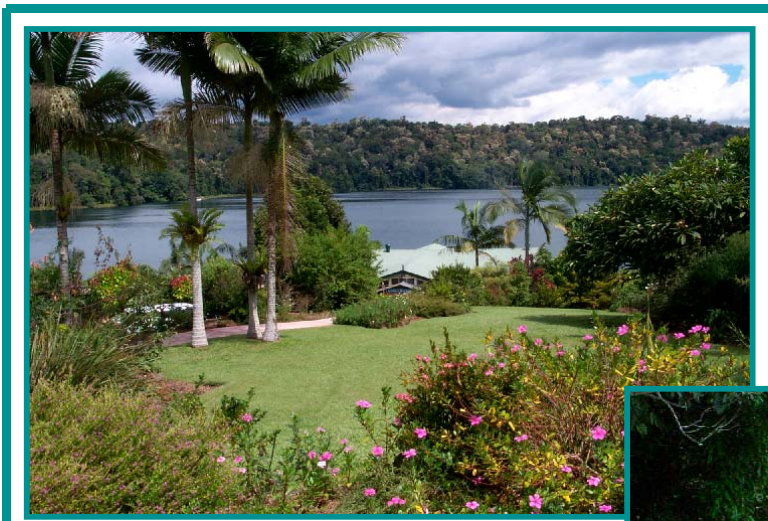


Lake Barrine

Site Level Data Report

2001/2002



Joan M Bentrupperbäumer



Rainforest CRC

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December 2002

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 analytical framework, survey instruments, and methodologies for this multidisciplinary 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 analytical 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 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.

A. Data Processors

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

B. Field Assistants across the region

Kristie Ashden, Rosanna Brown, Shannon Bros, Megan Campbell, Margit Cianelli, Campbell Clarke, Laurel Cooper, Cheryl Cornelius, 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 Pegaroro, 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 Lake Barrine

Bronwyn Guy, Roger Wilkinson, Joan Bentrupperbäumer (Field Supervisors), Michelle George, Rosanna Brown, Josh Guy, Lisa Martin, Denise Lievore.
Rik Morgan (Traffic Counter)

D. Research Colleagues

Dr. Robyn Wilson, Assoc. Prof. Steve Turton and Dr Miriam Goosem.

E. WTMA Personnel

Max Chappell, Campbell Clarke, Dr Steve Goosem and Ellen Weber.

Funding:

This research (Site-Level Visitor Survey across ten WTWHA sites) together with the WTWHA Community Survey (Contract # 654) has been funded by the Wet Tropics Management Authority (20%), the Rainforest CRC (26%), and James Cook University (In-kind infrastructure and services - 54%).

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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.

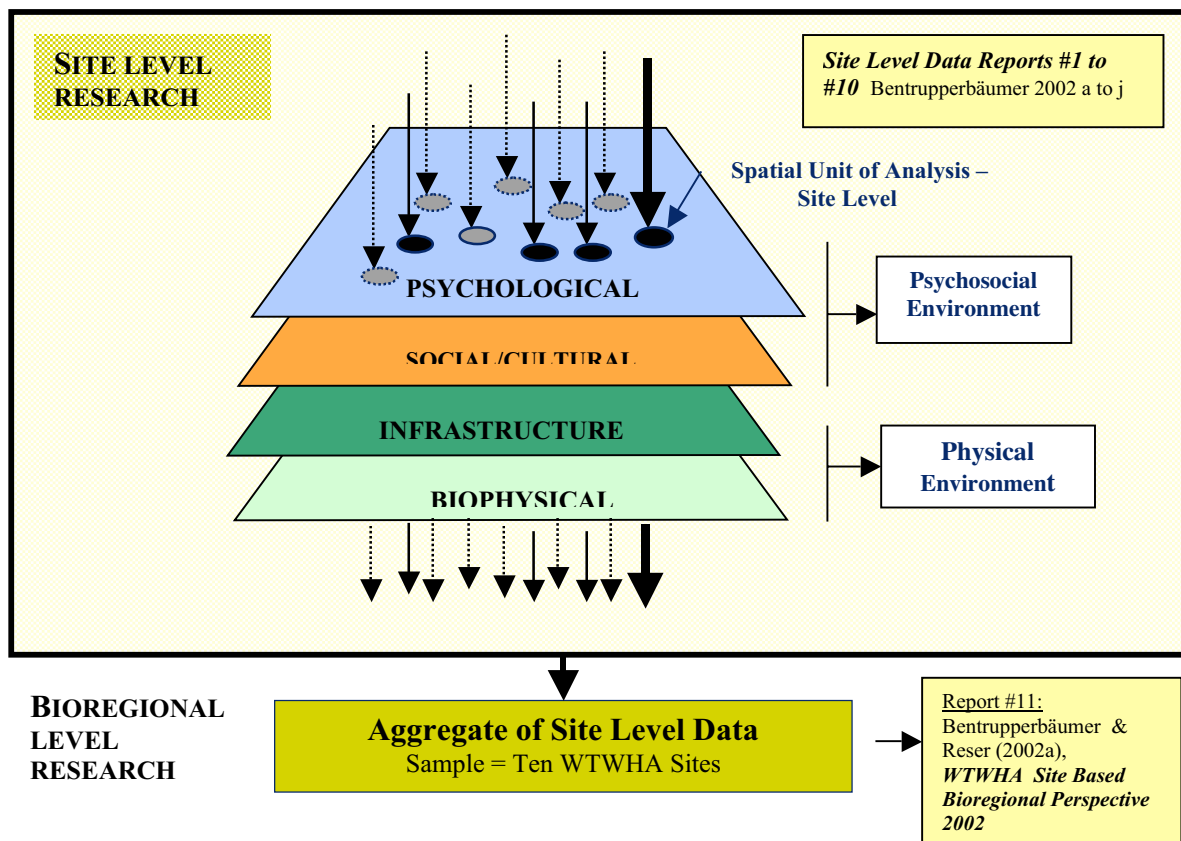


Figure 1: Diagrammatic representation of the research layers, domains and report outputs for this research .

