The majority of visitors were able to ***determine*** the ***rules and regulations*** and clearly identify what was ***acceptable activity***;
- While most visitors agreed that ***safety*** information was ***easy to locate*** and was ***understandable,*** of concern are those who disagreed, 16.7% and 12.2% respectively;
- On the whole visitor assessment of the ***natural / ecological*** information was lower than the other information types. This information was very limited to the general information signage;
- Indigenous cultural information was absent from Mossman Gorge.

Stage 2: April 2002 *Information/Signage Use*

During this second data collection stage, visitor assessment of all information was lower.

- Visitor assessment of the ***directional signage*** at Mossman Gorge was slightly lower for this data collection stage compared to the first. Such signage was less easy to locate;
- Overall, visitor assessment of the ***rules and regulations*** at Mossman Gorge was slightly higher for this data collection stage compared to the first;
- Visitor assessment of ***safety*** information was also lower for this data collection stage compared to the first;
- Visitor assessment of the ***natural / ecological*** information was slightly higher for this data collection stage compared to the first.

Combined Seasonal Data & General Comments

- While overall visitors found the maps at Mossman Gorge reasonably easy to locate ($\overline{X}$ = 4.67), wayfinding ability as determined by presentation of information on the maps did not receive as high an assessment ($\overline{X}$ = 4.55);
- While most visitors agreed that ***rules and regulations*** at Mossman Gorge were easy to determine and enabled them to identify acceptable activity, there is a concern about the 107 and 117 visitors respectively (17-19%) who disagreed;
- Also of concern are the ***122*** visitors (19%) who disagreed that ***safety*** information was ***easily located*** and the ***96*** visitors (16%) who disagreed that what was available was ***easy to understand***;
- The ***natural/ecological*** information received the lowest assessment of all other information types.

f) Information

QUESTIONS & RESULTS

16. Did you refer to any of the information available at this site today?	Yes	54.8%	No	45.2%	n = 334
	Yes	39.3%	No	60.7%	n = 364

17. Please rate the extent to which you agree or disagree with the following statements about <u>information</u> that may be available at this site by circling one number.

All of the signs from (a) to (d) were present at Mossman Gorge (see Section 2 for details).	n	**Strongly Disagree** 1	2	3	4	5	**Strongly Agree** 6	$\overline{X}$
a) The **maps** and **directions** at this site: *i)* were easy to **locate**	298	2.3%	3.4%	10.4%	19.5%	32.6%	31.9%	***4.72***
	319	4.4%	6.0%	9.4%	18.2%	27.0%	35.1%	***4.63***
ii) helped me to **find** my way round	289	3.8%	6.2%	9.0%	21.8%	30.1%	29.1%	***4.55***
	300	5.7%	7.0%	8.3%	19.0%	26.7%	33.3%	*4.54*
b) The **rules and regulations** at this site: *i)* were easy to **determine**	303	2.0%	5.0%	9.6%	19.1%	31.7%	32.7%	*4.72*
	332	1.5%	5.1%	10.5%	19.9%	27.1%	35.8%	*4.73*
ii) enabled me to **clearly identify** acceptable activities	298	2.7%	5.7%	10.1%	17.4%	33.6%	30.5%	*4.65*
	317	1.6%	5.7%	12.3%	18.0%	27.8%	34.7%	*4.69*
c) The **safety information** at this site: *i)* was easy to **locate**	312	2.2%	4.2%	10.3%	18.6%	31.1%	33.7%	*4.73*
	331	3.0%	5.4%	12.7%	17.2%	25.7%	36.0%	*4.65*
ii) was easy to **understand**	305	2.3%	3.0%	6.9%	18.0%	34.8%	35.1%	*4.85*
	313	2.2%	4.8%	11.8%	16.0%	27.5%	37.7%	*4.75*
d) The **natural/ecological information** at this site: *i)* was **interesting**	294	4.8%	3.7%	10.2%	26.9%	27.6%	26.9%	***4.49***
	323	2.2%	5.9%	11.1%	27.2%	25.1%	28.5%	***4.53***
ii) was clearly **presented**	285	4.6%	5.3%	10.5%	27.0%	27.7%	24.9%	***4.43***
	313	3.2%	5.8%	13.7%	24.9%	26.8%	25.6%	***4.43***
iii) helped me better **understand** the ecological processes of this area	286	5.6%	6.3%	12.9%	28.3%	25.9%	21.0%	***4.26***
	313	4.2%	6.4%	15.0%	25.6%	22.7%	26.2%	***4.35***
f) The **indigenous cultural information** at this site: *i)* was **interesting**	***No indigenous information available at this site***							
ii) was clearly **presented**								
ii) helped me to **understand** the significance of this area for indigenous Australians								

g) Site Facilities & Management Issues ***Key Findings***

Stage 1: September 2001 *Visitor Appraisal*

During this first data collection stage,

- The ***walking track***s at Mossman Gorge were the ***most frequently*** used of all facilities present. Most visitors also used the viewing platforms/lookouts.
- The overall ***condition*** of facilities was rated the highest followed by their ***adequacy***;
- The appeal and management of facilities was rated slightly lower;
- Over half the visitors (77.7%) ***agreed*** that the presence of a ***ranger*** was important;
- Of those who did agree to the ranger's presence, the reasons most frequently identified were0 to ***provide information/education*** and ***answer questions***.

Stage 2: April 2002 *Visitor Appraisal*

During this second data collection stage, visitor appraisal of facilities varied slightly.

- The ***walking track*** was again the ***most frequently*** used of all facilities present. The most frequently requested additional facility was ***café/kiosk***;
- The overall ***condition*** and ***appeal*** of facilities were rated highest followed by their management;
- The adequacy of facilities was rated lower compared to the first data collection period***;***
- The majority of visitors (77%) ***agreed*** that the presence of a ***ranger*** was important;
- The reason most frequently identified was for ***safety & security.***

Combined Seasonal Data & General Comments

- The ***walking track*** was the facility used by the majority of visitors (85%);
- The facility most often requested but not available at Mossman gorge was ***a café/kiosk;***
- ***Condition of facilities*** received the highest rating ($\overline{X}$ = 4.92), with 71.9% of visitors somewhat and strongly agreeing that the condition was good;
- Of the 77.4% of visitors for whom the presence of a ranger was important, the majority identified ***providing information/education*** and ***safety & security*** as the reasons.

1. *The **walking track** was the most used facility at this site.*
2. *Overall, visitors were satisfied with the **condition of facilities** at Mossman Gorge.*

g) Site Facilities & Management Issues

QUESTIONS & RESULTS

19. What facilities have you used at this site today?

n = 336	%		%	*n = 370*	%		%
Picnic table	42.3%	**Walking track**	**86.6%**	Picnic table	30.4%	**Walking track**	**83.8%**
Shelter shed	0.6%	Boardwalk	41.7%	Shelter shed	1.6%	Boardwalk	32.7%
Restaurant/café	0.6%	**Viewing platform/lookout**	**70.8%**	Restaurant/café	2.2%	**Viewing platform/lookout**	**58.6%**
Rubbish bin	22.3%	Fire place	0.6%	Rubbish bin	20.5%	Fire place	1.6%
Toilet	45.8%	Barbeque	0.6%	Toilet/showers	37.6%	Barbeque	0.5%
Tap	7.7%	Other (bridge, car park,seats on tracks, grass in shade)	6.0%	Tap	7.3%	Other (carpark, rocks, river)	3.5%

Comparative Data 1993: *Walking track = 89.7%; toilet = 39.7%; picnic table = 12.0%; Tap = 20.7%; viewing platform from lookout = 86.2%; rubbish bin = 8.6%. grassed area = 5.2%* *n = 58*

20. Were there particular facilities at this site you were expecting to find which were not available?

n = 295	Yes	3.7%	No	96.3%	*n = 306*	Yes	9.2%	No	90.8%

If yes, please specify:

n = 11	n		n	*n = 18*	n		n
BBQ	2	More car parks	1	BBQ	1	Soap	1
Cafe	2	More info on Indigenous		Better viewing platform	1	The elusive cassowary	1
Camping facilities	1	culture & environment	1	Café/kiosk	6	Toilets and bins at	
Drinking fountain / taps	2	More tables	1	Leaflet/maps	1	swimming area	1
		Shelter Shed	1	Plant & animal information	1	Bins	1
				Shower & tap	2	Water fountain	2

21. Please rate the extent to which you agree or disagree with each of the following statement about the facilities and management at this site by circling one number for each statement.

	n	**Strongly Disagree** 1	2	3	4	5	**Strongly Agree** 6	$\overline{X}$
a) This site is **appealing** in terms of the character and attractiveness of the facilities.	333	0.6%	1.8%	6.0%	26.1%	33.0%	32.4%	*4.86*
	370	1.9%	1.1%	7.3%	22.7%	31.1%	35.9%	*4.88*
b) The facilities at this site are **adequate.**	334	0.3%	2.1%	4.2%	24.6%	39.2%	29.6%	*4.89*
	371	0.8%	2.2%	6.5%	25.9%	36.7%	28.0%	*4.80*
c) The overall **condition** of the facilities at this site appears to be good.	331	0.6%	0.9%	2.7%	22.7%	43.2%	29.9%	*4.97*
	372	0.8%	1.1%	6.2%	21.2%	42.7%	28.0%	*4.88*
d) The facilities and infrastructure at this site are **well managed**.	332	1.2%	0.6%	5.1%	24.7%	40.4%	28.0%	*4.86*
	366	1.4%	1.6%	4.4%	26.8%	38.8%	27.0%	*4.81*
e) The presence of a **ranger** at sites like this is important to me.	332	4.8%	6.3%	11.1%	22.9%	26.2%	28.6%	*4.45*
	370	6.5%	7.6%	8.9%	20.8%	23.0%	33.2%	*4.46*

22. If you agreed the presence of a ranger was important, what are the reasons for this?

n = 325	n	%	*n = 352*	n	%
To provide information/education	198	**60.9%**	**To provide information/education**	201	**57.1%**
To answer questions	188	**57.8%**	To answer questions	172	48.9%
To take us on guided walks	70	21.5%	To take us on guided walks	66	18.8%
For safety/security	154	47.4%	**For safety/security**	213	**60.5%**
To give directions	98	30.2%	To give directions	114	32.4%
For lodging complaints about other behaviour	56	17.2%	For lodging complaints about other behaviour	54	15.3%
For site maintenance	145	44.6%	For site maintenance	156	44.3%
Other			Other		
To ensure no damage to site by guests	4	1.2%	Crowd Control	1	0.3%
First Aid	1	0.3%	Enforcement of rules	2	0.6%
Conveys a message that the area is being looked after	3	0.9%	Stop vandalism / damage	4	1.1%

g) Site Facilities & Management Issues Cont'd *Key Findings*

Stage 1: September 2001

During this first data collection stage,

- Just over a third of visitors identified Mossman Gorge as having special significance. The most frequent unprompted response was because of its ***Aboriginal and World Heritage status***;
- The majority of visitors (69%) either ***did not know*** or ***answered incorrectly*** as to who the management agency responsible for Mossman Gorge was;
- Of those who did identify an agency only ***31% identified National Parks*** (in its various formats) as the management agency, ***1.5% identified Wet Tropics/World Heritage***;
- When provided with a choice, ***most visitors*** labelled Mossman Gorge a ***National Park – 47.7%*** and ***18.6%*** identified it as a ***National Park and World Heritage Area;***
- Most visitors preferred sites with ***limited facilities***.

Stage 2: April 2002

During this second data collection stage, visitor responses changed slightly.

- Just over a quarter of visitors considered Mossman Gorge to have special significance. The most frequent unprompted response was because it was ***a World Heritage Area;***
- Again the majority of visitors (75.2%%) ***did not know*** or ***answered incorrectly*** as who the management agency responsible for Mossman Gorge was;
- Of those who did identify an agency, ***24.8 %*** identified ***National Parks*** (with its various labels) as the management agency, ***0.6%*** identified ***WTMA***;
- When provided with a choice, ***most visitors*** labelled Mossman Gorge a ***National Park (42.1%)***, and ***19%*** identified it as a ***National Park and World Heritage Area;***
- Again, most visitors preferred sites with ***limited facilities***.

Combined Seasonal Data & General Comments

- The majority of visitors (87%) either ***did not know*** or provided an ***incorrect answer*** when asked who manages Mossman Gorge;
- When given a choice 44.5% believed the site to be managed by ***National Parks***.
- Only 20.7% of visitors identified Mossman Gorge as a World Heritage Area.

1. *Visitors remain unfamiliar with the agency responsible for managing this site.*
2. *The World Heritage status is also not known by the majority of visitors.*
3. *These results clearly suggest that the role of different land management agencies is not understood by the general public.*

g) Site Facilities & Management Issues cont'd

QUESTIONS & RESULTS

23. Does this area you have visited today have any special status or significance that you are aware of ?

n = 321	Yes	33.3%	No	66.7%	***n = 350***	Yes	27.1%	No	72.9%

If yes, please specify:

n = 93	n		n	***n = 64***	n		n
Aboriginal heritage	23	Protected	6	Aboriginal heritage	8(4)	Flora/Fauna protection	2
The age of the rainforest	3	The rainforest	11	Historical value	6	Ancient forest	1
Beautiful to see	5 (1)	Water supply	1	National Park	11(1)	Availability for logging	1
Recreational site	1	Tourism	2	World Heritage	14(3)	Scientific value	4(2)
Ecological reasons	1	History	1	Wet Tropics	1(1)	Swinging bridge	1
National Park	20			Natural habitat	10	Geological value	1
World Heritage	19 (4)			Daintree NP	2	Sentimental value	2

24. What agency or department do you think manages this site?

n = 323	n	%	***n = 361***	n	%
Management Agency or Department:			**Management Agency or Department:**		
National Parks/Parks & Wildlife/QPWS	**98**	**30.3%**	**National Parks/Parks & Wildlife/QPWS**	**82**	**22.7%**
Federal Government	11	3.4%	DNR	10	2.8%
DNR	7	2.2%	Kuku Yalangi Aboriginal Group	8	2.2%
Forestry	6	1.8%	Government	7	1.9%
Department of conservation	5	1.5%	City / Local Council	7	1.9%
Local Council	5	1.5%	Department of Wildlife	4	1.1%
Wet Tropics / World Heritage	5	1.5%	Management Agency	3	0.8%
Kuku Yalangi Aboriginal Group	4	1.2%	Tropical Queensland	3	0.8%
EPA	2	0.6%	Forestry	3	0.8%
Daintree NP	2	0.6%	World Heritage	2	0.6%
Environment	2	0.6%	WTMA	2	0.6%
State Government	2	0.6%	Department	2	0.6%
Daintree Council	1	0.3%	Tourism	1	0.3%
Department of Environment	1	0.3%	Environment	1	0.3%
National Trust	1	0.3%	Rainforest CRC	1	0.3%
Ranger	1	0.3%	Department of environment	1	0.3%
Volunteers	1	0.3%	Department of conservation	1	0.3%
Unanswered /Don't Know	**169**	**52.3%**	**Unanswered /Don't Know**	**223**	**61.8%**

25. Which of the following labels applies to this site?

n = 333	%		%	***n = 363***	%		%
National Park (NP)	**47.7%**	NP & WHA	18.6%	**National Park (NP)**	**42.1%**	NP & WHA	19.0%
State Forestry (SF)	1.8%	NP & SF	0.9%	State Forestry (SF)	2.5%	NP & SF	1.4%
World Heritage Area (WHA)	21.0%	SF & WHA	0.0%	World Heritage Area (WHA)	20.4%	SF & WHA	0.0%
Don't know	8.7%	NP, SF, WHA	1.2%	Don't know	11.6%	NP, SF, WHA	3.0%

26. Which of the following natural areas do you most prefer visiting?

n = 340	%	***n = 365***	%
Natural area with:		**Natural area with:**	
no facilities (eg. no toilets, no designated camp ground)	2.1%	no facilities (eg. no toilets, no designated camp ground)	3.3%
few facilities (eg. rough walking tracks)	11.2%	few facilities (eg. rough walking tracks)	14.0%
limited facilities (eg. walking tracks evident , some directional signage)	**37.4%**	**limited facilities** (eg. walking tracks evident , some directional signage)	**32.6%**
fairly well developed facilities (eg. well marked tracks, extensive signage)	29.7%	**fairly well developed facilities** (eg. well marked tracks, extensive signage)	**31.8%**
very well developed facilities (eg. camp grounds, visitor centre)	15.0%	very well developed facilities (eg. camp grounds, visitor centre)	13.4%
don't know/don't care	4.7%	don't know/don't care	4.9%

h) Other Visitors & Experience *Key Findings*

Stage 1: September 2001

During this first data collection stage,

- Just on half of the visitors ***agreed*** that there were ***too many other people*** at Mossman Gorge;
- Despite this most visitors ***did not feel*** that the people who were there ***impacted on their own behaviour or experience*** of the site;
- Most visitors agreed that other visitors at the site were on the whole environmentally responsible;
- In terms of their experience of Mossman Gorge, visitors rated their ***enjoyment*** of the site ***highest*** with over a third strongly disagreeing that there were disappointing aspects;
- Most visitors ***mildly to somewhat agreed*** that their visit had been a ***special experience***.