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, *Lake Barrine*, 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

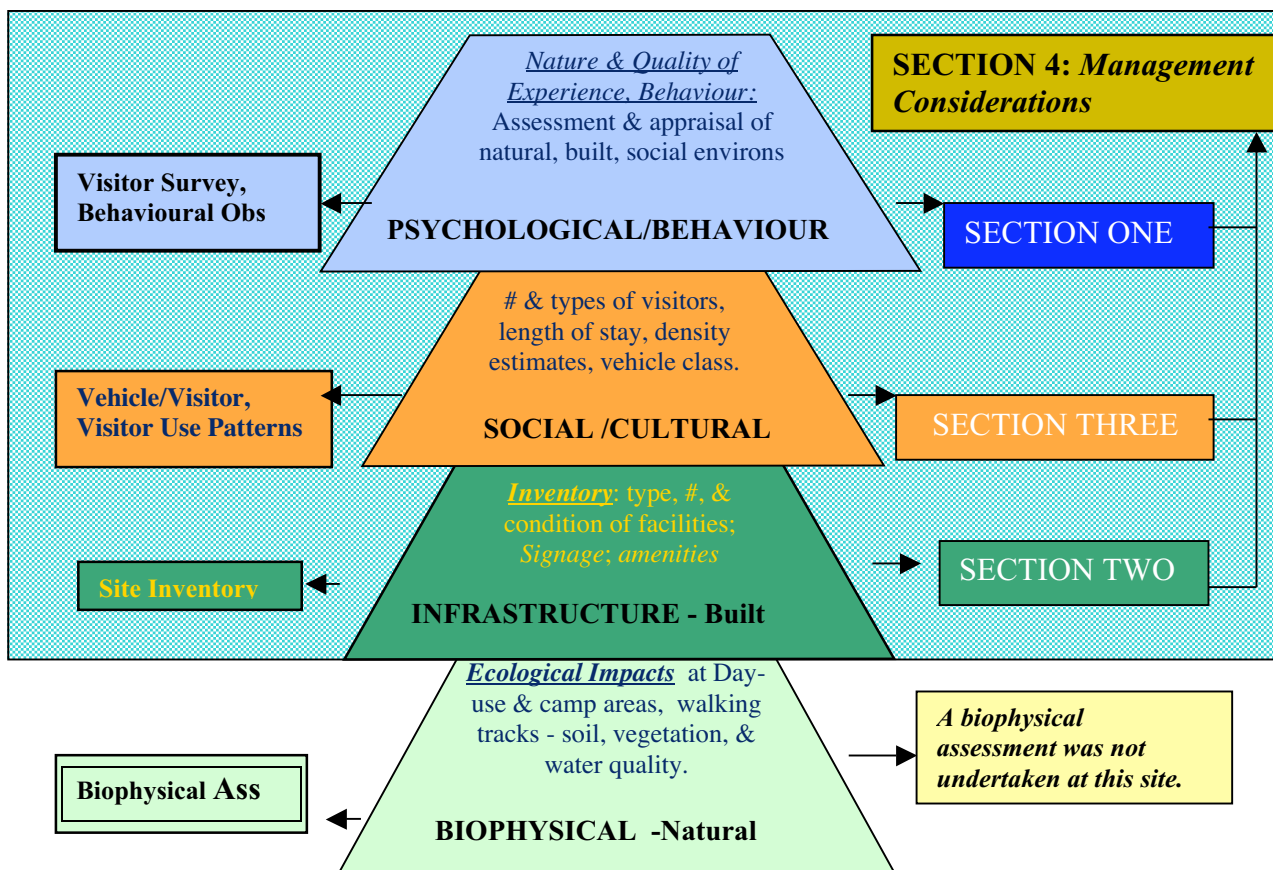


Figure 2: Diagrammatic representation of the report layout and report sections.

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 & 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

Lake Barrine is situated besides the Gilles Highway, between Cairns and Yungaburra. Lake Barrine is a Wet Tropics World Heritage site and can be found in the tableland 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

Lake Barrine is a volcanic crater lake that resulted from two volcanic explosions. It is surrounded by dense rainforest, which includes many large curtain fig trees, some kauri trees, palms, ferns and vines (Thomas, 1994). Compared to other sites in the bioregion, Lake Barrine has a cooler climate and lower rainfall, typical of the tablelands and highlands. The lush forests and diversity of plants, supports a diverse range of wildlife, in particular, turtles, water dragons, pythons, musky rat kangaroos and birdlife.

Indigenous and Non indigenous Cultural Environment

The area around Lake Barrine had been traditionally occupied by two Indigenous tribes: Ngadjon-jii, and Yidinydji (Huxley, 1998; DNRM, 2001). The lake was called: Baranay. It is believed that one tribe occupied the water, and the other, the land. Ngadjon-jii dreamtime stories describe the eruption of the volcano where two men broke a taboo and angered the major spirit of the area, the rainbow serpent. As a consequence, the earth roared and opened up, thus forming the lake (Dixon, 1972, cited in Huxley, 1998). Non Indigenous occupation of Lake Barrine goes back to 1923, when George Curry was given perpetual lease over one acre of the land. The timber tea house that is situated on the lake's edge was built in the 1930s. Since then, the land has been passed down through three generations of the Curry family (Lake Barrine website.n.d).

Built Environment

The Lake Barrine site has been designed for day usage with the following facilities: car park area, picnic areas, picnic tables, toilet facilities, shelter shed, swimming facilities, tea house and a walking track. Signage is evident at the site. The layout of the site is presented in Figure 4. See Section 2 for details of infrastructure/built environment.

Opportunities

Recreational The main activity-based recreational opportunities available at this site are swimming, picnicking, and walking (see Section 1 for details). There is one main walking track nearby, of which is a rainforest circuit walk. This track is classified as a *Graded Track* (Wet Tropics Walking Strategy, 2001). The current status of the tracks is outlined in detail in Section 2. Visitor comments and usage relevant to the tracks and infrastructure are presented in Section 1. Other recreational opportunities available include: photography and bird/wildlife watching. There is also a substantial commercial presence providing facilities such as boat cruise, café/restaurant, interpretation centre, etc.

Experiential In addition to the activity-based recreational opportunities outlined above, Lake Barrine provides important experiential opportunities such as nature appreciation and experience including observing scenery and possible wildlife encounters, socialising with family and friends, rest and respite.

Visitation

Lake Barrine experiences relatively high levels of visitation with approximately 192,000 visitors per year (Mossman Gorge > 400,00 visitors per year). This visitation is highest in July and August (6118-7717 vehicles) and lowest in February (2399 vehicles), and is spread evenly across the week days but with considerable increase during weekends.

Site Maps



Wet Tropics World Heritage Area of Australia

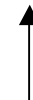


Figure 3: Site location within the Wet Tropics World Heritage Area.

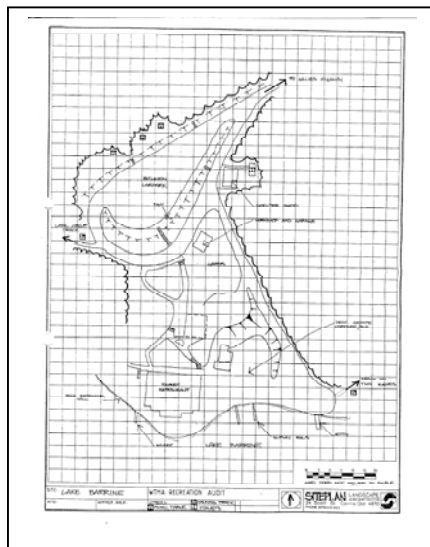


Figure 4: Lake Barrine site map. (Source: SitePlan Landscape Architects, 1993)

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 Lake Barrine 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 interpretative 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

Lake Barrine 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 Lake Barrine 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 380.

Visitor Profile

- Lake Barrine is an *important site for Australian visitors*, in particular *locals*.
- It is a site most frequently used by people between *30 and 39 years of age* (average age = 42 years) who travel in a *private* car.

Prior Information Sources used

- Most people know of Lake Barrine because they *have been before*. *Word of mouth* is another important source of information. Very few visitors to Lake Barrine use information from the web.