Stage 2: April 2002

During this second data collection stage, visitor responses were higher on all items.

- While most visitors ***did not think*** there were ***too many people*** at Mossman Gorge, nevertheless 46% found the place crowded;
- Most visitors ***did not feel*** that the people who were at Mossman Gorge ***impacted on their own behaviour or experience*** of the site;
- The majority of visitors agreed that other visitors were on the whole environmentally responsible;
- Visitors rated their ***enjoyment*** of the site ***highest*** and many (81%)strongly disagreed that there were disappointing aspects;
- Most visitors ***mildly to somewhat agreed*** that their visit was a ***special experience***.

Combined Seasonal Data & General Comments

- While the majority of visitors were not concerned about the number, presence or behaviour of people at Mossman Gorge, nevertheless just under half (48%) agreed that the place was crowded, and 23% thought people were environmentally irresponsible in their behaviour;
- Visitor experience of the site was highest in terms of ***enjoyment*** and ***worth the money.***

1. *Experienced **crowding,** as measured by number, presence and behaviour of others, is a problem at Mossman Gorge.*
2. *Reported visitor **satisfaction**, as measured by enjoyment and worth the money, was moderately high.*

h) Other visitors

QUESTIONS & RESULTS

27. The following statements are about <u>other visitors</u> at this site today. Please rate how strongly you agree or disagree with each statement by circling one number for each statement.

	n	Strongly Disagree 1	2	3	4	5	Strongly Agree 6	$\overline{X}$
a) There were too many people at this site today.	343	13.7%	18.1%	19.0%	24.8%	14.3%	10.2%	*3.38*
	374	16.8%	15.2%	22.2%	17.1%	13.4%	15.2%	*3.41*
b) The presence of other people at this site prevented me from doing what I wanted to.	342	36.8%	26.6%	16.7%	8.8%	6.7%	4.4%	*2.35*
	371	41.0%	22.1%	14.8%	9.4%	5.9%	6.7%	*2.37*
c) The behaviour of other visitors at this site has been on the whole environmentally responsible.	340	7.9%	5.0%	7.1%	19.7%	34.1%	26.2%	*4.46*
	367	7.9%	6.8%	9.8%	24.8%	27.0%	23.7%	*4.27*
d) The behaviour of some visitors at this site detracted from my enjoyment of this site.	340	40.9%	21.2%	16.2%	10.9%	7.1%	3.8%	*2.34*
	371	45.6%	19.7%	15.6%	9.7%	4.6%	4.9%	*2.23*

i) Experience

QUESTIONS & RESULTS

28. The following statements are about your <u>experience</u> of this site. Please rate the extent to which you agree or disagree with each statement by circling one number.

	n	Strongly Disagree 1	2	3	4	5	Strongly Agree 6	$\overline{X}$
a) I experienced a real sense of involvement and connection with this place.	333	3.6%	7.2%	16.5%	40.5%	24.0%	8.1%	*3.98*
	364	3.6%	7.1%	21.2%	36.0%	18.4%	13.7%	*4.00*
b) For me visiting this site has been a special experience.	338	1.5%	5.9%%	12.7%	34.9%	28.7%	16.3%	*4.32*
	369	2.7%	5.7%	14.6%	30.9%	23.6%	22.5%	*4.34*
c) I thoroughly enjoyed my visit to this site today.	338	0.0%	0.6%	4.7%	21.6%	36.4%	36.7%	***5.04***
	365	0.3%	1.1%	4.9%	21.1%	31.2%	41.4%	***5.06***
d) It was well worth the money I spent to come to this site.	317	2.5%	2.5%	4.7%	25.2%	30.3%	34.7%	*4.82*
	352	2.8%	1.7%	6.0%	23.6%	28.4%	37.5%	*4.86*
e) I was disappointed with some aspects of this site.	335	38.8%	26.0%	14.9%	11.3%	6.9%	2.1%	*2.28*
	360	37.5%	25.3%	18.3%	11.7%	4.7%	2.5%	*2.28*

j) Additional Open-ended Items — *Key Findings*

Stage 1: September 2001

During this first data collection stage,

- A total of 99 visitors (13.4%) requested additional site information;
- **Additional information** requirements were predominantly related to ***natural and ecological*** information followed by ***cultural and historical*** information***;***
- While a number of issues were identified as **enhancing visitor enjoyment**, most were related to ***natural features*** of the site in particular the wildlife and rainforest;
- The most frequently reported aspects of the visit that **detracted from visitor experience** were related to other people at the site – ***crowding and bad behaviour.***

Stage 2: April 2002

During this second data collection stage, visitor responses differed slightly.

- **Additional information** requirements were again predominantly related to ***natural and ecological*** information followed by ***cultural and historical*** information***;***
- Issues most frequently identified with **enhancing visitor enjoyment** were related to ***natural features***, in particular the river;
- The most frequently reported aspects of the visit that **detracted from visitor experience** were those to do with the other people – ***crowding and behaviour.***

Combined Seasonal Data & General Comments

1. ***Natural, ecological, cultural and historical information*** *was the type of additional information most frequently sought by visitors.*
2. *The* ***natural features*** *at Mossman Gorge were what enhanced visitor enjoyment of their visit.*
3. ***Crowding and behaviour of other visitors*** *detracted from visitor enjoyment of Mossman Gorge.*

k) Additional Open-Ended Items **Questions & Results**

18. If you were to visit this site again what additional information would you like?

Responses provided have been placed into five major categories. Information related to maps/orientation, natura/ecological information, cultural/historical information and general information.

Of the **99** respondents to this question, **1** indicated that no more additional information was required;

	n		n
Maps/Orientation	***18***	**Natural/Ecological/Geological**	***50***
A map with more detail	7	Bird identification chart	1
A guide	2	Ecological processes	6
Walking distance information	9	Geography	1
Rules/Regulations/Safety	***1***	Trees / Rainforest	8 (8)
No smoking signs	1	Wildlife	19
General:	***9***	Plant Labels	6
Camping facilities	2	Water Levels during wet season	1
Easy & interesting info for kids	1	**Cultural/Historical Information**	***27***
Leaflet	2	A local indigenous guide	2
Leaflets with translations	1	Aboriginal culture	21
*Didn't notice any signs / saw little information	3	Significance of tourism to aborigines	3
		History of site	1

Of the **73** respondents to this question, **10** indicated that no more additional information was required; **2** indicated that there should be less signage.

	n		n
Maps/Orientation	***11***	**Natural/Ecological**	***22***
Information at entrance	1	Wildlife information	3
A map	2	Geological (history)	5
Clear signage	3	Ecological	1 (1)
Track / Walking information	5	Plant labels	5
Rules/Regulations/Safety	***1***	Trees / Rainforest	3
Safety in the water	1	Wildlife	1 (2)
General:	***13***	**Cultural/Historical Information**	***19***
Tour guide info in Cairns	1	Indigenous culture & history	17 (1)
Site history	1	Bush tucker tasting	1
Leaflet	2		
More general information	3		
Relaxation activities	1		
*Didn't notice any signs/ saw little information	5		

29. Were there any particular aspects of your visit that increased/enhanced your enjoyment of this site?

n = 322 Yes 32.0% No 68.0%

n = 348 Yes 22.4% No 77.6%

If yes, please specify:

	n		n
Natural:		**PsychoSocial:**	
Beautiful water	10 (1)	Friends / family	2
Beautiful weather	3 (1)	People having a good time	1
Rainforest	8	Very popular	1
Natural beauty	13	**Other:**	
Fish	2	Indigenous Information /Guide	2
Lovely walks	1	Escaping developed areas	1
The gorge	1	Good guide	11
Wildlife	5	Photographic opportunities	1
Facilities:		Quietness / Tranquility	3
Bridge	5 (1)	Memories	1
Maintained walking tracks	3 (1)	The Swim	12 (1)
Close parking	1	The coffee we got	1
Information provided	3		
Information on trees	2		

	n		n
Natural:		**PsychoSocial:**	
Beautiful water / river	15	Friends / family	1
Beautiful weather	2	Naked tourist	1
Natural Beauty / Scenery	5	Very few people	1
Fish	3		
Rainforest	3		
Wildlife	4		
Facilities:			
Bridge	2 (1)	**Other:**	
Walking tracks / Bush walk	4	The Swim	15 (1)
Parking	1	Not too developed	1
Rest & activities area	1	Quietness / Tranquility	2
Signage of cultural information	1	Good guide	3
Lookout points	1	Well kept / maintained	1
Track protection of tree roots	1		

30. Were there any particular aspects of your visit that took away/detracted from your enjoyment of this site?

n = 327 Yes 19.3% No 80.7%

n = 357 Yes 17.4% No 82.6%

If yes, please specify:

	n		n
Natural/Biophysical:		**Facilities:**	
No birds	1	Bad signage / information	5
Poor weather for photos	1	Car park	4
The wear & tear of the site	1	Dirty bridge cable	1
		Not enough access	1
Rules/Regulations/safety		Paved tracks detracted fr beauty	1
Cigarette butts	3	Prepared BBQ- couldn't use it	1
Litter on track	1	Toilets were awful	2
People jumping off rocks	1	Tracks - unclear	2
		Other:	
PsychoSocial:		Being rushed – not enough time	5
A lot of people / crowded	16	Didn't have a guide	1
Other visitors' behaviour & activities	10	Doing survey	1
		Felt a bit lost (told a 40min walk – took 1.5hours)	1
		Hearing helicopters	1
		No ranger avail for directions	1
		Lack of view of gorge	1

	n		n
Natural/Biophysical:		**Facilities:**	
Flies	1	Concrete trails	1
Damage to the site	1	Car park	5
Expected gorge to be bigger	1	Bad signage / information	2
Lack of wildlife	2	No showers / taps	1
Lack of water	3	Not enough rest areas	1
Poor weather	1	Plastic security fencing	1
Rules/Regulations/safety		Toilets were not clean	1
Cigarette butts	1	Too many stairs	(1)
Litter	2 (1)	**Other:**	
PsychoSocial:		Four wheel drives	1
Company	1	Didn't have enough time	4
A lot of people / crowded	16	Fish feeding at swimming area	1
Other visitors' behaviour & activities	8	The camp on the way in	1
Number of tourist companies	2	Doing survey	2

Comments on Questionnaire *Key Findings*

The following are key findings in the comments made by visitors to Mossman Gorge.

Stage 1: September 2001

- The majority of comments reflected negative aspects of Mossman Gorge that detracted from respondents' overall experience. The majority of these negative comments focused on the site being ***too crowded*** or ***too 'touristy'***. In relation to this, ***irresponsible behaviours*** by other visitors (such as smoking, littering and reckless driving) were also frequently reported.

- Visitors also reported that they were disappointed by the ***lack of information*** on Mossman Gorge, and the lack of ***orientation maps and signage*** along the walking tracks.

- Respondents also reported being rushed through the site. These respondents indicated that they would have liked to have spent more time at Mossman Gorge.

- Comments that suggested improvements with the site focused on:
  - ranger presence
  - more information and signage on the walking tracks
  - better quality road and car park.

- The positive comments focused on the beauty of the site.

Stage 2: April 2002

- The majority of visitor comments were positive. Most described the site as being 'nice' and 'beautiful'.

- Comments related to improvement of ***facilities*** included:
  - more rubbish bins next to picnic areas and on walking tracks,
  - more parking areas.

Mossman Gorge: September 2001

ADDITIONAL COMMENTS MADE BY RESPONDENTS ON QUESTIONNAIRE

The following are comments made by 25 respondents who completed the questionnaire at Mossman Gorge.

Date	**Comments on site.**
29.09.01	Being rushed along took away from my enjoyment of Mossman Gorge. Would have liked to have spent more time there. *(Australian visitor, female, 14 years).*
29.09.01	Wonderful – would like to see more descriptions of what we are seeing. *(Canadian visitor, female, age: ?).*
29.09.01	Indication that park is World Heritage and National Park info. Board with stories on habitat, etc., etc. *(Australian visitor, male, 41 years).*
29.09.01	I came with the expectation that this area would be more populated and was surprised to find the walks. Pleasant surprises on both accounts. *(Australian visitor, male, 22 years).*
29.09.01	Not enough access (but I kind of understand the environmental limitation: less damage, etc. *(Scottish visitor, male, 27 years).*
29.09.01	TOO MANY TOURISTS who didn't respect other peoples' sense of participation (noisy kids, lots of jumping into the river, etc. . . .) *(Australian visitor, female, 30 years).*
29.09.01	Do not agree on discrimination of a white Indigenous Australian. *(Australian visitor, female, 51 years).*
29.09.01	The litter on track, eg. toilet paper, cans took away from my satisfaction with Mossman Gorge. *(New Zealander visitor, male, 50 years).*
29.09.01	There would be more peace with less people but then I might be one of the people restricted from visiting this area and I wouldn't like that! *(Australian visitor, female, age: ?).*
29.09.01	My enjoyment of the site was reduced because I prepared a barbecue and couldn't use it: CAR PARKING. *(Australian visitor, female, 40 years).*
29.09.01	The first map of tracks wasn't that clear. Why don't you give the main walk a name or colour? Tell if pram is possible or not. *(Swiss visitor, female, 33 years).*
30.09.01	People smoking I the creek prevented me from doing what I wanted to do. Visitors driving too fast were environmentally irresponsible. The loud and obnoxious behaviour of visitors detracted from my enjoyment of the site. *(Australian visitor, female, 24 years).*
30.09.01	My responses on my experience of this site are affected by limited time spent. Am very interested in nature, wildlife, ecology and conservation. *(American visitor, male, 73 years).*
30.09.01	The trails are too "touristy" – should be more natural, eg. no metal steps. *(American visitor, male, 41 years).*
30.09.01	We bring all our visitors to Mossman Gorge. We live in Cairns and have many visitors from S.A. and always include this on our agenda. It is frustrating to see people swimming even with the warnings! *(Australian visitor, female, 30 years).*
30.09.01	People smoking and feeding fish with bread detracted from my enjoyment of this site. *(Australian visitor, female, 46 years).*
30.09.01	No park ranger available; not enough signage were the aspects detracting from my enjoyment of this site. *(Australian visitor, female, 43 years).*
30.09.01	The road in could be improved by charging a small fee. More ranger presence, eg. walking tours? An information centre would be an improvement. *(Australian visitor, male, 67 years).*
30.09.01	The quantity of people detracted from my enjoyment of the site. *(Australian visitor, female, 23 years).*

30.09.01 The lack of information/signage reduced my satisfaction with the site.
(Australian visitor, male, 40 years).

30.09.01 Only one criticism. It would have been helpful to see a location board a few times throughout walk to let me know where I was, especially past the bridge on the circuit. It seemed much longer than two kilometres.
(Australian visitor, female, 54 years).

30.09.01 Haven't been to many rainforests, very much enjoyed it. It looks like the environment here is not terribly endangered. Hope that this is so and that it continues.
(American visitor, male, 27 years).

30.09.01 Would have liked more info., eg. A4 leaflet.
(English visitor, male, 65 years).

30.09.01 Beautiful, thank you!
(American visitor, female, 22 years).

30.09.01 Beautiful, mate!
(English visitor, female, 32 years).

ADDITIONAL COMMENTS MADE BY RESPONDENTS ON QUESTIONNAIRE

SITE : Mossman Gorge March/April 2002

The following are comments made by some respondents who completed the questionnaire at Mossman Gorge.