Reasons for Visiting

- The primary reason given for why people visit Lake Barrine is to *see the natural features and scenery*.

Visitor Appraisal of Natural Environment

- Visitors find the *natural features* of Lake Barrine to be *appealing, interesting* and in *good condition*.
- Some visitors expect a greater diversity of *wildlife* to be present at the site.

Time Spent and Activities Engaged in

- Visitors spend just enough time at Lake Barrine to visit the café and/or take a short walk – *one to two hours*. Very few visitors spend more than two hours at the site.
- Very few visitors go to Lake Barrine for a picnic.

Visitor Appraisal of Signage

- Of the information types present at the site, *natural/ecological information* received the highest assessment.
- Most visitors found the *rules and regulations* easy to determine, understand and locate.
- *Cultural and historical information* was the type of additional information most frequently sought by visitors.

Visitor Appraisal of Built Environment

- Overall, visitors were satisfied with the *condition and appeal* of the facilities.
- The most frequently used facility was the café, followed by the toilet facilities.

Visitor Knowledge of Management Agencies

- Visitors on the whole were *unfamiliar* with the agency responsible for managing Lake Barrine.
- The World Heritage status of Lake Barrine was also *unknown* to the vast majority of visitors.

Visitor Appraisal of Social Environment

- *Experienced crowding* did not appear to be a problem for the majority of visitors to Lake Barrine.

Experience & Satisfaction

- Visitor *satisfaction* as measured by enjoyment and worth the money was moderate, however, visitors were disappointment with some aspects of the site.

Comments

Visitor comments in regards to Lake Barrine were both positive and negative.

- The most frequent negative comments made about Lake Barrine focused on the lack of *disabled access* and *parking conditions*. Aspects of the social environment were also a concern, with visitors commenting that the *speaker on the tour boat was too loud* and that the *site was too over the top*.
- Comments that suggested improvements to the site focused on:
 - improved parking,
 - better disabled access
 - safer railings around lakeside
 - maintaining indigenous cultural information.
- Positive comments on the site focused on the maintenance of the gardens, and the good facilities.

Behavioural Observations

From the behaviours recorded at Lake Barrine in September 2001 and April 2002, the following events were most frequently observed.

- **Interaction with wildlife**

During both stages of data collection, visitors to Lake Barrine were often seen feeding bush turkeys and water birds.

- **Inappropriate Behaviour**

The inappropriate behaviour most often observed was linked to visitors in vehicles. Some visitors played loud music, while others expressed their frustration with the parking conditions, narrow access road, and congestion by beeping their horns. Some tourists were also seen dropping cigarette butts in the sheltered area.



Section Two:

Infrastructure Inventory and Profile

Key Findings

Site Infrastructure Inventory & Assessment

(excluding the commercial area)

- Lake Barrine has four distinct activity nodes – *Car Park, Picnic Area, Commercial Area and Walking Track*.
- Within each of these activity nodes a variety of *infrastructure* has been established.

Car Parks

- There are three main car park areas, on private and public land.
- The top car park is the public area and the largest. No designated parking is present.

Picnic Area

- There are two separate and small public picnic areas.
- The main structure of the first picnic area is a large shelter shed with tables and benches. Toilets are located along side of this building.
- The second picnic area is situated beside the lake and has very limited facilities.

Walking Track to Twin Kauri Pines

- The track is highly structured as a boardwalk and so is easily accessible and is currently in good condition..
- Interpretive signage is located at the feature of the walk, the twin Kauri Pines.
- Additional walks are present but these have not been assessed.

Site Information and Signage

(excluding the commercial information centre and signage)

- A total of **19 sign structures containing 26 sets of information** relevant to Lake Barrine were recorded along the main road, access road and at Lake Barrine itself.
- Most of these signs were for *visitor orientation and advice*, however the orientation signage did not include a map of the site.
- The *interpretive* signage present focused on *ecological information* and was located along the walking track to the Twin Kauris.
- **One corporate identity** (National Parks) sign was present along the access road, but no Wet Tropics sign was located at the site.
- No *foreign language* signs were present at this site.



Section Three:

Vehicle and Visitor Monitoring

Key Findings

Vehicle and Visitor Records

- Most common vehicle type accessing Lake Barrine was the *car* (70%).
- The highest number of people at the site at one time was **179** (1120 hours 31st March 2002).
- Most of the visits to Lake Barrine occurred just prior to midday and throughout the mid afternoon, between 1100 and 1430 hours.
- On average, people stayed at Lake Barrine for **63 minutes** (approximately one hour).

Traffic Counter Data

- A total of **60,852 vehicles** and **191,684 people** visited Lake Barrine in the year (September 2001-2002).
- On average, **5,041 vehicles** and **15,875 people** visited this site *each month*, range 2,399 to 7,717 vehicles.
- **July and August** received the *highest visitation rates*.
- On average, **1,188 vehicles** and **3,742 people** visited Lake Barrine *each week*, range 677 to 1,757 vehicles.
- **Daily** vehicle numbers range from **155 to 209**.
- Average *weekday* vehicle number was **160 per day**, which represents an increase from previous records 109.4 (wet), 152.4 (dry) vehicles (Manidis Roberts, 1993/1994).
- Average *weekend* vehicle numbers was **205 per day**, compared to previous records 166.7 (wet), 215.7 (dry) vehicles (Manidis Roberts, 1993/1994).



Section Four:

Management Considerations

Key Findings

Presentation

- The presentation of Lake Barrine as a World Heritage Area site is problematic as very few visitors are aware of its World Heritage Area status.
- Indigenous and nonindigenous cultural attributes of the site are well presented in the Wet Tropics Information centre.
- Natural attributes are also considered by visitors to be reasonably well presented in terms of appeal, condition and management.
- Management identity of the site is not well presented with many visitors unaware and/or confused about who manages this site.
- Their responsibilities in terms of visitor appraisal of the condition and management of the built environment is difficult to interpret given the high use of the commercial venue.
- Site layout and design, infrastructure and facilities need to be upgraded.

Opportunities

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

Specific Problems and Issues

- Inappropriate behaviour most evident included conflict in the car park and feeding of wildlife.

Section One

Psychological & Behavioural

Visitor Survey & Behavioural Observations 2001 & 2002



-
- 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

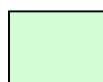
Survey Location: **Lake Barrine National Park**

	Stage 1	Stage 2
Survey Dates	29 th & 30 th September 2001	31 st March & 1 st April 2002
Survey Times	0830 to 1700 each day	0830 to 1700 each day
Weather	40.0% Sunny 50.5% Overcast 5.2% Raining 0.0% Hot 0.5% Warm 3.8% Cool	91.8% Sunny 5.3% Overcast 0.0% Raining 0.6% Hot 1.8% Warm 0.6% 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:

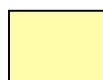


Stage 1: September 2001



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

Because of the layout of Lake Barrine it was possible during the survey distribution period to approach almost every visitor to the site who entered from the top and middle car park. Over four days of field work **546** people were approached to take part in this survey. Of the **388 (71.1%)** who agreed to participate, **380** surveys were successfully completed and analysed. The results presented in this section are therefore very representative of those using Lake Barrine 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 **380 questionnaires** made up this data set, the majority of which were completed on site. Just under 2% were take-homes and mailed back.

	Stage 1: 2001		Stage 2: 2002		Combined	
	n	Percentage	n	Percentage	n	Percentage
On-Site	204	97.1%	168	98.8%	372	97.9%
Take-Home	46	2.9%	2	1.2%	8	2.1%
Total	210	100%	170	100%	380	100%

b) Status of Questionnaire Returns

Of the **388 questionnaires returned**, 2.1% 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	210	97.7%	170	98.3%	380	97.9%
Rejected: Incomplete, under age, returned too late etc.	5	2.3%	3	1.7%	8	2.1%
Total	215	100%	173	100%	388	100%

c) Non-Response Information

Of the **546 people approached** over four days of survey distribution, 28.9% would either not take part or failed to return the survey. The main reason given by people who were approached but who chose not to participate in the survey was that they had **no time**. Field assistants found visitors on the whole to be very co-operative, interested in the research, and willing to participate.

Reasons	Stage 1: 2001		Stage 2: 2002		Combined	
	n	Percentage total # people approached (284)	n	Percentage total # people approached (262)	N	Percentage total # people approached (546)
Take-homes not returned	15		26		41	7.5%
Filled in survey elsewhere	17		7		24	4.4%
Partner filled in survey						
Language Difficulties	10		26		36	6.6%
Had small children	2		3		5	0.9%
No Time	25		24		49	9%
Not Interested			3		3	0.5%
Non-Response	69	24.3%	89	34%	158	28.9%

a) Background Information**Key Findings****Stage 1: September 2001** *Visitor Profile*

During this first data collection stage,

- The majority of visitors (respondents) to Lake Barrine were **Australian** (as opposed to international visitors). Of the Australian visitors, just over half were **local** visitors, i.e., they lived within the Wet Tropics bioregion;
- **Non indigenous Australians** were the major ethnic group;
- The highest level of education achieved by the majority of visitors was **Tertiary B (University)** followed by **Secondary education**;
- While the average age of visitors was **42 years**, the majority were in the **30 – 39 age class**;
- More females participated in this survey than males.

Stage 2: April 2002 *Visitor Profile*

There were fewer respondents to the questionnaire in Stage 2.

- Again, the majority of visitors to Lake Barrine were Australian. Of these Australian visitors, the majority lived within the Wet Tropics bioregion;
- **Nonindigenous Australians** were still the major ethnic group;
- The highest level of education achieved by the majority of visitors was **Tertiary B (University)**;
- The average age of visitors declined slightly to **41 years**, with the majority in the **30 - 39 and 40 – 49 age class**;
- There were considerably more females than males who answered this survey.

Combined Data & General Comments

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

- The majority of visitors to Lake Barrine were **Australian (84.2%)**, which is similar to the 1993 Manidis Roberts results (80.6%), with international visitors at 15.8%. There were significantly more local Australian visitors than domestic Australian and international visitors. Of the international visitors, the majority came from the **UK (35%)**.
- Of the Australian visitors, the majority were **locals (68%)**, i.e., living within the Wet Tropics bioregion.
- Just over half the visitors (57.8%) identified themselves as **Nonindigenous Australians**.

1. *This visitor profile suggests that Lake Barrine is an important site for local Australian visitors.*
2. *It is also a site that is used most frequently by people between 30-39 years of age.*
3. *Of the international visitors it is most popular with **English/UK** citizens.*

a) Background Information

QUESTIONS & RESULTS

1. Where do you live?

STAGE 1: (September/October 2001)						STAGE 2: (March/April 2002)					
n[*] = 210						n[*] = 170					
Australia 80.0% n = 168						Australia 89.4% n = 152					
Locals n = 84 (56.3%) (n = 149)						Locals n = 102 (77.3%) (n = 132)					
Cairns & District Innisfail Mareeba Gordonvale		n = 43 n = 2 n = 2 n = 1	Townsville & District Tableland & District Large Area		n = 14 n = 20 n = 2	Cairns & District Innisfail Tableland & District Mossman / Daintree		n = 30 n = 7 n = 20 n = 1	Babinda & Gordonvale Ingham Townsville & District Mission/El Arish Edmonton/White Rock		n = 4 n = 5 n = 20 n = 7 n = 9
Non-Locals n = 65 (43.7%)						Non-Locals n = 30 (22.7%)					
Overseas 20.0% n = 42						Overseas 10.6% n = 18					
Canada Germany Holland USA	n=1 n=7 n=3 n=5	New Zealand Switzerland UK	n=4 n=3 n=12	Taiwan Japan South Africa	n=2 n=3 n=1	Austria Germany USA	n = 1 n = 1 n = 2	New Zealand South Africa UK	n = 1 n = 1 n = 9	Norway PNG Sweden	n = 1 n = 1 n = 1
Comparative Data 1993: Australian = 80.6% (Local = 50.3%); Overseas = 19.4% n = 175											

2. How long have you lived there?

Period of Residence: n = 207 $\bar{X} = 22.91 \text{ years} \pm \text{SD } 19.79$ (range 0-79) ≤ 10 years = 34.8% > 10 years = 65.2%	Period of Residence: n = 166 $\bar{X} = 22.19 \text{ years} \pm \text{SD } 18.76$ (range 0.5-73) ≤ 10 years = 36.1% > 10 years = 63.9%
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3. How would you describe your ethnic background?

n = 207				N = 166			
Nonindigenous Australian	52.6%	Romanian	0.5%	Nonindigenous Australian	62.7%	Nonindigenous - Irish	0.6%
American	1.4%	Dutch	2.4%	Indigenous Australian	1.2%	Nonindigenous - New Zealander	0.6%
Canadian	1.0%	Russian	1.0%	American	1.8%	Danish	0.6%
Swedish	0.5%	South American	0.5%	Canadian	0.6%	Dutch	1.8%
German	5.8%	Welsh	1.4%	Swedish	0.6%	American, French, Italian & Scottish	0.6%
Swiss	1.4%	European-New Zealander	0.5%	German	3.0%	Irsih, Scottish & Italian	0.6%
Italian	2.4%	Chinese-Swiss	0.5%	French	0.6%	Irsih, Scottish & Italian	0.6%
Chinese	0.5%	French-Swiss	0.5%	Italian	0.6%	Irish, Scottish & English	0.6%
English	15.5%	Nonindigenous-Sri Lankian	0.5%	Chinese	1.2%	Irish & German	0.6%
Japanese	1.4%	Nonindigenous English	1.4%	Japanese	0.6%	Irish & English	0.6%
Irish	1.9%	Nonindigenous		English	13.3%	English & Scottish	0.6%
Scottish	2.9%	English	0.5%	Irish	1.2%	Norwegian	0.6%
Other	12.7%	Nonindigenous German	0.5%	Scottish	0.6%	South African	0.6%
Arabic	0.5%	Celtic	0.5%	Other	12.0%		
Belgian	0.5%			New Zealander Nonindigenous - English	2.4%		
Indian	0.5%						
Spanish	0.5%						