Date	Comments on site
31.03.02	More parking area is needed. *(Australian visitor, 35 years, female)*
31.03.02	Very nice. *(Canadian visitor, 20 years, male)*
31.03.02	I was expecting there to be more footpaths. *(Hong Kong visitor, unkown age, female)*
31.03.02	Extra safety is required in the water gorge, ie. the water current. *(UK visitor, 23 years, male)*
31.03.02	Camera sights were really beautiful. *(UK visitor, 34 years, female)*
31.03.02	Beautiful spot. Needs bins to protect and maintain the rainforest from rubbish left by tourists. *(Australian visitor, 21 years, female)*
31.03.02	Rubbish bins need to be placed around. *(Australian visitor, 24 years, male)*
31.03.02	No rubbish bins next to the picnic areas in the rainforest. *(Australian visitor, 24 years, male)*
31.03.02	Very nice and quiet. *(Australian visitor, 11 years, female)*
31.03.02	So beautiful, so different. Nothing like it in Brisie and nothing like I have ever seen before. *(German visitor, unknown age, female)*
31.03.02	Very excellent. *(UK visitor, 51 years, male)*
31.03.02	Calm waters, nice setting. *Australian visitor, 19 years, female)*
31.03.02	Wonderful place. *Australian visitor, 39 years, female)*

Comments to Field Assistants *Key Findings*

The following comments were most frequently reported to the field assistants at Mossman Gorge.

Stage 1: September 2001

- The most frequent comment made by respondents was in regards to the lack of signage (warning signs & orientation / location) at the site.

Stage 2: March/April 2002

- No additional comments were recorded during this data collection period.
- The most frequent observation made by field assistants during this period was in regards to the congested parking facilities at the site.

COMMENTS AND OBSERVATIONS MADE BY FIELD ASSISTANTS

SITE : Mossman Gorge March/April 2002

- The parking lot was constantly congested with both people and cars, creating a dangerous area.
- Despite signage restricting parking of caravans, drivers of caravans proceeded to park in the parking lot.
- No designated parking was available, causing cars to park on the shoulder of the road and occupy more room than necessary.
- Deep erosion in the shoulder of the road potentially damaged cars attempting to park in this area.
- Drivers frequently vented their frustration at being unable to locate a parking spot by abusing other drivers.
- Evidence of visitors accessing the gorge by alternative paths to those existing was visible in the surrounding rainforest.

COMMENTS MADE BY RESPONDENTS TO FIELD ASSISTANTS

SITE : Mossman Gorge September 2001

The following are comments made by 2 visitors to the field assistants at Mossman Gorge.

Date	Comments on Site
29.09.01	Requested signage about snakes and wearing shoes. *(Anon.)*
30.09.01	German tourist – complained of lack of signage. They had to park about 250 m from entrance, so couldn't see signs. She didn't know she was at Mossman Gorge. *(Anon.)*

SITE : Mossman Gorge March/April 2002

No additional comments were recorded during this data collection period.

BEHAVIOURAL EVENTS *Key Findings*

Combined Data Sets

From the behaviours recorded at Mossman Gorge in September 2001 and April 2002, the following three event categories were the most frequently observed.

- ***Domestic Animals***

  The presence of domestic animals was only observed during September 2001 (dry season). In most cases, dogs were observed walking around the site on a lead.

- ***Speeding***

  Vehicles speeding up the road to the site was observed during both stages. Motor bikes were more frequently observed speeding.

- ***Inappropriate Visitor Behaviour***

  The majority of inappropriate behaviour observed by field assistants was in regards to the congested parking at the site. Quite often, the congested parking resulted in aggressive behaviour (swearing at field assistants) and dangerous driving (reversing down the road). Other inappropriate behaviours included littering and playing loud music.

Note: Given the time and effort involved in persuading visitors to participate in the survey and the considerable numbers of visitors present, it was not possible to undertake a comprehensive assessment of on-site visitor behaviours.

BEHAVIOURAL EVENTS

The following are critical incidental observations of behavioural events made opportunistically by field assistants during the period of administration of surveys and counts of vehicles/visitors.

Behavioural Topic	Comment : *SEPTEMBER 2001*	Comment: *March/April 2002*
Domestic Animals	30.09.01 • Domestic dog on lead. 10.00 hrs. • Dog in car. 10.50 hrs. • Dog on lead. 14.10 hrs.	• N/A
Deliberate Damage to Plants	• N/A	• N/A
Undesignated Area Use	29.09.01, 30.09.01. • Parking – no lines – took up a lot of space.	31.03.02 • Parking with campervan, took up about ten spaces and irritated several drivers. 11.30 hrs. • 25 – 30 cars, some with vans, and a big caravan – undesignated parking. • Walking off track and accessing wrong part of creek.
Speeding	29.09.01 • Park ranger speeding.	31.03.02, 01.04.02 • Motorbikes speeding. 01.04.02 • Exiting car park. 14.28 hrs.
Risk Activity	23.09.01 • Screaming kids in way of cars. 10.26 hrs.	31.03.02 • Three point turns – narrow road. • Reversing down road.
Aggressive Behaviour	29.09.01 • Loud, noisy child chasing turkey. 11.30 hrs.	31.03.02 • Coarse language towards field assistants. 11.30 hrs.
Other	29.09.01 • Picnicking – breakfast with gas bottle. 08.30 hrs. • **Loud music**: 09.10 hrs. Playing from car stereo. 13.50 hrs. • **Interaction with animals**: scrub turkey. 08.15 hrs. lizard. 08.30 hrs. • **Littering**: Stubbie can. Cigarette butt. 08.30 hrs.	01.04.02 • Children creating mess in toilets.

SECTION TWO

Section Two

Infrastructure Inventory and Profile

- Site Infrastructure Inventory
- Site Information and Signage

MOSSMAN GORGE

Map of the layout of the site including the delineation of the activity nodes which have been assessed.

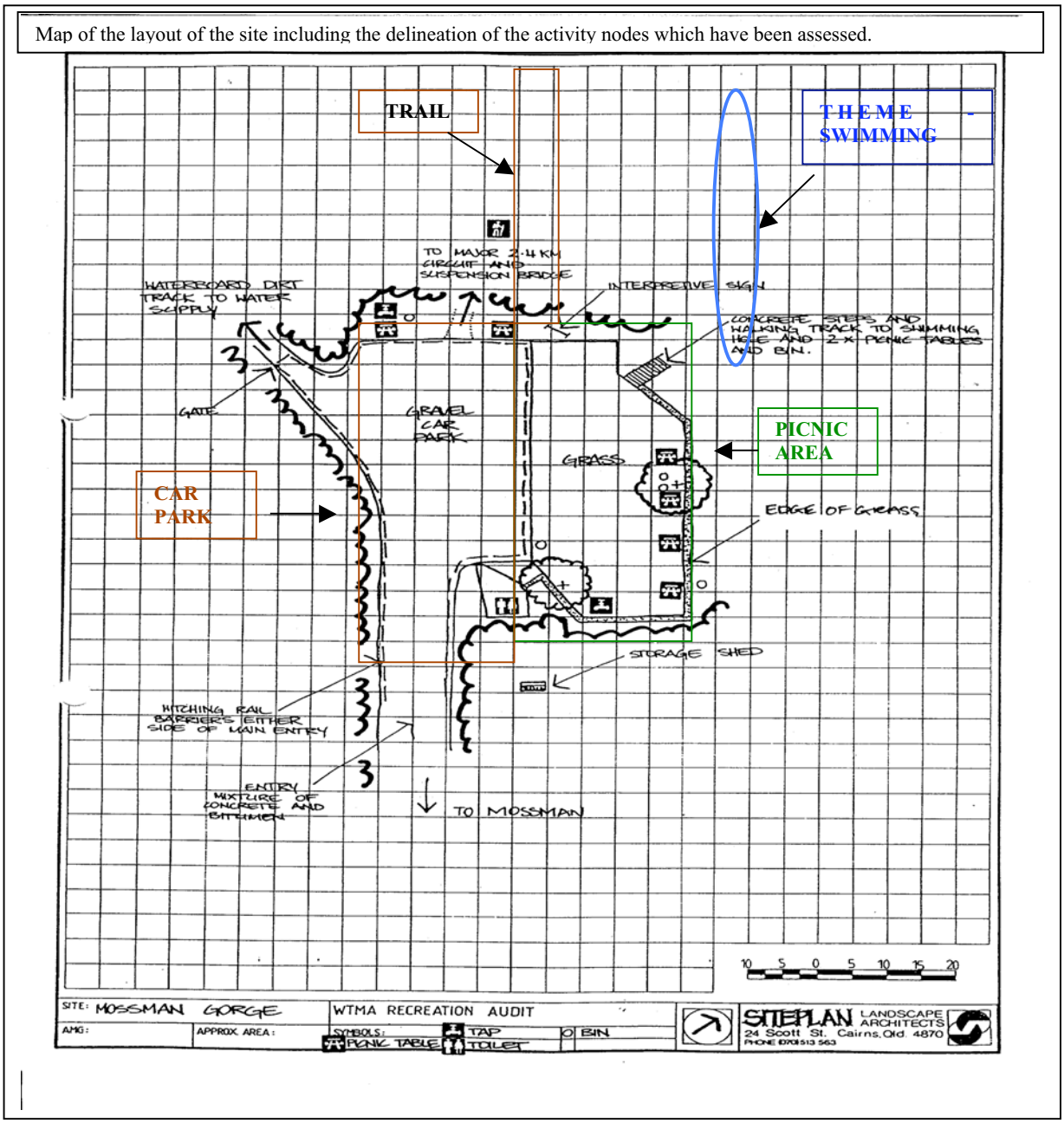


Figure 1: Mossman Gorge site map (Source: *SitePlan 1993 modified to show activity nodes*).

Site Infrastructure Inventory

The following table is a summary version of the inventory of features/facilities recorded by the author at the site first in 1998 (yellow shading), and again in 2002.

MOSSMAN GORGE	Wet Tropics Site No. : 18 Management Agency: EPA/QPWS Dates Assessed: April 1998 & April 2002					
Site Parameters	**1998**		**2002**			
Annual vehicle/visitor #	Vehicle s = 139,065; Visitors = 486,728		Vehicle s = 107,769; Visitors = 366,415			
Site Access:	Road		Road			
Road Type:	Sealed		Sealed			
Road Conditions:	Severe erosion / few pot holes on edges		Erosion & few pot holes on edges			
	Car Park		**Picnic Area**		**Trail** – to bridge + circuit along creek	
Facilities / Infrastructure	**1998**	**2002**	**1998**	**2002**	1998	2002
Landscaping:	Hard	Hard	Hard	Hard	Hard	Hard
Signage:						
Corporate Identity	2 (access rd)	Absent	Absent	Absent	1	Absent
Visitor Orientation	Absent	Absent	1	2 + 4 at toilets	12	8
Visitor Advice	1 (access rd)	Absent	4	3	8	9
Regulatory	3 (access rd)	Absent	Absent	Absent	Absent	Absent
Interpretive	Absent	Absent	Absent	Absent	1	1
Foreign Language	Absent	Absent	Absent	Absent	Absent	Absent
Capacity / Description:	Bitumen	20 + central area, no demarcation	Approx 24 seating spaces	Approx 24 seating spaces	800 m	800 m
Amenities / Utilities						
Toilets:	Absent	Absent	Septic	9 Septic	Absent	Absent
Showers:	Absent	Absent	Absent	Absent	Absent	Absent
Bins:	Absent	Absent	5 insert with lids, 2 insert no lids	5 insert with lids	Absent	Absent
Water:	Absent	Absent	Present	Present	Absent	Absent
Power:	Absent	Absent	Absent	Absent	Absent	Absent
Telephone:	Absent	Absent	Absent	Emergency phone	Absent	Absent
Other	Absent	Tap Bicycle rack (capacity = 14)	6 tables, disabled toilets	6 tables, 2 disabled toilets, 4 wash basins	Table/s present	1 Table + 2 seats at entrance
Appeal						
Attractiveness:						
Naturalness (within)	Nil	Nil	Medium	Medium	High	Medium
Naturalness (surroundings)	Medium	Medium	High	High	High	High
Nuisance insects	Low	Low	Medium	Nil	Low	Low
Built environment	Medium	Medium	Medium	Medium	Medium	Low
Shade	40%	40%	85%	85%	90%	90%
Noise (human origin):	Medium - cars & people	High - cars & people	Medium - cars	Medium - cars	High - people	High - people
Biophysical						
Landform:	Level		Level		Gently-mod inclined	
Altitude:						
Vegetation:	Rainforest		Rainforest		Rainforest	
Geology:	Metamorphic & Granites		Metamorphic		Metamorphic	
Water body:	Absent		River adjacent		River adjacent	
Impact Assessment						
Condition Indicators:						
Litter (visual impact)	Medium	Medium	Low	Medium	Low	Low
Litter (amount)	< 20 items	> 20 items	6-20 items	> 20 items	<5 items	<5 items
Litter (type)	Paper, cig butts,	Paper, cig butts, plastic	Paper, plastic, cig butts	Paper, plastic, cig butts	Paper	Paper
Waste Management	Nil	Nil	Bins not emptied not clean, loose rubbish present	Bins emptied, clean, loose rubbish absent	Nil	Nil
Wear on facilities	Low	Medium	Medium	Medium	Medium	High
Vandalism / graffiti	Low	Low	Medium	Medium	-	Low
Environmental Indicators:						
Soil erosion	Medium	Medium	Medium	Medium	Medium	High
Exotic weeds	Medium	Medium	Medium	Medium	Medium	Medium
Exotic ornamentals	Nil	Nil	Nil	Nil	Low	Low
Vegetation	No mutilation, medium breakage	No mutilation, medium breakage	Low breakage, low mutilation	Low breakage, low mutilation	Low breakage, med mutilation	Low breakage, medium mutilation
Wildlife	No evidence of habituation	No evidence of habituation	No evidence of habituation	Scrub turkey	No evidence of habituation	Scrub turkey at entrance
Additional Notes	**1998:** Car park capacity is exceeded & a high number of vehicles are parked in undesignated areas, in particular along the access road. **2002:** No improvement		**2002:** Toilets are very smelly.		**2002:** Eight undesignated trails identified – around steps, into bush, to creek.	

Site Infrastructure Inventory *Details*

A. Car Park

Parking Area: One parking area services both the day use area and the walking track. This car park is sealed and separated from the day use area by bollards. No designated parking bays are present but capacity is estimated to be approximately 20 - 25 cars along the edge and two to three buses in central area. There is also bicycle racks available (capacity = 14). Many vehicles park along the side of the access road when car park is full and can extend a considerable distance down the access road. Parking becomes a concern in terms of erosion, bog holes and a cause of conflict when vehicles park haphazardly along road edge. The access road becomes very narrow which restricts passing.

B. Day Use Area

Amenities Area: Toilet block (septic) is set back into the forest. Access is via a sealed short track. These facilities are well sign posted in day use area and at beginning of track to toilet block. Disabled access is possible.

Picnic Area: There is one grassed picnic area which is defined by the parking area and surrounding bollards on one side and the river on the other.

Facilities	#	Type/Condition
Tables	6	Timber
Benches around table	6x 2	Timber
BBQ	-	
Bins	5	With plastic inserts
Taps	-	

C. Walking Track

To Rex Bridge: This track is unsealed with at least six sets of steps, four of which have steel rails. Wheel chair access is therefore not possible along this track. There are a number of areas which look out across the river along this track. These areas are enclosed with steel rails.

Circuit Track along river: This track is both unsealed and sealed (cement) with at least four sets of steps. Wheel chair access is not possible along this track. There are a number of areas which look out across the river along this track and from which people can access the river for swimming.

Facilities	#	Type/Condition
Steps	6	Steel + rock + cement
Look outs	1	Rock with steel rails
Sitting Benches	-	-
Bridge	2	Steel + timber Cement
Picnic tables	2	Timber

A. Parking Area

Bicycle Rack

Car Park

Car park Access

B. Picnic Area

Picnic Area

Toilet Block

Picnic Tables

C. Track – Rex Bridge & Circuit Track along Mossman River

Stone Steeps

Swinging Bridge

Cement Path

Lookout Section

Picnic Areas near swimming holes

Site Information and Signage

The information and signage for the five key activity nodes of the site (main and access roads, car park, day use/picnic area, walking track) were grouped, as best as possible, according the Department of Natural Resource's five broad sign categories. The inventory includes numbers of actual sign structures and total information types according to these categories and within each of the activity nodes. An assessment of information content was not undertaken in this research project.