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

n = 206			n = 166		
Primary (1-8 years of education)	3.4%		Primary (1-8 years of education)	3.0%	
Secondary (9-12 years of education)	35.4%		Secondary (9-12 years of education)	30.7%	
Tertiary A (Technical or further educ institution)	24.3%		Tertiary A (Tech or further educ institution)	22.9%	
Tertiary B (University)	36.9%		Tertiary B (University)	43.4%	

5. Age

n = 200 $\bar{X} = 42.28 \text{ years} \pm \text{SD } 13.58$ (range 13-79) Age Categories: < 20 years = 5.0% 40-49 years = 24.0% 20-29 years = 13.0% 50-59 years = 20.5% 30-39 years = 26.0% > 60 years = 11.5%	n = 157 $\bar{X} = 41.03 \text{ years} \pm \text{SD } 13.18$ (range 13-73) Age Categories: < 20 years = 2.9% 40-49 years = 21.2% 20-29 years = 19.3% 50-59 years = 18.2% 30-39 years = 21.1% > 60 years = 17.1%
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Comparative Data 1993: 16-25 = 16.6%; 26-45 = 54.3%; 45-65 = 26.9% >65 = 2.2% n = 175

6. Gender

n = 209 Male 43.1% Female 56.9%	n = 168 Male 39.9% Female 60.1%
Comparative Data 1993: Male = 55.4%; Female = 44.6% n = 175	

b) Transport & Travel Group

Key Findings

Stage 1: September 2001 *Travel Profile*

During this first data collection stage,

- **Only a small percentage of visitors** to the Lake Barrine were with an **organised tour**;
- On average there were **3.15 people** in each vehicle;
- The major group profile of people visiting the site was **small groups / families**.
- Just over three quarters of visitors travelled in **privately owned** vehicles;
- The **most** important source of prior information about Lake Barrine was that visitors had **“been here before”**. The information source not used was **“the web”**.

Stage 2: April 2002 *Travel Profile*

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

- Again, **only a small percentage of visitors** to Lake Barrine were with an **organised tour**,
- There was a slight decrease in the average number of people per vehicle to **3.03**;
- The major group profile of people was **two adults**;
- The majority of visitors travelled in **privately owned** vehicles;
- The **two most** important sources of prior information about the Lake Barrine were **“have been here before”** and **“word of mouth”**. The information sources not used as much were **“the trip was included in a package tour”** and **“the web”**.

Combined Data & General Comments

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

- Many visitors to Lake Barrine were **independent travellers** (97%), which is similar to the 1993 Manidis Roberts results (96%);
- On average, there were **3.09 people** in each vehicle, which is slightly lower than the 1993 Manidis Roberts results (3.34);
- The majority of visitors travelled in **privately owned** vehicles (81.1%), which is higher than 1993 Manidis Roberts results (75.4%);
- **“Have been before”** was the most important source of prior information about Lake Barrine (55.9%). The information source used the least was **“the web”**.

1. **The major group profile of visitors to Lake Barrine was two adults.**
2. **Most people know of Lake Barrine because they have been before. It is a site that attracts a number of repeat visits, by local visitors.**
3. **Very few visitors used the web, tourist leaflets or visitor centres for information about this site.**

b) Transport & Travel Group

QUESTIONS & RESULTS

7. Are you with an organised tour?				
n = 210	Yes	3.3%	No	96.7%
Adventure Co	n=2			
Northern Explorer	n=4			
R&R	n=1			
			n = 170	Yes 0.6% No 99.4%
			ATS Pacific	n=1

8. If you travelled in a private or hired vehicle, how many people including yourself are in your vehicle?				
n = 196		n = 165		
People per Vehicle	$\bar{X} = 3.15 \pm SD 1.42$ (range 1-8)	People per Vehicle	$\bar{X} = 3.03 \pm SD 1.25$ (range 1-7)	
Adults per vehicle	$\bar{X} = 2.43$ (n = 481)	Adults per vehicle	$\bar{X} = 2.38$ (n=393)	
Children per vehicle	$\bar{X} = 0.75$ (n = 149)	Children per vehicle	$\bar{X} = 0.65$ (n =107)	
Private vehicle 76.0%	Hired Vehicle 24.0%	Private vehicle 87.2%	Hired Vehicle 12.8%	
Comparative Data 1993:				
People per vehicle = 3.34		n = 175		
Private vehicle = 75.4%;		Hired vehicle = 18.3%;		Commercial = 3.4%;

9. How did you obtain prior information about this site?				
n = 206		n = 170		
	Have been here before	n	%	Have been here before
	Road sign	107	51.9%	n 103 60.6%
	Word of mouth	18	8.7%	Road sign 16 9.4%
	Map which said it was a tourist site	37	18.0%	Word of mouth 39 22.9%
	Tourist information centre in Nth Qld	43	20.9%	Map which said it was a tourist site 35 20.6%
	Tourist information centre	13	6.3%	Tourist information centre in North Queensland
	Tourist leaflet	5	2.4%	Tourist inform 11 6.5%
	Travel guide or book	15	7.3%	Tourist leaflet 6 3.5%
	From the web	21	10.2%	Travel guide or book 8 4.7%
	Trip included in a package tour	0	0.0%	From the web 14 8.2%
		2	1.0%	The trip here was included in a package tour 3 1.8%
	<i>Other</i>	17	8.3%	<i>Other</i> 1 0.6%
	<i>Came with a relative/partner/friend/group</i>	9	4.4%	<i>Friends</i>
	<i>Told by locals/tourist centres</i>	4	1.9%	<i>Lived on Tablelands</i> 13 7.6%
	<i>Inspired by tourist brochure/photo/postcard</i>	1	0.5%	<i>Locals</i> 2 1.2%
	<i>Birdwatcher's Info</i>	1	0.5%	<i>Planned own visit</i> 1 0.6%
	<i>Told by motel</i>	1	0.5%	<i>T.V. add</i> 3 1.8%
	<i>Boat trip</i>	1	0.5%	<i>Brought Japanese students to see it</i> 2 1.2%
				<i>Mum has been here before</i> 1 0.6%
				<i>Toilet stop</i> 1 0.6%
				<i>Work for NP</i> 1 0.6%
				1 0.6%
				1 0.6%
Specify:		Specify:		
Tourist inform centre: Mareeba, Longreach, Resort		Tourist inform centre: Caravan park; Mareeba; Palm Cove; Sydney; YHA Cairns		
Tourist leaflet: Tropical Atherton Tablelands; Northern Explorer; Sunlover		Tourist leaflet: Lake Barrine; Tropical Tablelands		
Travel guide or book : Lonely Planet, RACQ		Travel guide or book : Atherton Tablelands; Birdwatching in North QLD; Discover the Tablelands; 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 Lake Barrine 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 *almost half* of the visitors rating this as *very important*;
- This was followed by two other experiential reasons - *be close to/experience nature*, and *experience tranquillity*;
- Activity-based reasons were rated slightly important to important. Of these, *opportunities for short walks* followed by *outdoor exercise* rated the highest;
- Educational reasons were slightly important to moderately important. *Learning about Aboriginal culture* was considered by visitors to be the least 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 Lake Barrine 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 reasons – *rest and relax* and *experience tranquillity*;
- Activity-based reasons were rated moderately important to important. Of these, *opportunities for short walks* rated the highest;
- Educational reasons were between slightly important and moderately important. *Learning about Aboriginal culture* was the least important with just over half the visitors considering this as *not important*.