Key Findings

- A total of ***28 sign structures*** containing ***46 separate sets of information*** relevant to Mossman Gorge were recorded at the site itself.
- Most of these signs (32.6%) were for the purpose of ***visitor orientation***.
- ***Visitor advice*** was mainly in the form of safety information, cautioning visitors about risks associated with the river/swimming, and maximum carrying capacity of the bridge.
- No ***interpretive*** signage currently present at this site compared to 1993 when there were nine interpretive signs. Some natural/ecological information is incorporated in the corporate signs.
- Surprisingly only ***three corporate identity*** signs were present and they were along the access road and in the picnic area.
- The ***foreign language*** signage present at this site was part of the safety information provided on the visitor advice signs.

Table 1: Number and type of signs at Mossman Gorge.

Sign Category	Main Road	Access Road	Car Park	Day Use /Picnic Area	Track	TOTAL
Interpretive						
Visitor orientation	4			3	8	**15**
Visitor advice		3		4	7	**14**
Regulatory		3	2	9		**14**
Corporate Identity		2		1		**3**
TOTAL Information Types	**4**	**8**	**2**	**17**	**15**	**46**
# Sign Structures	**4**	**2**	**2**	**8**	**12**	**28**
SitePlan 93						***(36)***

Comparative Data Set

SitePlan undertook an audit of signage Mossman Gorge in April 1993. Information from this audit has been included in the above table *(italics and parenthesis)* for comparative purposes.

Main Road (Highway)

Access Road

Picnic Area

Car Park Area

Walking Track

SECTION THREE

Section Three

Vehicle and Visitor Monitoring

- Vehicle and Visitor Records
- Traffic Counter Data

Mossman Gorge: Summary Table of Visitor and Vehicle Data

	Visitors					Vehicles				
	Major Type	**# in 8hrs**	**# per vehicle**	**Highest # at one time**	**Time: hours**	**Major Type**	**# in 8hrs**	**Highest # at one time**	**Time : hours**	**Average Length of Stay**
29 Sept	Families/ Small Groups 47%	1,032	3.77	250	1210	Cars 68%	274	76	1210	65 mins
30 Sept 2001		1,094	3.22	270	1330		340	87	1255	79 mins
31 March 2002	Families/ Small Groups 48%	1,351	3.26	**340**	1500	Cars 70%	414	**105**	1240	78 mins
1April		1,321	3.36	330	1345		393	100	1345	83 mins

Note: Data based on four x eight hour observations and one x five hour observation of vehicles and visitor occupancy in September 2001 and April 2002 .

Mossman Gorge: Summary Table of Traffic Counter Data

	Visitors					Vehicles		
	Average	**Highest #**	**Time 0f Highest**	**Lowest #**	**Time 0f Lowest**	**Average**	**Highest #**	**Lowest #**
Yearly	**366,415**					**107,769**		
Monthly	28,182	42,695	August 2002	18,047	September 2002	8,290	12,563	5,310
Weekly	6,543	10,683	August 2002, Week 2	4,002	September 2002, Week 4	1,924	3,142	1,177
Daily : Weekdays	924	1,721	2nd July 2002	349	26th September 2002	272	506	103
Daily: Weekends	1,015	1,867	31st March 2002	408	22 December 2001	299	549	120

Note: Data based on the continuous recording of traffic using the traffic counter/metro count system from November 2001 to October 2002.

Vehicle and Visitor Records *Key Findings*

Data for these records were established from eight hours of continuous observations of vehicles and vehicle occupancy during each day of the survey distribution periods, Stage 1 (29th & 30th September 2001) and Stage 2 (31st March & 1st April 2002). Comparative data is presented on page 65.

Stage 1: 29th and 30th September 2001

Pattern of access to and use of Mossman Gorge Figure 1

General

- ***Vehicle Type:*** The majority of vehicles using the site over the two days of observation were ***cars (68%).***
- ***Visitor Category:*** Mossman Gorge appears to be favoured by independent visitors with families and/or small groups making up the major visitor category over these two days (47%).
- A total of 29 tours visited Mossman Gorge during these two days (17 tours Day 1, 9 tours Day 2).

Day 1 (29th September 2001 - Saturday)

- A total of ***1,032 people*** in ***274 vehicles*** visited Mossman Gorge during this eight hour observation period.
- There was ***one distinct peak*** in visitor numbers around ***1210 hours***.
- The highest number of visitors at the site at any one time was ***250 at 1210 hours***. At any one time visitor numbers remained above 100 for most of the day.
- The highest number of vehicles at the site at any one time was ***76 at 1210 hours***. For most of the day number of vehicles at the site remained above 30.

Day 2 (30th September 2001 - Sunday)

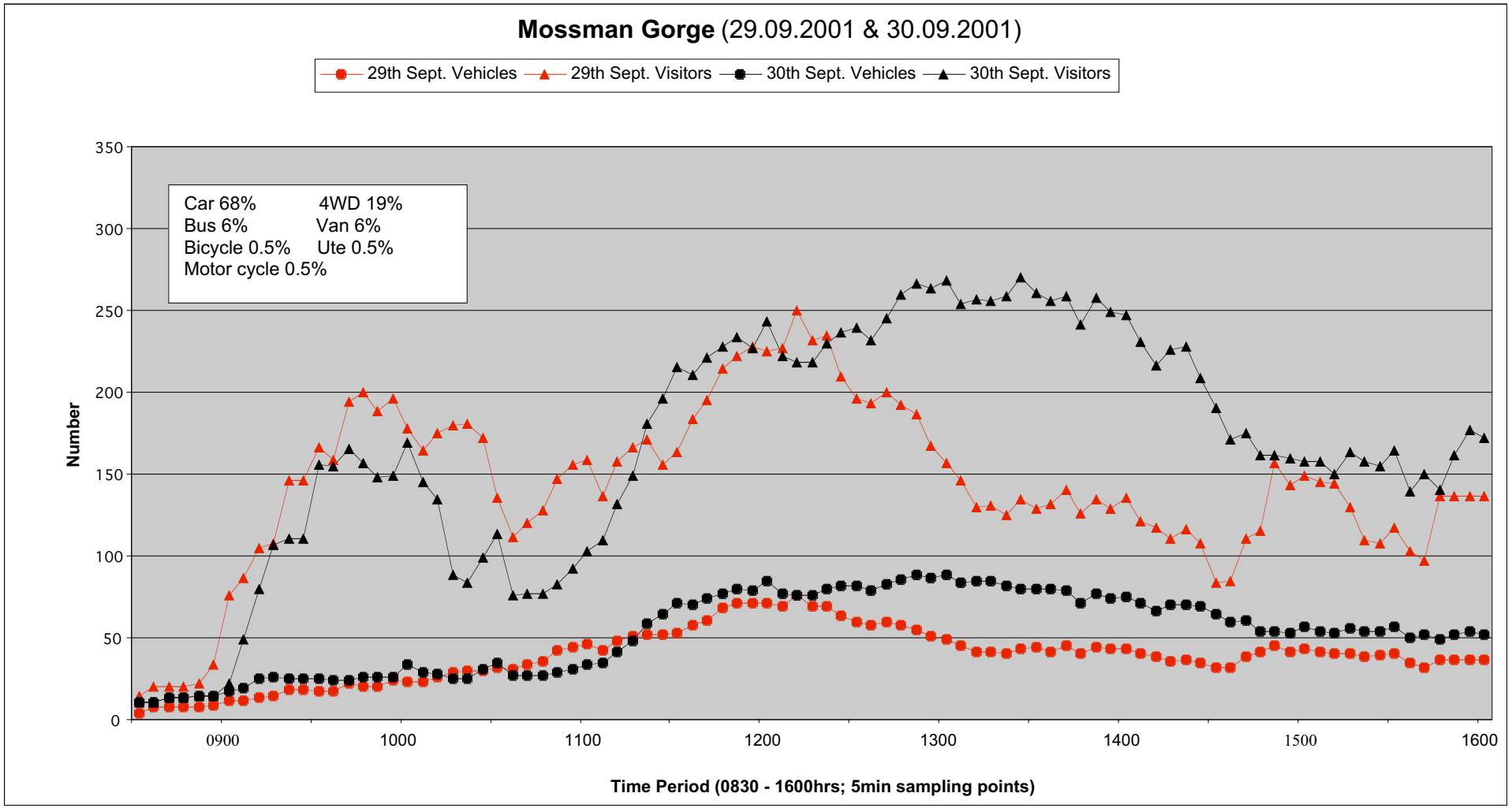
- A total of ***1,094 people*** in ***340 vehicles*** visited Mossman Gorge during this eight hour observation period.
- Between ***1300 and 1400 hours*** visitor numbers were at their highest (between 250 & 280).
- The highest number of visitors at the site at any one time was ***270 at 1330 hours***. For most of the day the number of visitors at the site at any one time remained above 100.
- The highest number of vehicles at the site at any one time was ***87 at 1255 hours***. For most of the day number of vehicles at the site remained above 50.

Length of Stay Figures 2 and 3

- There were fewer vehicles observed at the site on Day 1 (274 vehicles) compared to Day 2 (340 vehicles), and there were fewer people (1,032 visitors Day 1, 1,094 visitors Day 2).
- The average length of stay was ***65 minutes*** on Day 1, and ***79 minutes*** on Day 2.

VEHICLE AND VISITOR COUNT DATA: ***MOSSMAN GORGE***

Figure 1: Records for Vehicles and Visitors at Mossman Gorge.



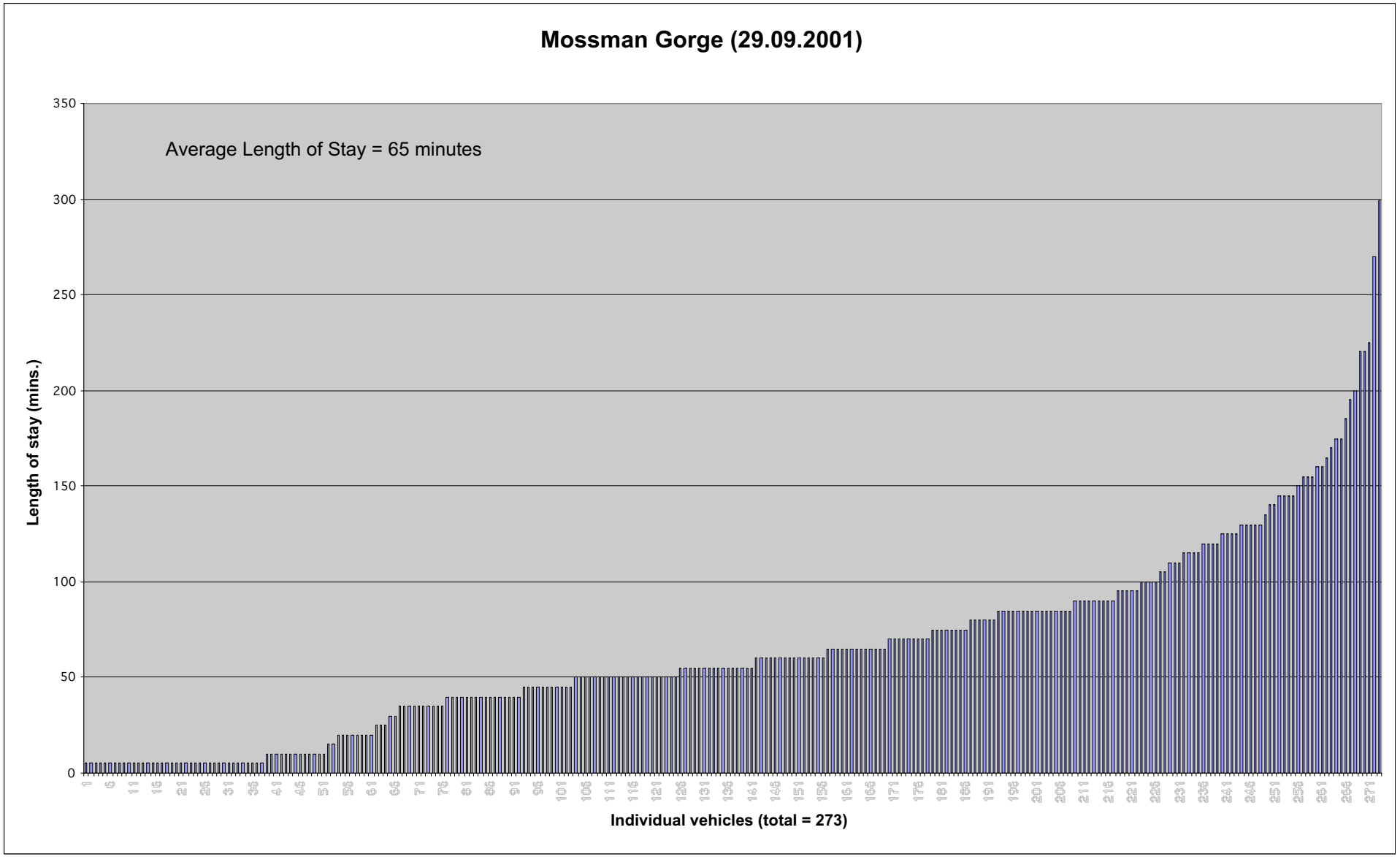


Figure 2: Length of stay of each vehicle at Mossman Gorge on Day 1 - 29.09.2001.

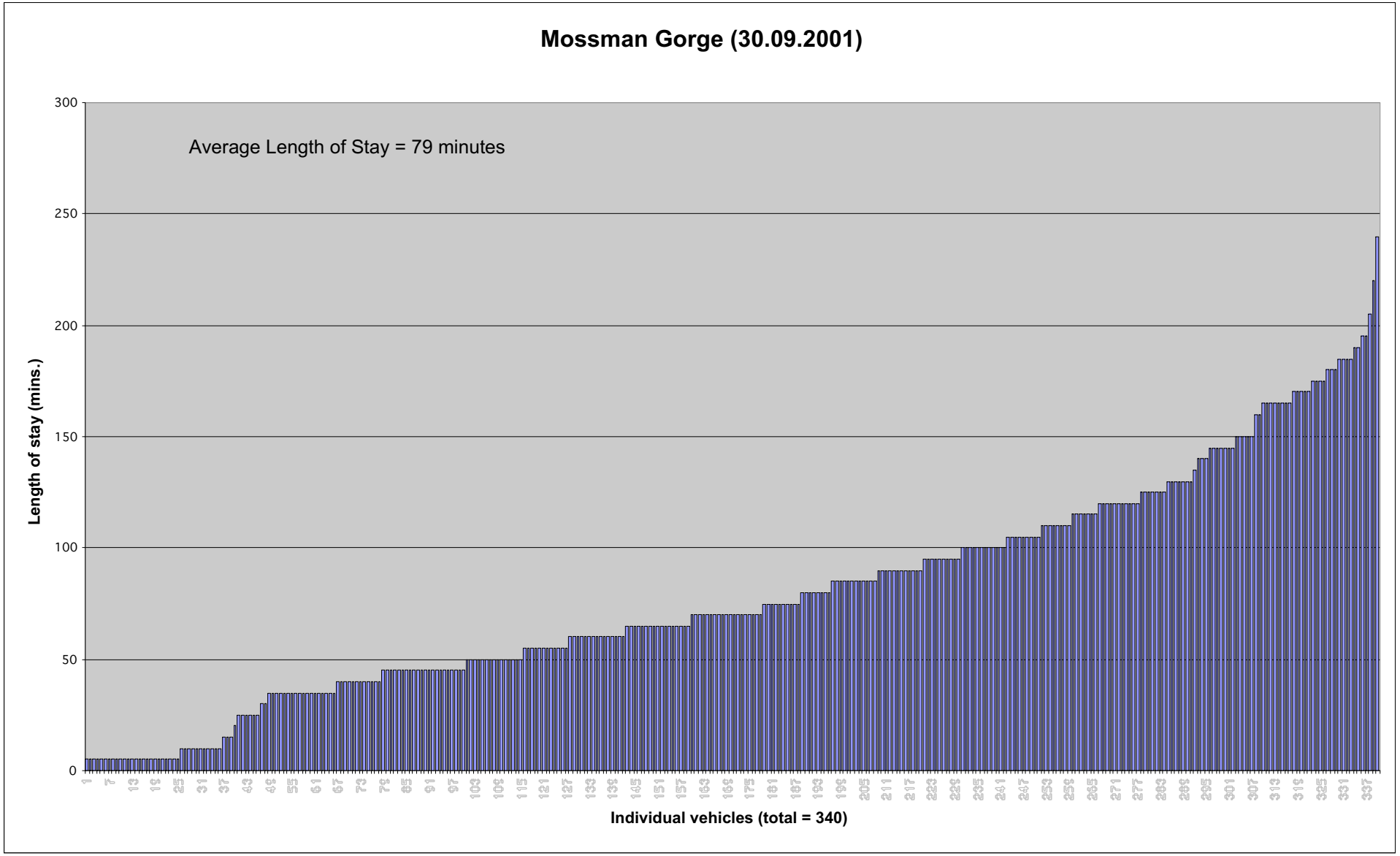


Figure 3: Length of stay of each vehicle at Mossman Gorge on Day 2 - 30.09.2001.

Vehicle and Visitor Records *Key Findings*

Stage 2: 31st March and 1st April 2002

Pattern of access to and use of Mossman Gorge Figure 4

General

- ***Vehicle Type:*** The majority of vehicles using the site over the two days of observation were ***cars (70%).***
- ***Visitor Category:*** Mossman Gorge appears to be favoured by independent visitors with families and/or small groups making up the major visitor category over these two days (48%).
- A total of 31 tours visited Mossman Gorge during these two days (18 tours Day 1, 13 tours Day 2).

Day 1 (31st March - Sunday)

- A total of ***1,351 people*** in ***414 vehicles*** visited Mossman Gorge during this eight hour observation period.
- There were ***three distinct peaks*** in visitor numbers around ***1245, 1345 and 1500 hours***;
- The highest number of visitors at the site at any one time was ***340 at 1500 hours***. At any one time visitor numbers remained above 200 for most of the day.
- The highest number of vehicles at the site at any one time was ***105 at 1240 hours***. For most of the day number of vehicles at the site remained above 50.

Day 2 (1st April - Monday)

- A total of ***1,321 people*** in ***393 vehicles*** visited Mossman Gorge during this eight hour observation period.
- At ***1130 and 1400 hours*** visitor numbers were at their highest.
- The highest number of visitors at the site at any one time was ***330 at 1345 hours***. For most of the day the number of visitors at the site at any one time remained above 200.
- The highest number of vehicles at the site at any one time was ***100 at 1345 hours***. For most of the day number of vehicles at the site remained above 50.

Length of Stay Figures 5 and 6

- There were more vehicles observed at the site on Day 1 (414 vehicles) compared to Day 2 (393vehicles), and there were more people (1,351 visitors Day 1, 1,321 visitors Day 2).
- The average length of stay was ***78 minutes*** on Day 1, and ***83 minutes*** on Day 2.

VEHICLE AND VISITOR COUNT DATA

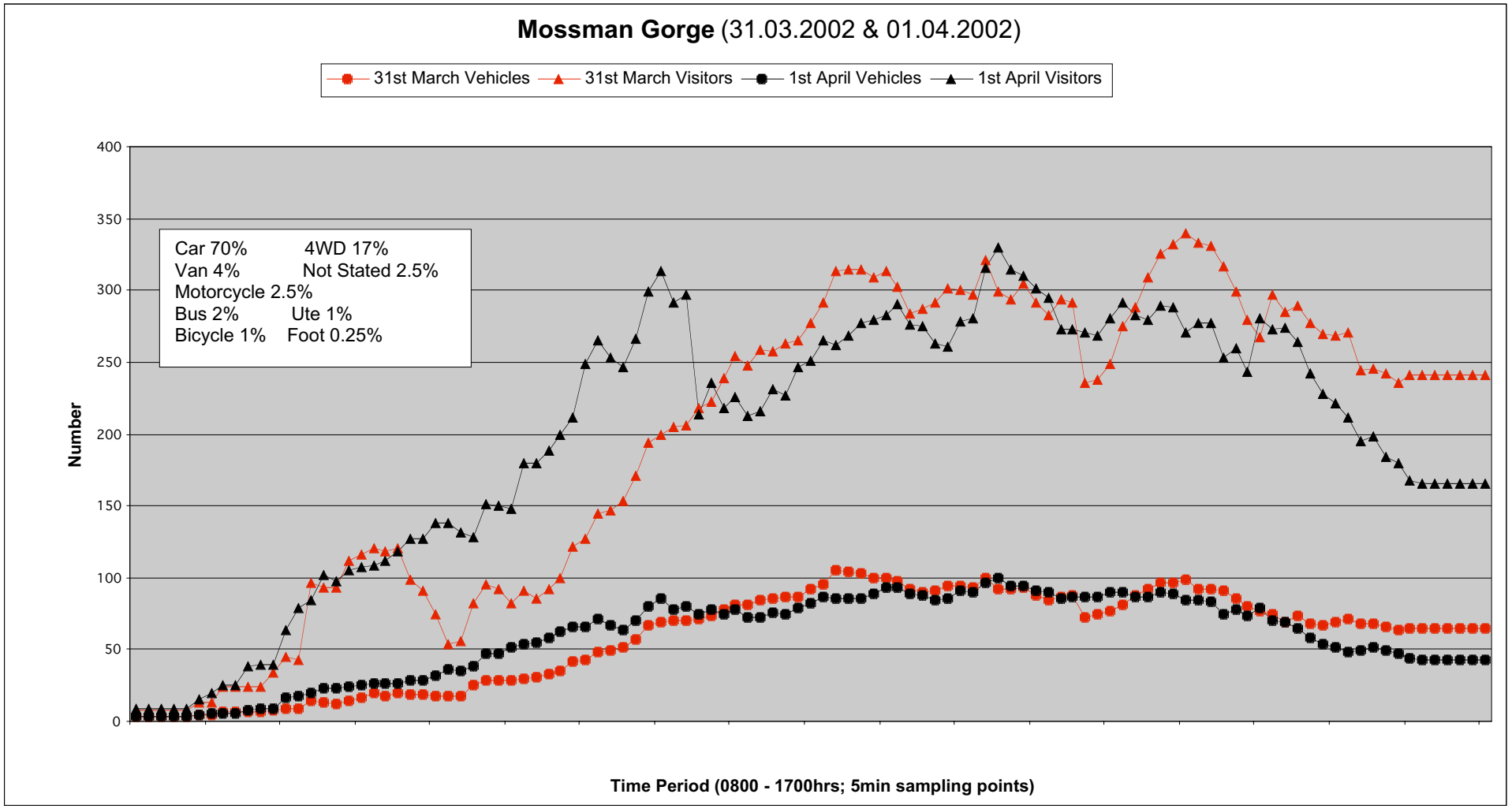


Figure 4: Records for Vehicles and Visitors at Mossman Gorge.

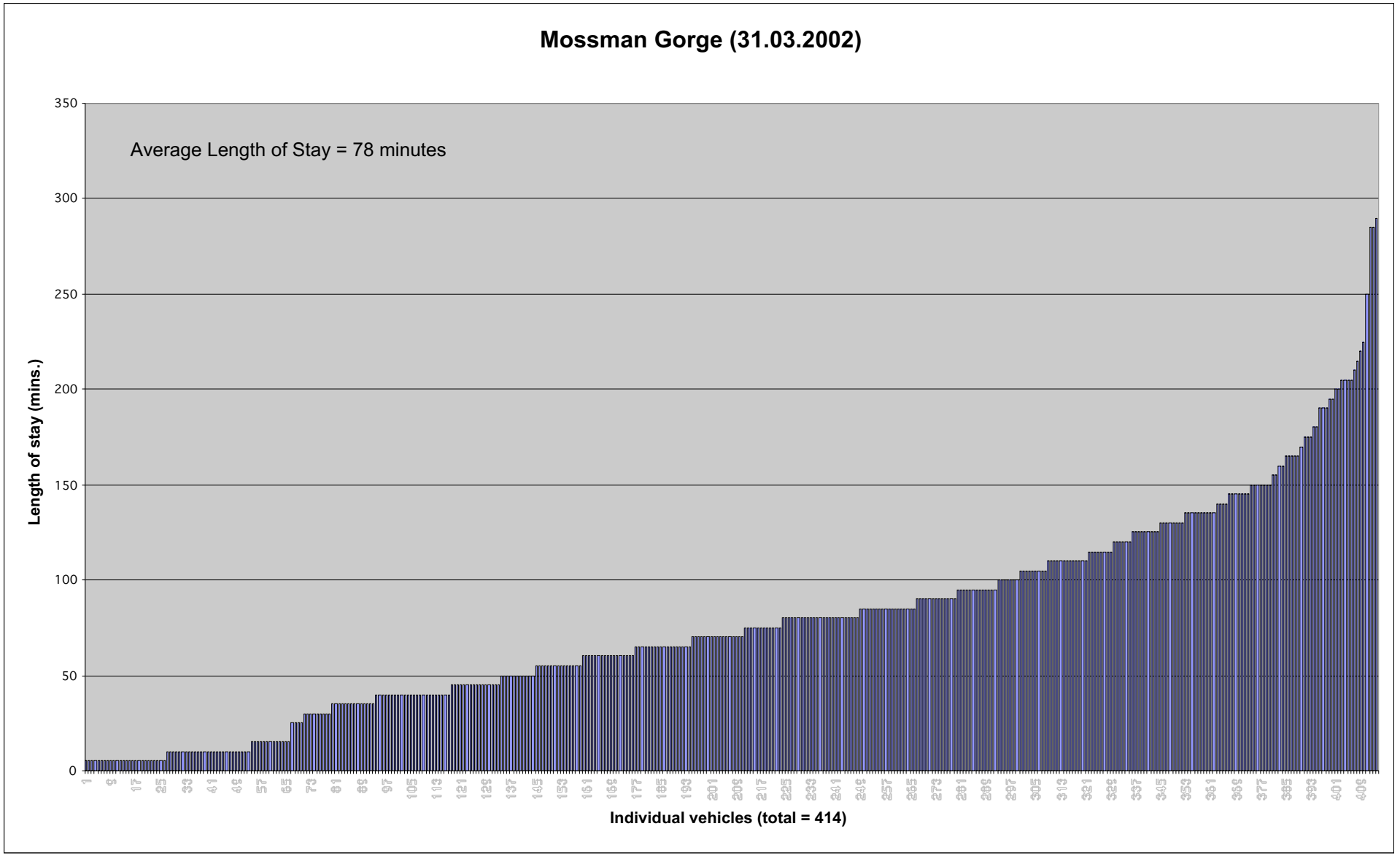


Figure 5: Length of stay of each vehicle at Mossman Gorge on Day 1 - 31.03.2002.

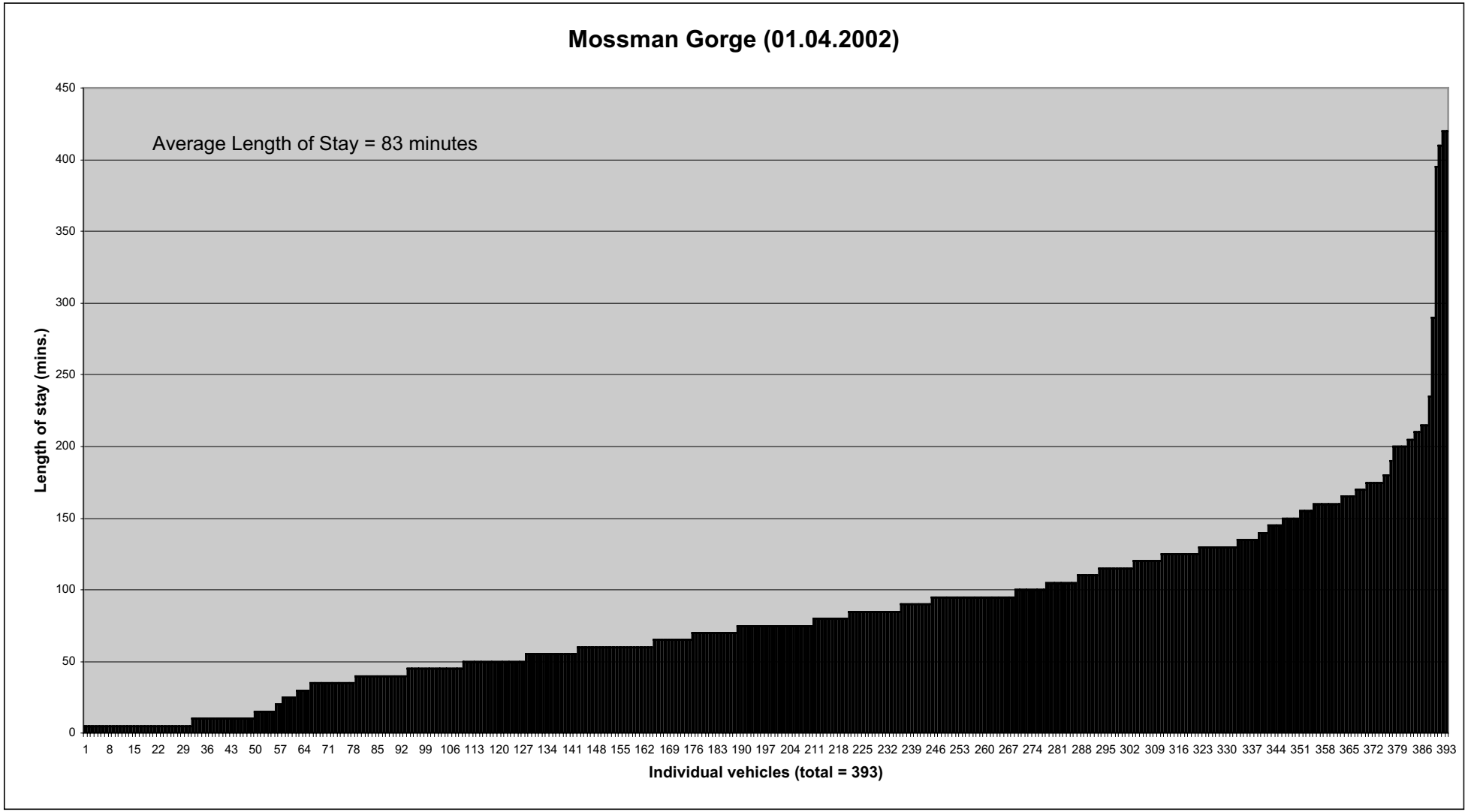


Figure 6: Length of stay of each vehicle at Mossman Gorge on Day 2 - 01.04.2002.

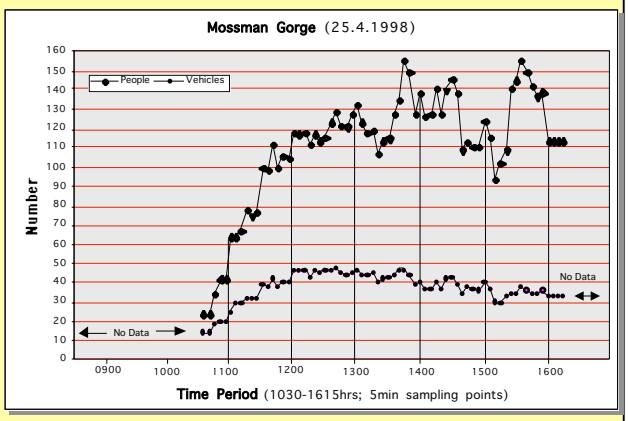
Comparative Traffic Counter Data : *Mossman Gorge 1999*

The following information has been extracted from the report "Impacts of visitation & use" (Bentrupperbäumer & Reser, 2000) and was established from data recorded in 1999.

Number of vehicles & visitors During a similar observation period (11.5 hours over two days), 1.6 as many vehicles entered Mossman Gorge as Cape Tribulation (n = 438; 38 vehicles per hour), bringing 1,244 visitors to the site (108.2 visitors per hour). Here again a small percentage of vehicles did not stay due to congestion in the car park and perceived density in the site. When considering that at this level of visitation the car park was often congested, and yet the highest recorded number of vehicles to this site was 728 in a similar period (2,548 visitors; Table 3.1.3), there must have been considerable crowding occurring both in terms of vehicle and visitors at this site. Given that this site is located at the end of the road, all vehicles/visitors entering the site would presumably be intending to visit the site.