Combined Data & General Comments

- The most important reason given for visiting Lake Barrine was rated *very important* by 52.9% of visitors - *see natural features & scenery*. Visitors rated the experiential reasons *significantly higher* than activity reasons [$t(362) = 19.29$; $p = 0.00$];
- Visitors rated the two educational reasons *significantly lower* than experiential [$t(352) = -25.66$; $p = 0.00$], and activity reasons [$t(352) = -8.5.54$; $p = 0.00$]. *Learn about aboriginal culture* was the least important reason given and was rated *not important* by 49.9% of visitors.

1. *The primary reason given for people visiting Lake Barrine was to see the natural features of the site.*
2. *Activity-based reasons were secondary for most people, particularly long walks.*
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 4 = Important		2 = Slightly important 5 = Quite important		3 = Moderately important 6 = Very important		
		Not Important				Very Important		
	n	1	2	3	4	5	6	\bar{X}^*
a) Learn about native animals and plants <i>(Educational)</i>	194	14.9%	13.9%	24.7%	16.0%	16.5%	13.9%	3.47
	156	29.5%	16.0%	19.2%	11.5%	10.9%	12.8%	2.97
b) Learn about Aboriginal culture <i>(Educational)</i>	190	44.2%	21.1%	18.4%	6.8%	4.7%	4.7%	2.21
	155	56.8%	16.8%	10.3%	7.7%	5.2%	3.2%	1.97
c) See natural features and scenery <i>(Experiential)</i>	203	0.5%	2.5%	6.9%	18.2%	22.2%	49.8%	5.08
	162	2.5%	1.2%	3.7%	14.2%	21.6%	56.8%	5.22
d) Be close to/experience nature <i>(Experiential)</i>	201	2.0%	5.5%	16.9%	17.4%	26.4%	31.8%	4.56
	166	5.4%	7.8%	7.8%	18.1%	22.9%	38.0%	4.59
e) Socialise with family/friends <i>(Experiential)</i>	198	19.7%	7.6%	13.1%	15.7%	18.7%	25.3%	3.82
	158	14.6%	1.9%	5.1%	15.8%	18.4%	44.3%	4.54
f) Rest and relax <i>(Experiential)</i>	201	8.5%	5.5%	15.9%	17.4%	26.4%	26.4%	4.27
	163	3.7%	4.9%	6.1%	9.8%	24.5%	50.9%	4.99
g) Experience tranquility <i>(Experiential)</i>	195	4.6%	5.1%	14.4%	22.1%	25.6%	28.2%	4.44
	161	2.5%	2.5%	10.6%	16.8%	21.1%	46.6%	4.91
h) Experience the Wet Tropics <i>(Experiential)</i>	198	8.6%	6.1%	17.7%	20.2%	21.7%	25.8%	4.18
	160	10.6%	7.5%	14.4%	18.1%	20.6%	28.8%	4.17
i) Outdoor exercise <i>(Activity)</i>	197	17.3%	15.2%	23.9%	15.2%	15.2%	13.2%	3.36
	156	22.4%	14.1%	15.4%	14.7%	15.4%	17.9%	3.40
j) Opportunities for short walks <i>(Activity)</i>	199	18.6%	15.6%	18.6%	15.1%	22.1%	10.1%	3.37
	161	18.0%	11.8%	17.4%	16.8%	18.6%	17.4%	3.58
k) Opportunities for long walks <i>(Activity)</i>	189	36.5%	19.0%	14.8%	9.5%	12.7%	7.4%	2.65
	154	37.0%	20.1%	13.0%	11.0%	7.8%	11.0%	2.66
l) Other	202	0.0%	0.5%	0.0%	1.0%	1.0%	7.9%	N/A 89.6%
	161	0.6%	0.0%	1.2%	2.5%	3.1%	13.7%	N/A 78.9%
Specify other reasons: <i>Reasons provided have been placed into three major categories. Those that are related to activity, experience, education. The fourth category is "other".</i>	24	Activity: Disabled access 1 Birdwatching 1 Boat trip 6		n	Experiential: Morning Tea/lunch 9 Drink 1 Impulsive 1 Kauri trees 1 Friends Staff Children 3 Uniqueness 1		n	Educational: n
	34	Activity: Birdwatching 3 Boatcruise 1 Coffee,Devonshire tea 5 Lunch , Dine out 7 Gift shop 1 Time out 1 Photography 2 Swim 4 Toilet/rest stop 1 Wedding 2		n	Experiential: Nice motorbike ride 1 Travel the region 1 See a crater lake 1 Lake Barrine scenes 1 Experience my country 1 Take a beautiful run 1		n	Educational: n. Other: Introduce my flatmate to the Tablelands 1

\bar{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 Lake Barrine was **high**;
- In particular, the majority of visitors found the natural environment to be **interesting, appealing** and in **good condition**;
- Approximately three quarters of visitors **somewhat to strongly agreed** that the natural environment was **well managed**;
- Just over half of visitors indicated **some level of concern** about the **impacts of human activity** on the natural environment at Lake Barrine, while over three quarters of visitors did not consider the site to be disturbed or impacted;
- Very 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.

- *Visitor appraisal* of the positive aspects of the natural environment was **higher** compared to Stage 1;
- The majority of visitors (60.5%) **strongly agreed** that the **natural attractions and scenic beauty** at Lake Barrine were **appealing**;
- In terms of the natural environment, **just under half of the visitors (48.2%) strongly agreed** that the site was **well managed**;
- In regards to the condition of the natural environment at Lake Barrine, over three quarters of the visitors (79.2%) **somewhat to strongly agreed** that the natural environment **appeared to be good**;
- 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 Data & General Comments

For the combined data set,

- Aspects of the natural environment at Lake Barrine that were most highly rated were **appeal of natural attractions** ($\bar{X} = 5.35$), **interesting** ($\bar{X} = 5.33$), and **condition** ($\bar{X} = 5.22$).
- Few visitors (9.5%) appeared to have any particular expectations of what they would find or encounter.