Parking Details Mossman Gorge parking facilities were severely stretched during the majority of the observation periods. This is clearly evident from the results which indicate that 55.3% of vehicles that stopped at the site were parked in undesignated areas, that is, along the road side of the access road rather than within the central parking area. At any one time this site is known to have up to 85 vehicles parked despite an official car park capacity of just 40 vehicles. Parking at this site is a major problem with the present designated parking area clearly unable to cope with the number of vehicles accessing the site. Furthermore, while the size and capacity of the car park may appear to act as a crude mechanism for controlling numbers of visitors, the figures would suggest its ability to do so is doubtful.

Pattern of Use At Mossman Gorge vehicle numbers at the site remained at between 30 and 50 for a 5.25 hour period (1100 to 1615 hrs). During this same period the number of visitors on site at any one time was always above 60 and from 1130 to 1500 hrs (3.5 hour period) it was always above 100, rising to 158 at 1345 hrs.



Length of Stay The average length of stay at Mossman Gorge was similar to Marrdja (mean = 55.5 mins; SD ± 44.7; range 5 – 210 mins). Here, too, many more people were staying for longer periods of time, in this case a consequence of the variety of activities available to the visitor at this site.

Traffic Counter Data *Key Findings*

The traffic counter was installed at Mossman Gorge for 12 months (September 2001 – September 2002). The following key findings are associated with this data set.

Yearly Estimates = 107,769 vehicles and 366,415 visitors

Monthly Records **Figure 8**

- On average ***8,290 vehicles*** (range = 5,310 – 12,563) and ***28,182 people*** (range = 18,047 – 42,695) visited Mossman Gorge each month.
- ***August 2002*** received the ***highest*** visitation rates during which for four of the five weeks in August, vehicle numbers were above 2,500. The quietest period was September 2002.

Weekly Records **Figure 9**

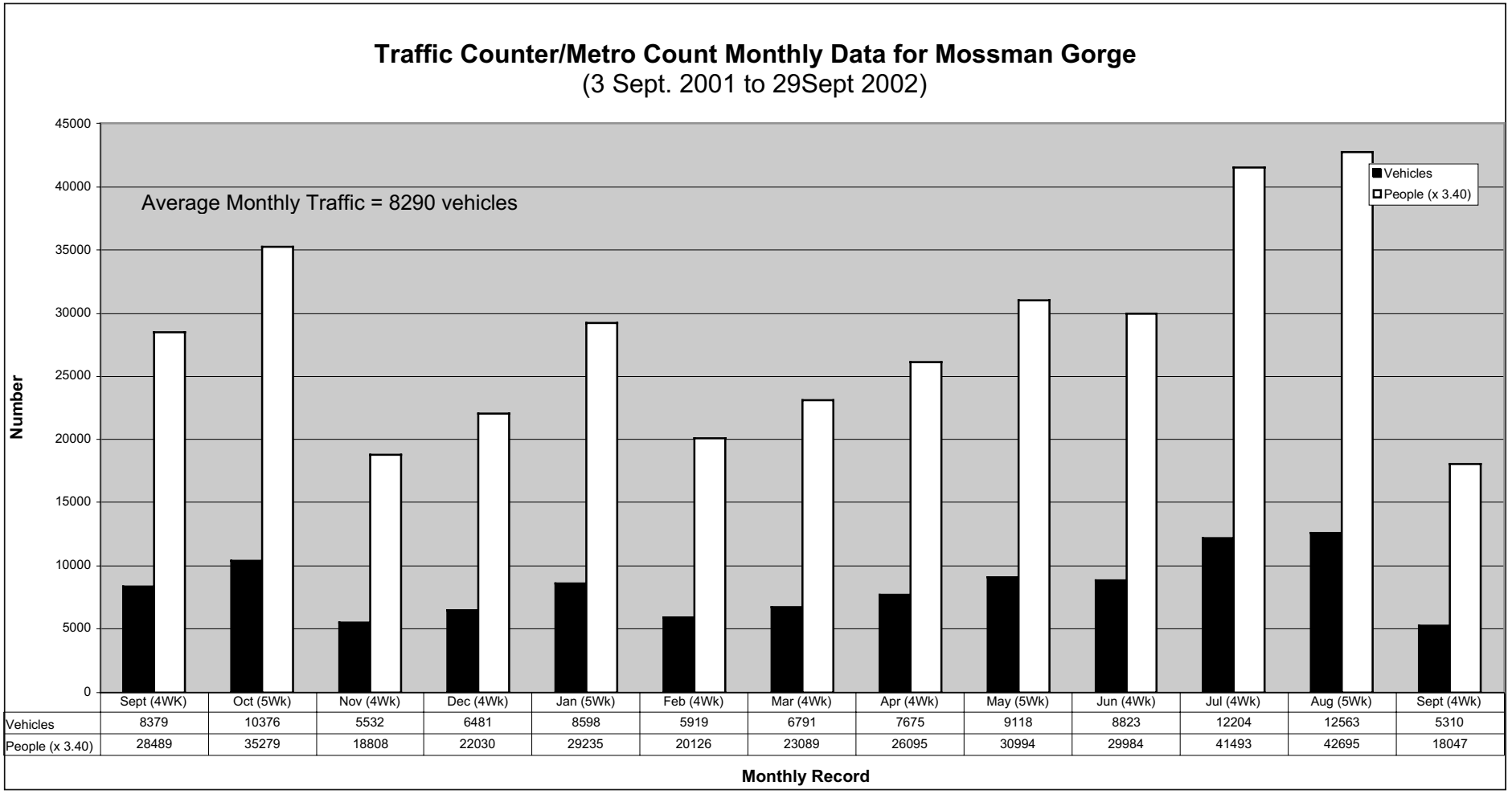
- On average, ***1,924 vehicles*** (range = 1,177 – 3,142) and ***6,543 people*** (range = 4,002 – 10,683) visit Mossman Gorge each week.
- There was one discernible period of increased vehicular traffic levels recorded during sampling: July, Week 1 to August, Week 3, in which vehicle numbers were all above 2,700.
- The highest number of vehicles and visitors was in ***August 2002, Week 2,*** during which week ***3,142 vehicles and 10,683 visitors*** used this site. The quietest period was in September Week 4, in which ***1,177 vehicles*** and ***4,002 visitors*** used Mossman Gorge.

Daily Records **Figure 10 and Table 2**

- On average, ***280 vehicles*** (range = 103 – 549) and ***950 people*** (range = 349 – 1,867) visit Mossman Gorge each day. ***Average weekday use = 272 vehicles per day;***
- Weekends are slightly busier than weekdays with Sunday recording, on average, 314 vehicles (range 155 – 549), and 1,068 people (highest number = 1867 people on 31st March 2002). ***Average weekend use = 299 vehicles per day.***

TRAFFIC COUNTER/METRO COUNT DATA: ***MOSSMAN GORGE***

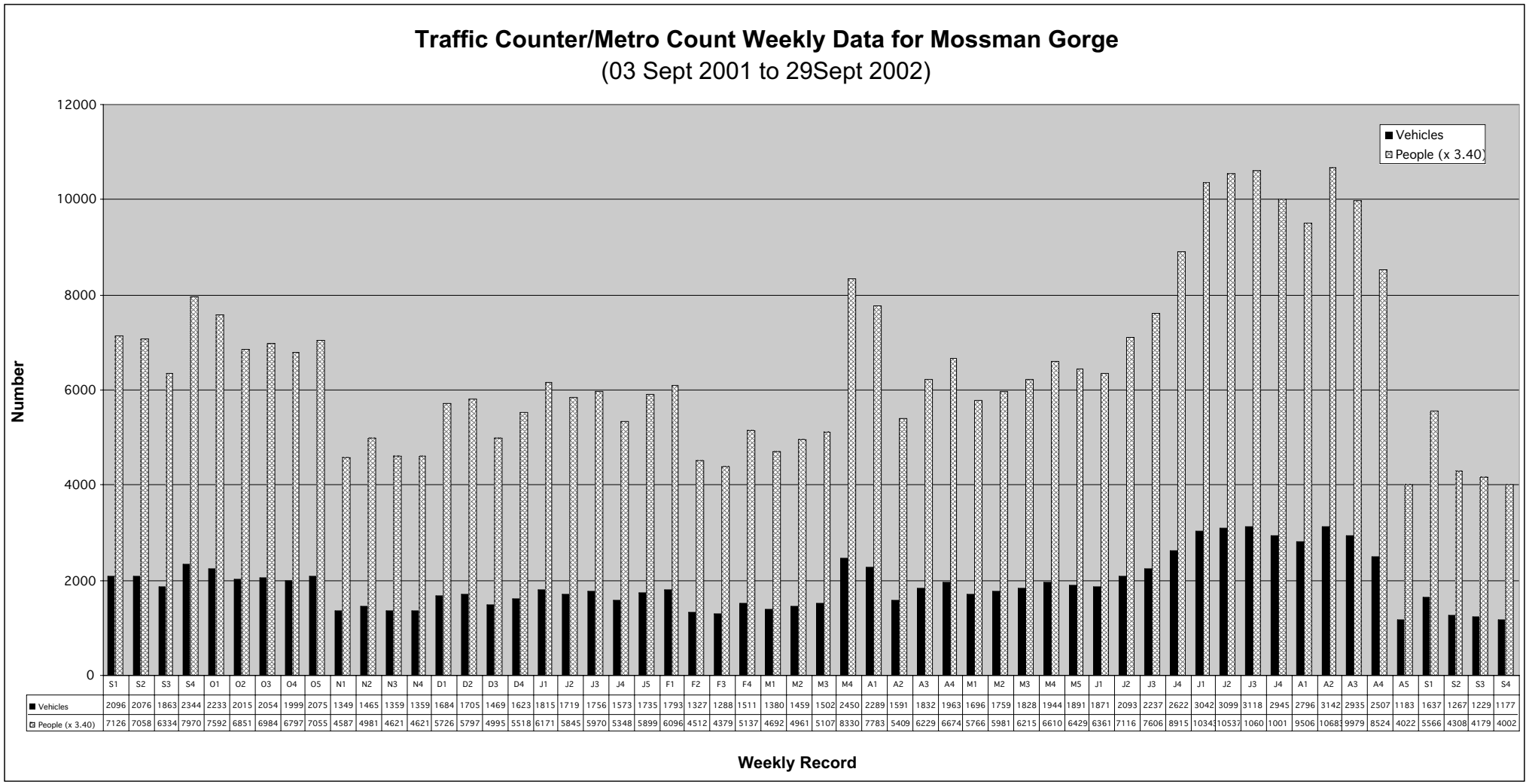
Figure 7: Monthly Records for Vehicles and Visitors.



	Sept (4WK)	Oct (5Wk)	Nov (4Wk)	Dec (4Wk)	Jan (5Wk)	Feb (4Wk)	Mar (4Wk)	Apr (4Wk)	May (5Wk)	Jun (4Wk)	Jul (4Wk)	Aug (5Wk)	Sept (4Wk)
Vehicles	8379	10376	5532	6481	8598	5919	6791	7675	9118	8823	12204	12563	5310
People (x 3.40)	28489	35279	18808	22030	29235	20126	23089	26095	30994	29984	41493	42695	18047

TRAFFIC COUNTER/METRO COUNT DATA: ***MOSSMAN GORGE***

Figure 8: Weekly Records for Vehicles and Visitors.



	S1	S2	S3	S4	O1	O2	O3	O4	O5	N1	N2	N3	N4	D1	D2	D3	D4	J1	J2	J3	J4	J5	F1	F2	F3	F4	M1	M2	M3	M4	A1	A2	A3	A4	M1	M2	M3	M4	M5	J1	J2	J3	J4	J1	J2	J3	J4	A1	A2	A3	A4	A5	S1	S2	S3	S4
Vehicles	2096	2076	1863	2344	2233	2015	2054	1999	2075	1349	1465	1359	1359	1684	1705	1469	1623	1815	1719	1756	1573	1735	1793	1327	1288	1511	1380	1459	1502	2450	2289	1591	1832	1963	1696	1759	1828	1944	1891	1871	2093	2237	2622	3042	3099	3118	2945	2796	3142	2935	2507	1183	1637	1267	1229	1177
People (x 3.40)	7126	7058	6334	7970	7592	6851	6984	6797	7055	4587	4981	4621	4621	5726	5797	4995	5518	6171	5845	5970	5348	5899	6096	4512	4379	5137	4692	4961	5107	8330	7783	5409	6229	6674	5766	5981	6215	6610	6429	6361	7116	7606	8915	10343	10537	1060	1001	9506	10683	9979	8524	4022	5566	4308	4179	4002

TRAFFIC COUNTER/METRO COUNT DATA FOR *MOSSMAN GORGE*

Table 1: Daily Records of Vehicles and Visitors.

SEPTEMBER 2001 Data highlighted in yellow are the daily averages for this month.

2001	MON		TUE		WED		THU		FRI		SAT		SUN	
	Vehicles	*People*	Vehicles	*People*	Vehicles	*People*	Vehicles	*People*	Vehicles	*People*	Vehicles	*People*	Vehicles	*People*
Wk 1 3-9Sept	305	*1037*	316	*1074*	294	*1000*	277	*942*	275	*935*	292	*993*	337	*1146*
Wk 2 10-16Sept	305	*1037*	316	*1074*	294	*1000*	277	*942*	275	*935*	292	*993*	317	*1078*
Wk 3 17-23Sept	258	*877*	291	*989*	258	*877*	227	*772*	233	*792*	281	*955*	315	*1071*
***Wk 4 24-30Sept**	352	*1197*	340	*1156*	329	*1119*	327	*1112*	316	*1074*	302	*1027*	378	*1285*

OCTOBER 2001 Data highlighted in yellow are the daily averages for this month.

2001	MON		TUE		WED		THU		FRI		SAT		SUN	
	Vehicles	*People*	Vehicles	*People*	Vehicles	*People*	Vehicles	*People*	Vehicles	*People*	Vehicles	*People*	Vehicles	*People*
***Wk 1 1-7Oct**	346	*1176*	329	*1119*	320	*1088*	304	*1034*	284	*966*	300	*1020*	350	***1190***
Wk 2 8-14Oct	305	*1037*	294	*1000*	311	*1057*	284	*966*	248	*843*	279	*949*	294	*1000*
Wk 3 15-21Oct	268	*911*	313	*1064*	247	*840*	307	*1044*	295	*1003*	292	*993*	332	*1129*
Wk 4 22-28Oct	205	*697*	312	*1061*	293	*996*	298	*1013*	276	*938*	290	*986*	325	*1105*
Wk 5 29-4 Nov	281	*955*	312	*1061*	293	*996*	298	*1013*	276	*938*	290	*986*	325	*1105*

NOVEMBER 2001 Data highlighted in yellow are daily averages for this month

2001	MON		TUE		WED		THU		FRI		SAT		SUN	
	Vehicles	*People*	Vehicles	*People*	Vehicles	*People*	Vehicles	*People*	Vehicles	*People*	Vehicles	*People*	Vehicles	*People*
Wk 1 5-11Nov	200	*680*	167	*568*	189	*643*	152	*517*	170	*578*	188	*639*	283	*962*
Wk 2 12-18Nov	200	*680*	189	*643*	200	*680*	213	*724*	205	*697*	203	*690*	255	*867*
Wk 3 19-25Nov	200	*680*	178	*605*	195	*663*	183	*622*	188	*639*	196	*666*	219	*745*
Wk 4 26-2Dec	200	*680*	178	*605*	195	*663*	183	*622*	188	*639*	196	*666*	219	*745*

DECEMBER 2001 Data highlighted in yellow are the daily averages for this month.
Blue = Public Holidays

2001	MON		TUE		WED		THU		FRI		SAT		SUN	
	Vehicles	*People*	Vehicles	*People*	Vehicles	*People*	Vehicles	*People*	Vehicles	*People*	Vehicles	*People*	Vehicles	*People*
Wk 1 3-9Dec	200	*680*	230	*782*	255	*867*	219	*745*	210	*714*	222	*755*	348	*1183*
Wk 2 10-16Dec	207	*704*	241	*819*	260	*884*	224	*762*	189	*643*	251	*853*	333	*1132*
***Wk 3 17-23Dec**	258	*877*	269	*908*	252	*857*	186	*632*	174	*592*	120	*408*	210	*714*
***Wk 4 24-30Dec**	136	*462*	179	*609*	252	*857*	246	*836*	267	*908*	294	*1000*	249	*847*

JANUARY 2002 Data highlighted in yellow are the daily averages for this month.
Blue = Public Holidays

2002	MON Vehicles	MON *People*	TUE Vehicles	TUE *People*	WED Vehicles	WED *People*	THU Vehicles	THU *People*	FRI Vehicles	FRI *People*	SAT Vehicles	SAT *People*	SUN Vehicles	SUN *People*
***Wk 1 31Dec-6Jan**	250	*850*	349	*1187*	239	*813*	258	*877*	189	*643*	243	*826*	287	*976*
***Wk 2 7-13Jan**	259	*881*	255	*867*	221	*751*	241	*819*	213	*724*	243	*826*	287	*976*
***Wk 3 14-20Jan**	259	*881*	272	*925*	262	*891*	291	*989*	239	*813*	219	*745*	214	*728*
***Wk 4 21-27Jan**	200	*680*	197	*670*	187	*636*	214	*728*	231	*785*	236	*802*	308	*1047*
Wk 5 28Jan-3Feb	327	*1112*	201	*683*	197	*670*	201	*683*	192	*653*	273	*928*	344	*1170*

FEBRUARY 2002

2002	MON Vehicles	MON *People*	TUE Vehicles	TUE *People*	WED Vehicles	WED *People*	THU Vehicles	THU *People*	FRI Vehicles	FRI *People*	SAT Vehicles	SAT *People*	SUN Vehicles	SUN *People*
Wk 1 4-10Feb	204	*694*	226	*768*	221	*751*	231	*785*	189	*643*	321	*1091*	401	*1363*
Wk 2 11-17Feb	210	*714*	209	*711*	174	*592*	176	*598*	174	*592*	198	*673*	186	*632*
Wk 3 18-24Feb	138	*469*	205	*697*	147	*500*	164	*558*	174	*592*	242	*823*	218	*741*
Wk 4 25-3Mar	194	*660*	198	*673*	177	*602*	200	*680*	179	*609*	259	*881*	304	*1034*

MARCH 2002 Data highlighted in yellow are the daily averages for this month.
Blue = Public Holidays

2002	MON **Vehicles**	MON **People**	TUE *Vehicles*	TUE *People*	WED *Vehicles*	WED *People*	THU *Vehicles*	THU *People*	FRI *Vehicles*	FRI *People*	SAT *Vehicles*	SAT *People*	SUN *Vehicles*	SUN *People*
Wk 1 4-10Mar	157	*534*	147	*500*	177	*602*	190	*646*	166	*564*	242	*823*	301	*1023*
Wk 2 11-17Mar	221	*751*	221	*751*	192	*653*	213	*724*	172	*585*	208	*707*	232	*789*
Wk 3 18-24Mar	177	*602*	193	*656*	193	*656*	168	*571*	199	*677*	211	*717*	361	*1227*
Wk 4 25-31Mar	211	*717*	264	*898*	245	*833*	265	*901*	469	*1595*	447	*1520*	549	*1867*

APRIL 2002

2002	MON **Vehicles**	MON **People**	TUE *Vehicles*	TUE *People*	WED *Vehicles*	WED *People*	THU *Vehicles*	THU *People*	FRI *Vehicles*	FRI *People*	SAT *Vehicles*	SAT *People*	SUN *Vehicles*	SUN *People*
***Wk 1 1-7Apr**	478	*1625*	299	*1017*	369	*1255*	281	*955*	306	*1040*	283	*962*	273	*928*
Wk 2 8-14Apr	241	*819*	242	*823*	219	*745*	229	*779*	204	*694*	244	*830*	212	*721*
Wk 3 15-21Apr	223	*758*	236	*802*	253	*860*	233	*792*	256	*870*	282	*959*	349	*1187*
Wk 4 22-28Apr	280	*952*	265	*901*	263	*894*	343	*1166*	259	*881*	278	*945*	275	*935*

MAY 2002 Data highlighted in yellow are the daily averages for this month.
Blue = Public Holidays

2002	MON Vehicles	MON People	TUE Vehicles	TUE People	WED Vehicles	WED People	THU Vehicles	THU People	FRI Vehicles	FRI People	SAT Vehicles	SAT People	SUN Vehicles	SUN People
Wk 1 29-5May	218	*741*	262	*891*	195	*663*	224	*762*	229	*779*	275	*935*	293	*996*
Wk 2 6-12May	310	*1054*	244	*830*	229	*779*	249	*847*	233	*792*	220	*748*	274	*932*
Wk 3 13-19May	267	*908*	279	*949*	256	*869*	243	*825*	219	*745*	266	*903*	298	*1014*
Wk 4 20-26May	258	*878*	276	*937*	267	*907*	301	*1023*	216	*735*	328	*1114*	298	*1012*
Wk 5 27-02Jun	280	*953*	290	*986*	295	*1002*	233	*793*	238	*808*	272	*923*	283	*961*

JUNE 2002 Blue = Public Holidays.

2002	MON Vehicles	MON People	TUE Vehicles	TUE People	WED Vehicles	WED People	THU Vehicles	THU People	FRI Vehicles	FRI People	SAT Vehicles	SAT People	SUN Vehicles	SUN People
Wk 1 03-09Jun	270	*919*	274	*930*	224	*762*	240	*816*	263	*894*	293	*995*	307	*1043*
Wk 2 10-16Jun	388	*1319*	332	*1130*	269	*913*	256	*869*	277	*942*	306	*1040*	265	*899*
Wk 3 17-23Jun	278	*944*	279	*949*	351	*1193*	294	*999*	316	*1073*	326	*1107*	393	*1335*
***Wk 4 24-30Jun**	377	*1283*	373	*1267*	336	*1142*	368	*1250*	380	*1293*	408	*1387*	380	*1291*

JULY 2002 Data highlighted in yellow are the daily averages for this month. Blue = Public Holidays.

2002	MON Vehicles	MON People	TUE Vehicles	TUE People	WED Vehicles	WED People	THU Vehicles	THU People	FRI Vehicles	FRI People	SAT Vehicles	SAT People	SUN Vehicles	SUN People
***Wk 1 01-07Jul**	428	*1456*	506	*1721*	397 Tsv	*1351*	396	*1346*	401	*1363*	432	*1470*	482	*1639*
Wk 2 08-14Jul	478	*1624*	439	*1492*	414	*1408*	432	*1468*	406	*1380*	434	*1476*	496	*1686*
Wk 3 15-21Jul	462	*1571*	431	*1465*	457	*1553*	439	*1493*	456 Cns	*1550*	405	*1377*	468	*1591*
Wk 4 22-28Jul	411	*1398*	454	*1544*	453	*1540*	431	*1466*	418	*1422*	351	*1193*	427	*1450*

AUGUST 2002

2002	MON Vehicles	MON People	TUE Vehicles	TUE People	WED Vehicles	WED People	THU Vehicles	THU People	FRI Vehicles	FRI People	SAT Vehicles	SAT People	SUN Vehicles	SUN People
Wk 1 29-04Aug	415	*1409*	458	*1558*	420	*1426*	360	*1224*	413	*1403*	362	*1230*	368	*1250*
Wk 2 05-11Aug	444	*1508*	458	*1556*	483	*1641*	439	*1493*	474	*1610*	398	*1354*	446	*1515*
Wk 3 12-18Aug	462	*1569*	441	*1499*	439	*1493*	411	*1397*	370	*1258*	373	*1267*	439	*1493*
Wk 4 19-25Aug	435	*1479*	392	*1332*	454	*1544*	273	*927*	277	*941*	376	*1278*	300	*1020*
Wk 5 26-01Sep	237	*807*	200	*679*	193	*655*	136	*462*	121	*410*	141	*480*	155	*528*

SEPTEMBER 2002 Data highlighted in yellow are the daily averages for this month.
Data highlighted in green are the daily averages for the entire data set.
Note: visitor numbers vary throughout this month, most likely due to malfunctioning metro count system.

2002	MON Vehicles	MON People	TUE *Vehicles*	TUE *People*	WED *Vehicles*	WED *People*	THU *Vehicles*	THU *People*	FRI *Vehicles*	FRI *People*	SAT *Vehicles*	SAT *People*	SUN *Vehicles*	SUN *People*
Wk 1 02-08Sept	119	*405*	219	*745*	270	*917*	232	*790*	250	*848*	287	*975*	260	*882*
Wk 2 09-15Sept	241	*818*	182	*618*	177	*602*	112	*382*	265	*902*	143	*487*	147	*499*
Wk 3 16-22Sept	156	*530*	114	*387*	156	*531*	119	*403*	265	*902*	215	*731*	204	*694*
***Wk 4 23-29Sept**	172	*585*	113	*383*	105	*355*	103	*349*	265	*902*	215	*731*	204	*694*
AVERAGES	282	*960*	278	*946*	274	*931*	259	*879*	265	*902*	283	*961*	314	*1068*

Note: *These dates indicate school holidays.
People estimates are based on vehicle numbers x 3.4, the average number of people in vehicles established from questionnaire, item #8.
Data that are highlighted are not included in the overall averages.

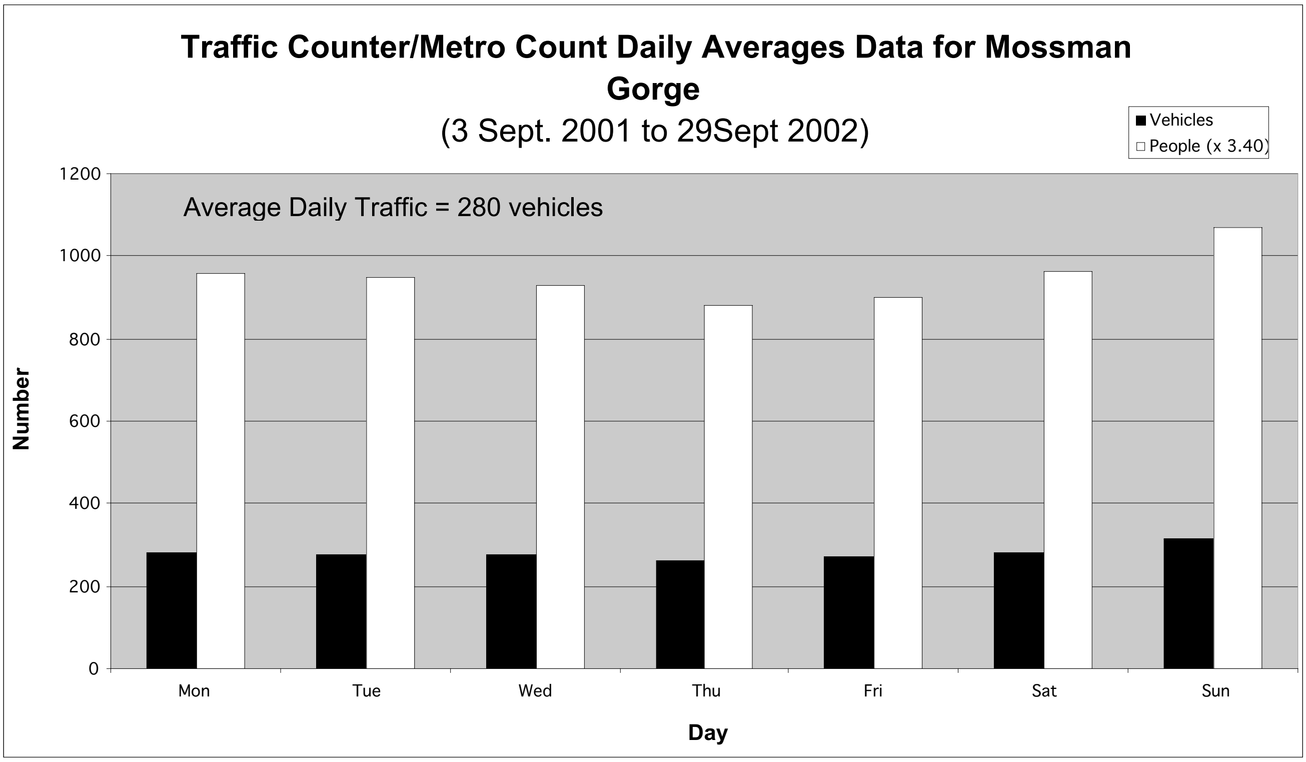


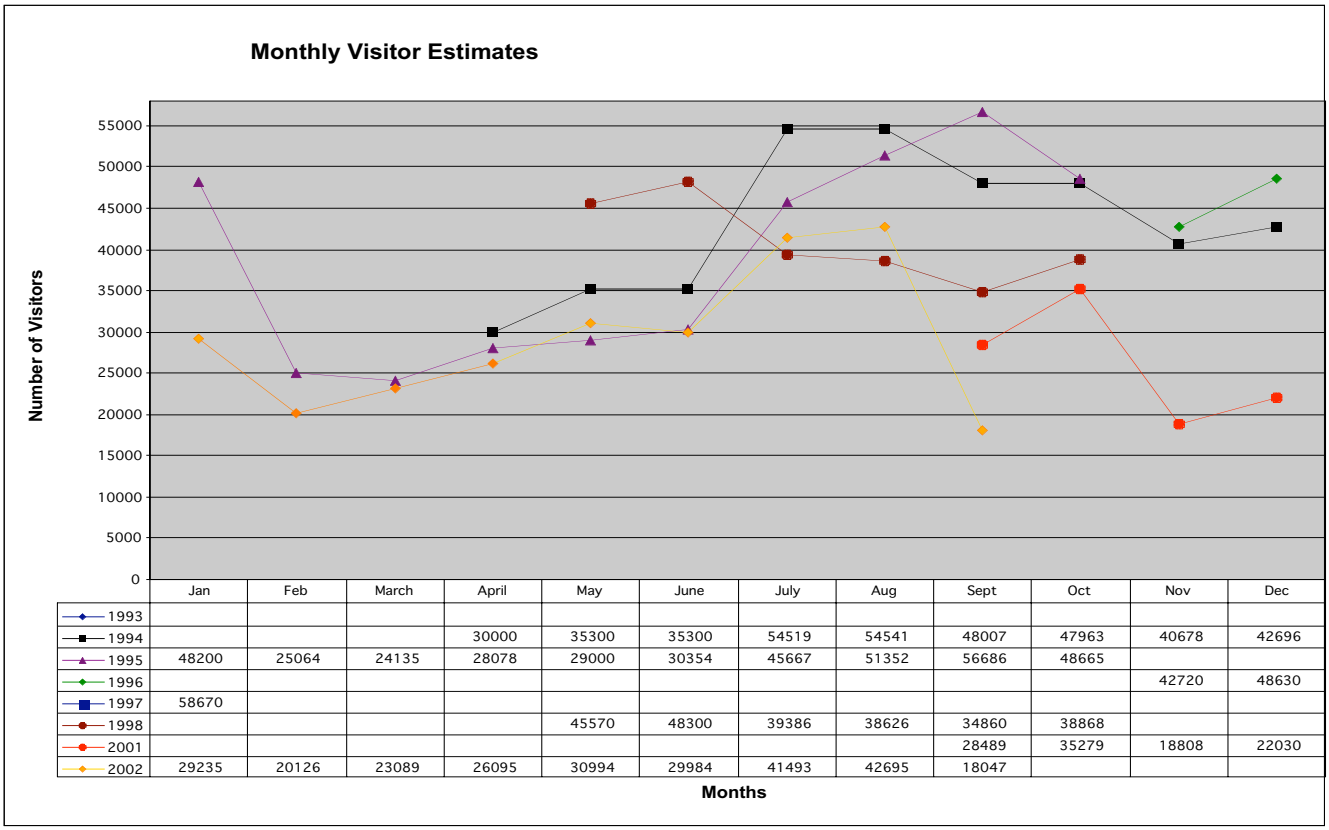
Figure 9: Average daily vehicle and visitor numbers for Mossman Gorge.

Comparative Traffic Counter Data : *Mossman Gorge*

(Source: Manidis Roberts 1993/1994 study, Bentrupperbäumer & Reser, 2000, WTMA Traffic Counter Records 1994-1997)

Figure 10: Monthly visitor estimates established since 1994

- Visitor estimates for the period 1994-1998 have been based on 3.5 people per vehicle as established by the Manidis Roberts 1993/94 study;
- Visitor estimates for 2001-2002 period have been based on 3.4 people per vehicle as established by this study;
- Visitor estimates for this study period, 2001-2002, appear to be lower than all previous years;
- Consistently, monthly visitor estimates through the mid year period are the highest –July, August.