1. **These results suggest that, overall visitors find the natural features at Lake Barrine to be appealing, interesting, and in good condition.**

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					Strongly Agree		\bar{X}^*
		1	2	3	4	5	6		
a) The natural environment at this site is interesting.	207	0.0%	0.0%	3.4%	17.4%	28.5%	50.7%	5.27	
	166	0.0%	0.6%	1.8%	12.0%	26.5%	59.0%	5.42	
b) I would like to spend more time exploring this natural environment.	205	2.0%	5.9%	8.8%	31.2%	25.4%	26.8%	4.53	
	167	1.8%	3.6%	5.4%	28.1%	27.5%	33.5%	4.77	
c) In terms of natural attractions and scenic beauty this site is appealing.	204	0.0%	1.0%	4.4%	14.7%	30.9%	49.0%	5.23	
	167	0.0%	0.0%	1.2%	8.4%	29.9%	60.5%	5.50	
d) The condition of the natural environment at this site appears to be good.	206	0.0%	0.0%	6.3%	14.6%	41.3%	37.9%	5.11	
	168	0.0%	0.6%	3.0%	7.7%	38.1%	50.6%	5.35	
e) The natural environment at this site is well managed.	206	0.0%	1.0%	4.4%	19.9%	39.8%	35.0%	5.03	
	168	1.2%	1.2%	2.4%	11.3%	35.7%	48.2%	5.24	
f) I am concerned about the impacts of human activity on the natural environment at this site.	202	8.9%	14.9%	19.3%	21.8%	19.3%	15.8%	3.75	
	167	18.0%	13.2%	13.2%	19.2%	16.8%	19.8%	3.63	
g) This site appears to be disturbed and impacted.	202	25.2%	30.2%	21.3%	11.9%	8.9%	2.5%	2.56	
	165	36.4%	28.5%	15.2%	7.9%	7.9%	4.2%	2.35	

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

n = 207		Yes	10.6%	No	89.4%	n = 163		Yes	8.0%	No	92.0%
If yes, please specify: <i>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.</i>	16	<u>Natural/Biological:</u>	n	<u>Natural/Physical</u>	n	<u>Built/Structural</u>	n				
		More animals	3			Canoes	1				
	Cassowary	5(1)				Explanations	1				
	Ducks	1				Picnic area	1				
	Eels	1									
	Natural forests	1									
	Reptiles	1(1)									
	Turtle	1									
	10	<u>Natural/Biological:</u>	n	<u>Natural/Physical</u>	n	<u>Built/Structural</u>	n				
	Birds	1				Sandbank to swim from and lawn picnic area	1				
	Cassowary	3									
	Tree kangaroo	1									
	Pelicans	1									
	Snakes	1									
	Turtles	1									
	Marine wildlife	1									

e) Time Spent and Activities

Key Findings

Stage 1: September 2001 *Activity Profile*

During this first data collection stage,

- Two thirds of the visitors (**65.4%**), spent between **one and two hours** at the site, with the majority using the cafe;
- Besides **observing scenery**, the other activities most visitors engaged in was **relaxing**, and **taking a short walk**;
- Of those visitors who would have liked to engage in other activities, activities associated with the **built environment** and **rules and regulations** were most frequently identified.

Stage 2: April 2002 *Activity Profile*

During this second data collection stage, the responses were similar to Stage 1.

- Again, the majority of visitors (**68.3%**), spent between **one and two hours** at the site;
- Besides **observing scenery**, most visitors **relaxed**, and took a **short walk**;
- **Observing bird and wild life** was also a popular activity with just over one third of the visitors;
- Of those visitors who would have liked to engage in other activities, many identified activities associated with the natural environment (to swim), and changes to the built environment.

Combined Data & General Comments

1. *These results suggest that, overall, visitors spend enough time at Lake Barrine which allows them to visit the caf and/or take the short walk – **one to two hours**.*
2. *Many visitors use the site for bird watching (40.6%).*
3. ***Only 17.7%** of visitors spent time looking at **interpretation material**.*

e) Time Spent and Activities

QUESTIONS & RESULTS

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

<i>n</i> = 202				<i>n</i> = 164			
	%		%		%		%
less than 1/2 hour	10.4%	About 3 hours	5.9%	less than 1/2 hour	6.7%	About 3 hours	4.9%
About 1/2 hour	16.8%	About 4 hours	1.0%	About 1/2 hour	15.9%	About 4 hours	1.8%
About 1 hour	31.7%	More than 4 hours	0.5%	About 1 hour	39.6%	More than 4 hours	1.8%
About 2 hours	33.7%	Overnight	0.0%	About 2 hours	28.7%	Overnight	0.6%

Comparative Data 1993: <1/2 hr = 29.7%, <1 hr = 37.1%, 1-<2hrs = 22.9%; 2-<4hrs = 6.3%, *n* = 175

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

<i>n</i> = 205				<i>n</i> = 167			
Activities:	%	Activities:	%		%		%
Observing scenery	84.9%	Observing scenery	83.2%				
Bird watching	41.5%	Bird watching	39.5%				
Observe other wildlife	41.5%	Observe other wildlife	39.5%				
Photography/painting/drawing	27.3%	Photography/painting/drawing	22.2%				
Picnic/barbeque	6.8%	Picnic/barbeque	9.6%				
Using café/restaurant	62.0%	Using café/restaurant	60.5%				
Camping	0.0%	Camping	1.2%				
Walking – Short (1 hr or less)	42.4%	Walking – Short (1 hr or less)	38.3%				
Walking – Long (1-6 hours)	9.3%	Walking – Long (1-6 hours)	7.8%				
Swimming	1.0%	Swimming	6.6%				
Guided tour	14.6%	Guided tour	11.4%				
Looking at interpretation material	20.0%	Looking at interpretation material	15.0%				
Relaxing	50.0%	Relaxing	59.3%				
<i>Other</i>	5.9%	<i>Other</i>	5.4%				
<i>Family time</i>	0.5%	<i>Answering survey</i>	3.0%				
<i>Ferry ride</i>	0.5%	<i>Lunch</i>	0.6%				
<i>Walked in gardens</i>	0.5%	<i>Lunch for Birthday</i>	0.6%				
<i>Kauri trees</i>	0.5%	<i>Shop</i>	0.6%				
<i>Filling in questionnaire</i>	3.4%	<i>Wedding</i>	0.6%				
<i>Used the shop</i>	0.5%						

Comparative Data 1993: Swimming = 16%; Walking(short) = 25.1%; Nature Study = 20.6%; Photography = 32.6%; Relaxing = 59.4%; Scenic viewing = 25.7%; Bird Watching = 13.1% *n* = 175

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

<i>n</i> = 203		Yes 9.9%		No 90.1%		<i>N</i> = 142		Yes = 12.0%		No 88.0%	
If yes, please specify:	<i>Responses provided have been placed into five major categories. Those activities related to natural, built, or social environment, and rules/regulations.</i>	<i>n</i> = 17		<i>n</i>		<i>n</i>		<i>n</i>		<i>n</i>	
		<u>Natural Environ</u>		<u>Built Environ</u>		<u>Social Environ</u>					
		See more animals		Birdhide		More time					
				Cruise too expensive		Rules/regulation					
		Long walk		Camp							
		Walk around the lake		Take a rowboat out							
		<i>n</i> = 15		<i>n</i>		<i>n</i>		<i>n</i>		<i>n</i>	
		<u>Natural Environ</u>		<u>Built Environ</u>		<u>Social Environ</u>					
		Birdwatching		Boat cruise		Time restrictions					
		Swim		Boat hire							
		Long walk		A toilet on the 6km walk							
				Track was too steep							
				Easier access: disability							

f) Information

Key Findings

Stage 1: September 2001 *Information/Signage Use*

During this first data collection stage,

- The majority visitors agreed to some extent that **directional signage** was easy to locate. Just over 85% agreed to some extent that this signage enabled them to find their way round Lake Barrine;
- Over three quarters of visitors (80.2%) agreed to being able to determine the **rules and regulations**. Similarly, 82% of visitors could identify what was **acceptable activity**;
- Over two thirds of visitors (68.7%) agreed to some extent that **safety** information was **easy to locate** and 72.3% agreed that it was **understandable**;
- Visitor assessment of the **natural / ecological** information was moderately high. Approximately one third of visitors **strongly agreed** that the information was interesting (30.3%) and clearly presented (30.5%).