	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
1993												
1994				30000	35300	35300	54519	54541	48007	47963	40678	42696
1995	48200	25064	24135	28078	29000	30354	45667	51352	56686	48665		
1996											42720	48630
1997	58670											
1998					45570	48300	39386	38626	34860	38868		
2001									28489	35279	18808	22030
2002	29235	20126	23089	26095	30994	29984	41493	42695	18047			

Figure 10: Monthly visitor estimates for Mossman Gorge established from WTMA traffic counter data 1994 – 1997, Bentrupperbäumer 1998 study, and this study, 2001-2002.

SECTION FOUR

Section Four

Management Considerations

- Presentation
- Opportunities
- Specific Problems & Issues

Presentation

- **Significance** ***WHA Status, Natural & Cultural Attributes, Historical Context***
- **Management Agency** ***Identity and Presence, Conservation and Protection***
- **Information** ***Sources and Signage***
- **Structural Features** ***Layout and Design, Infrastructure and Facilities***

The Wet Tropics Management Authority (WTMA) was established to manage the area to meet Government commitments under the World Heritage Convention which are specifically to protect, conserve, ***present****, transmit to future generations, and rehabilitate the Wet Tropics WHA*

(WTMA, 2000, pg.4).

Presentation in the context of a World Heritage property and with respect to WTWHA visitor sites encompasses the significance and meaning of World Heritage status, the nature of the natural and cultural attributes as 'heritage values' for which an area has been listed, and the historical context of the site, including its natural history and history of human use, association and meaning. Presentation also encompasses a number of other management responsibilities, including maintenance, communication, site design, amenity provision, and identification of those authorities and agencies responsible for the management of the site. While many of these considerations are often subsumed under the term 'interpretation', the term presentation is used here along with subheadings to more directly address the specific mandate and multiple responsibilities of a World Heritage management authority.

Significance: *WHA Status, Natural and Cultural Attributes, Historical Context*

WHA Status The presentation of Mossman Gorge as a Wet Tropics World Heritage Area site (WTWHA) compared to the other sites surveyed in this research is reasonably effective. Approximately 41.7 percent of respondents were aware that this site was a part of the WTWHA (Section 1 Visitor Survey pg 34-35), which is a much higher percentage compared to Murray Falls (14%). Mossman Gorge is one of three sites surveyed which had a sign specifically identifying it as a WTWHA site, although this was located along the access road (Section 2 Site Inventory pg 60-61).

Natural and Cultural Attributes A principal aspect of presentation of a WTWHA site is natural and cultural heritage interpretation. Such interpretive signage is absent from Mossman Gorge or at least very minimal in the case of natural/ecological information (Section 2 Site Inventory pg 62). It is the wish of the Mossman Gorge Aboriginal Community that indigenous cultural attributes of the site be presented by those members of their community who have the authority to do so (Bentrupperbäumer & Reser, 2000; Bentrupperbäumer et al, 2001). The actual involvement of indigenous people in a very visible and meaningful way in the management of this site and as guides for visitors (Section 1 Visitor Comments pg 44-45), provides another important way of presenting both the historic and contemporary indigenous cultural heritage significance of Mossman Gorge. Such involvement is also the wish of the community members.

Management Agency: *Identity and Presence, Conservation and Protection*

Identity & Presence A related presentation issue is level of visitor and other user awareness of the management agency (ies) responsible for management of the site. It is a concern that 87 percent of visitors did not know who the management agency responsible for Mossman Gorge was (Section 1 Visitor Survey pg 34-35). This is noteworthy given that this site attracts repeat visits from both local and domestic Australian visitors (Section 1 pg 22-23), and has signage that specifically identifies the site as the Mossman Gorge National Park (Section 2 Site Inventory pg 60-61). This lack of awareness and/or confusion amongst visitors has clear implications for the nonreporting of critical incidents or damage, the provision of any type of feedback to managers, the public representation of agencies, and management performance monitoring.

Conservation & Protection Visitors and other users are on the whole satisfied with the overall management of Mossman Gorge as indicated by direct and indirect item responses relating to their appraisal of the condition and management of the natural and built environments (Section 1 Visitor Survey pgs 26-27; 32-33). However, there are a number of identifiable issues relating to the immediate natural environment such as use of undesignated tracks that are a concern (Butler, 2002).

Information *Sources and Signage*

Sources Presentation of the WTWHA and the decision to visit sites such as Mossman Gorge is closely linked to and influenced by the way in which relevant information is accessed or sourced. Interestingly, *word of mouth* was the most important source of information about Mossman Gorge for visitors (Section 1 Visitor Survey, pg 22-23). Given this, a carefully considered site-based information dissemination program needs to be adopted to insure that these visitors access all relevant and critical information.

Signage Another important presentation issue and management responsibility at sites such as Mossman Gorge is the provision of signage that clearly identifies rules and regulations, safety issues, and directions. Here such signage is evident throughout (Section 2 Sign Inventory pg 60-65). In addition, visitor appraisal of various aspects of such signage was moderately high (Section 1 Visitor Survey pg 30), and their overall condition was found to be good (Section 2 Sign Inventory pg 60-65).

Structural Features *Layout and Design, Infrastructure and Facilities*

Layout and Design The current site layout and design at Mossman Gorge appears to have considerable problems in terms of legibility in particular (Section 2 Site Inventory pg 56-57). Visitors who have not been before are often confused as to where to go, what to do, and what is available. During the 1999, 2001 and 2002 survey distribution field work for this and pervious research, field staff were approached on many occasions by many visitors asking for information about these aspects of the site. In addition, behavioural observations and visitor comments on the surveys reflect this general confusion. The layout and nature of the site, and the visitation levels makes it very difficult to prevent potential use conflict or to distribute visitors over the site in a way which maximises choice and options. Nevertheless, there are a number of design solutions that could be adopted to address these issues. The layout and design of the car park is also a considerable problem as documented in many of our reports (Bentrupperbäumer & Reser, 2000; Bentrupperbäumer et al, 2001; Bentrupperbäumer & Reser, 2002a). Given this extensive documentation it is an issue that will not be addressed here.

Infrastructure and Facilities The infrastructure and facilities at Mossman Gorge appear to provide for most of the visitor needs and, as indicated by direct and indirect item responses relating to visitor appraisal of the adequacy, appeal, condition and management of the built environment, are reasonably functional (Section 1 Visitor Survey pgs 32-33). All facilities present are well used (Section 1 Visitor Survey pgs 32-33). However, there are those that appear to be overused and are now in need of upgrading (Section 2 Site Inventory pg 56-57).

Opportunities

- **Recreational** **Activity-based Opportunities**
- **Experiential** **Experience-based Opportunities**
- **Educational** **Knowledge-based Opportunities**

Opportunities in the context of protected area visitor sites have traditionally been seen to encompass a spectrum of activity-based recreation outcomes within which experience-based opportunities have been embedded. Knowledge-based considerations have on the whole been absent. Here in this discussion this concept has been broadened to profile and highlight the importance of experience-based and knowledge-based opportunities in addition to activity-based opportunities at sites such as the Mossman Gorge as separate but interlinked entities. The term opportunities along with the subheadings thus allow for a more direct linking of management considerations to specific needs of visitors in terms of opportunities sought, available and utilised.

Recreational *Activity-based*

Activity-based The activity-based recreational opportunities available at Mossman Gorge are largely those of a National Park day use site, and include swimming, picnicing, a short walking track, and open grassed areas for other activities. The activities reported by respondents (Section 1 Visitor Survey pg 32-33) indicate that the site was providing for and facilitating those activities which most visitors were seeking in a reasonable way.

Experiential *Experience-based*

Experience-based Experience-based opportunities at Mossman Gorge include nature watching, relaxation, as well as the opportunity of encountering, experiencing, and appreciating the WTWHA. Such opportunities were identified by visitors as being the most important in terms of their reasons for visiting this site (Section 1 Visitor Survey pg 24-25), and were significantly more important than activity-based reasons. Experiences such as solitude, 'wilderness' experience, and wildlife encounters are somewhat difficult to achieve at Mossman Gorge given its layout, extent, general character, history and pattern of use, and the high visitation levels.

Educational *Knowledge-based Opportunities*

Knowledge-based Knowledge-based opportunities at Mossman Gorge are numerous, diverse, and challenging. Such opportunities are clearly linked to the natural and cultural attributes of the site, as well as the human use and need for such places. The immediate availability and easy accessibility of a variety of forest and landscape types, the diversity of flora and fauna present, the indigenous cultural significance of the site and the management challenges associated with presenting, preserving and conserving such places provide endless knowledge-based opportunities. Such opportunities are rarely acknowledged as an important contributor to the spectrum of site level opportunities despite their public good, educational, management and international significance.

Specific Problems and Issues

- **Problems** ***Risk Activity and Regulation Violation***
- **Issues** ***Use/User Conflicts, Inappropriate Behaviour, Crowding and Overuse***

Mossman Gorge presents a number of substantial problems and issues that need to be considered. The following is an extract from the report which presents the combined data from all of the ten site researched in this project (Bentrupperbäumer & Reser, 2002a, pgs 90-91).

" In the writing of this report, and indeed in the researching and thinking about this project, Mossman Gorge has had a particular salience and resonance. It is clearly a World Heritage visitor site and a WTWHA-local community context which comes up again and again in media coverage, in planning documents, as a popular research venue, and with respect to dramatic visitation numbers and concomitant pressures. Mossman Gorge is also an icon WTWHA site, with images of Mossman Gorge in the background on Qantas flights, in almost every FNQ tourist brochure, on most FNQ area relevant web sites. Mossman Gorge has also been a research location and focus for Rainforest CRC Project 4.1 since its inception in 1997, and has been a key survey site in the Projects 1999 and 2001 site based surveys. As mentioned Mossman Gorge is also a site at which a surprisingly large proportion of WTWHA visitors have an important – and for many their only - WTWHA experience. In our current site based survey fully 25% of our respondents were surveyed at Mossman Gorge, notwithstanding our survey net being cast across ten popular sites. The numbers of visitors moving through Mossman Gorge also bring into relief the pressures and problems which are generic to many WTWHA and other WHA visitor sites, with the overtaxed and overwhelmed parking lot and facilities constituting a stark metaphor and symbolic statement of the planning and site design challenges for the future. Indeed the 'carrying capacity' problem at Mossman Gorge in the public domain, and the concentration/distribution debates which invariably attend any discussion of the 'problem', communicate the charged public saliency and political currency of the crowding problem and attendant management challenges.

Mossman Gorge is also a very instructive example of a site with a long local history of use, with adjacent indigenous and nonindigenous communities whose everyday life is dramatically impacted by the presence, status, and visitation to and use of the site. These factors again bring into relief the other side of the psychosocial impacts of visitation and use to the WTWHA, i.e., how such visitation and use impacts on the individual experience, social fabric, and quality of life and environment of adjacent communities. In the case of Mossman Gorge, for the adjacent Aboriginal community, 'a road runs through it', with the site itself being an integral part of what is still a living landscape and cultural estate. Sequenced research projects with the Mossman community addressing the psychosocial impacts of visitation and use on the community (Bentrupperbäumer & Reser, 2000) and community development and planning considerations in the context of WTWHA visitation and use (Bentrupperbäumer et al., 2001) provide a comprehensive documentation of the issues, the impacts, and the challenges, for partnership management of a WTWHA site. These North Queensland research findings reflect a classic issue and simply underscore an extensive outdoor recreation and psychological research literature on carrying capacity and crowding (e.g., Manning, 1999; Lindberg et al., 1997) which documents the salience and the consequences of experienced crowding across a spectrum of leisure activities and leisure venues. National park and wilderness settings are venues where the nature of the environment and the experience opportunities people are seeking converge to make high numbers of visitors a genuine issue and concern. The nature of the WTWHA and FNQ region generally, and the fact that 34 percent of surveyed visitors to WTWHA sites are in fact local visitors would suggest that experienced crowding at sites is a factor which is discordant with visitors' prior experience and/or expectations, and which undoubtedly diminishes enjoyment and appraisals of effective management.

Sites such as Mossman Gorge, which was a focal site in this current research and survey, and which has been the focus of a number of 4th years honours and postgraduate research theses (e.g, Butler, 2002, Karger, 1997; Lines, 1999; Perrett, 1998) illustrate the implications of this psychosocial impact perspective. The traffic and visitor number data clearly communicates that the volume of visitors passing through this one WTWHA site is equivalent to the numbers of visitors passing through perhaps 40 or 50 less frequented WHA sites. It is clear that numbers of visitors are impacting on the natural and social environment at Mossman Gorge in multiple ways. Our previous site based survey report documented the impacts of visitation and use at the Mossman site on the adjacent Aboriginal community at Mossman, for example. From a WTMA perspective it would seem to be very important to address the

fact that 25.6 percent of all of the visitors sampled in this current research exercise over ten popular WTWHA sites were in fact visiting Mossman Gorge. While the biophysical impacts of this level of visitation and use at Mossman Gorge may be 'sustainable' for the proximate future, given the hardened nature of the site, the nature and extent of the psychosocial impacts of this level of use on individual experience, on the presentation and appreciation of World Heritage values, on the adjacent indigenous and nonindigenous communities, are only beginning to be systematically researched, conceptualized, and monitored – and may not be at all sustainable. By collecting and examining data such as relative visitor numbers and traffic flow over time, across ten sites, and annual, seasonal, monthly, weekly, and daily peaks and averages, it is possible to see and appreciate the disproportionate magnitude of the psychosocial impacts being experienced by visitors to Mossman Gorge. This is not to suggest that the average visitor to Mossman Gorge is having a bad visit or experience. What is interesting, indeed fascinating, about Mossman Gorge, is that notwithstanding clear pressures and problems, it has received some of the highest appraisal ratings we have obtained from WTWHA sites. But there is a need to better understand current impacting processes with respect to their impact on individual experience, and to what extent many experience options in a site such as Mossman are ruled out by the sheer number of people visiting this site."

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WTWHA Reports 2001/2002

The reports produced by the Rainforest CRC Project 4.1 research team for the 2001 and 2002 Wet Tropics World Heritage Area site surveys and the Wet Tropics World Heritage Area community survey are listed below.

WTWHA Site Level Data Reports:

Bentrupperbäumer, J. M. (2002a) *Murray Falls: Site Level Data Report 2001/2002*. Rainforest Cooperative Research Centre: Cairns.

Bentrupperbäumer, J. M. (2002b) *Davies Creek: Site Level Data Report 2001/2002*. Rainforest Cooperative Research Centre: Cairns.

Bentrupperbäumer, J. M. (2002c) *Barron Falls: Site Level Data Report 2001/2002*. Rainforest Cooperative Research Centre: Cairns.

Bentrupperbäumer, J. M. (2002d) *The Crater: Site Level Data Report 2001/2002*. Rainforest Cooperative Research Centre: Cairns.

Bentrupperbäumer, J. M. (2002e) *Lake Barrine: Site Level Data Report 2001/2002*. Rainforest Cooperative Research Centre: Cairns.

Bentrupperbäumer, J. M. (2002f) *Marrdja: Site Level Data Report 2001/2002*. Rainforest Cooperative Research Centre: Cairns.

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Bentrupperbäumer, J. M. (2002h) *Goldsborough: Site Level Data Report 2001/2002*. Rainforest Cooperative Research Centre: Cairns.

Bentrupperbäumer, J. M. (2002i) *Henrietta Creek: Site Level Data Report 2001/2002*. Rainforest Cooperative Research Centre: Cairns.

Bentrupperbäumer, J. M. (2002j) *Mossman Gorge: Site Level Data Report 2001/2002*. Rainforest Cooperative Research Centre: Cairns.

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- Attachment: *Research Procedural Manual*: *Measuring and Monitoring the Impacts of Visitation and Use in the Wet Tropics World Heritage Area*. Rainforest Cooperative Research Centre: Cairns.

WTWHA Community Survey Reports:

Bentrupperbäumer, J. M. & Reser, J.P. (2002b) *The Role of the Wet Tropics in the Life of the Community: A Wet Tropics World Heritage Area Community Survey 2001/2002*. Rainforest Cooperative Research Centre: Cairns.

- Attachment: Research Procedural Manual: Wet Tropics World Heritage Area Community Survey 2001/2002. Rainforest Cooperative Research Centre: Cairns.