Stage 2: April 2002 *Information/Signage Use*

During this second data collection stage, visitor assessment of all information was similar to Stage 1.

- Just over one third of visitors (34.7%) **strongly agreed** that the directional signage was **easy to locate**. Similarly, just over **one quarter** of respondents **strongly agreed** that this signage helped with **wayfinding**;
- Overall, visitor assessment of the **rules and regulations** at Lake Barrine was very similar for this stage compared to the first. Over three quarters of visitors agreed to some extent that the rules and regulations were easy to determine (79.1%), and clearly identified acceptable activities (80%);
- Approximately three quarters of people agreed that **safety** information was easy to locate (73.6%), and that it was understandable (75.5%);
- Approximately one third of visitors strongly agreed that the natural / ecological information was interesting (34.5%), and clearly presented (32.6%).

Combined Data & General Comments

- Visitor assessment of the **natural/ecological** information at Lake Barrine received the highest ratings – **interesting** ($\bar{X} = 4.81$), **clearly presented** ($\bar{X} = 4.82$), and **understandable** ($\bar{X} = 4.65$).
- Information about orientation i.e, maps, directions etc, were rated slightly lower - easy to locate ($\bar{X} = 4.67$), find way round ($\bar{X} = 4.59$).
- On the whole visitors found **rules and regulations** at Lake Barrine moderately easy to determine ($\bar{X} = 4.48$), and to identify acceptable activity ($\bar{X} = 4.52$).
- However, most visitors only slightly agreed that **safety** information was **easily located** ($\bar{X} = 4.13$), and **easy to understand** ($\bar{X} = 4.24$). Such information is limited at this site (see Section 2).

f) Information

QUESTIONS & RESULTS

16. Did you refer to any of the information available at this site today?	n=197	Yes	49.2%	No	50.8%
	n=161	Yes	49.1%	No	50.9%

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.		Strongly Disagree		Strongly Agree					
		n	1	2	3	4	5	6	\bar{X}
<i>All of the signs from (a) to (d) were present at Lake Barrine (see Section 2 for details). Most of the interpretive signs were located within the commercial area.</i>									
a) The maps and directions at this site: i) were easy to locate	175	1.1%	2.9%	8.6%	26.9%	34.3%	26.3%	4.69	
	144	6.3%	2.1%	9.0%	20.1%	27.8%	34.7%	4.65	
	165	1.8%	3.0%	9.7%	24.2%	35.8%	25.5%	4.65	
	132	7.6%	3.0%	8.3%	22.0%	30.3%	28.8%	4.51	
ii) helped me to find my way round	172	5.2%	5.2%	9.3%	24.4%	28.5%	27.3%	4.48	
	143	6.3%	7.0%	7.7%	22.4%	24.5%	32.2%	4.48	
	161	5.0%	6.2%	6.8%	24.8%	28.6%	28.6%	4.52	
	135	5.9%	5.9%	8.1%	20.0%	28.9%	31.1%	4.53	
b) The rules and regulations at this site: i) were easy to determine	172	5.2%	5.2%	9.3%	24.4%	28.5%	27.3%	4.48	
	143	6.3%	7.0%	7.7%	22.4%	24.5%	32.2%	4.48	
	161	5.0%	6.2%	6.8%	24.8%	28.6%	28.6%	4.52	
	135	5.9%	5.9%	8.1%	20.0%	28.9%	31.1%	4.53	
ii) enabled me to clearly identify acceptable activities	169	11.8%	5.9%	13.6%	24.3%	24.3%	20.1%	4.04	
	140	7.1%	9.3%	10.0%	24.3%	25.0%	24.3%	4.24	
	152	9.2%	5.9%	12.5%	24.3%	26.3%	21.7%	4.18	
	131	7.6%	8.4%	8.4%	24.4%	22.9%	28.2%	4.31	
c) The safety information at this site: i) was easy to locate	169	11.8%	5.9%	13.6%	24.3%	24.3%	20.1%	4.04	
	140	7.1%	9.3%	10.0%	24.3%	25.0%	24.3%	4.24	
	152	9.2%	5.9%	12.5%	24.3%	26.3%	21.7%	4.18	
	131	7.6%	8.4%	8.4%	24.4%	22.9%	28.2%	4.31	
ii) was easy to understand	175	1.7%	2.3%	6.9%	24.0%	34.9%	30.3%	4.79	
	142	1.4%	2.8%	7.7%	21.1%	32.4%	34.5%	4.84	
	167	2.4%	2.4%	6.0%	26.3%	32.3%	30.5%	4.75	
	138	1.4%	0.7%	6.5%	22.5%	36.2%	32.6%	4.89	
iii) helped me better understand the ecological processes of this area	168	3.0%	5.4%	7.1%	24.4%	33.3%	26.8%	4.60	
	135	1.5%	3.0%	8.9%	28.1%	26.7%	31.9%	4.71	
	145	25.5%	9.0%	15.2%	31.0%	10.3%	9.0%	3.19	
	122	30.3%	10.7%	14.8%	17.2%	19.7%	7.4%	3.07	
f) The indigenous cultural information at this site: i) was interesting	143	25.2%	10.5%	17.5%	23.8%	11.2%	11.9%	3.21	
	120	29.2%	8.3%	18.3%	15.8%	20.8%	7.5%	3.13	
	141	27.0%	7.8%	16.3%	24.1%	14.9%	9.9%	3.22	
	121	30.6%	10.7%	15.7%	18.2%	14.0%	10.7%	3.07	
ii) was clearly presented	141	27.0%	7.8%	16.3%	24.1%	14.9%	9.9%	3.22	
	121	30.6%	10.7%	15.7%	18.2%	14.0%	10.7%	3.07	
	141	27.0%	7.8%	16.3%	24.1%	14.9%	9.9%	3.22	
	121	30.6%	10.7%	15.7%	18.2%	14.0%	10.7%	3.07	
ii) helped me understand the significance of this area for indigenous Australians	141	27.0%	7.8%	16.3%	24.1%	14.9%	9.9%	3.22	
	121	30.6%	10.7%	15.7%	18.2%	14.0%	10.7%	3.07	
	141	27.0%	7.8%	16.3%	24.1%	14.9%	9.9%	3.22	
	121	30.6%	10.7%	15.7%	18.2%	14.0%	10.7%	3.07	

g) Site Facilities & Management Issues

Key Findings

Stage 1: September 2001

Visitor Appraisal

During this first data collection stage,

- The **restaurant / cafe** and **toilet facilities** at Lake Barrine were the two **most** used facilities. Many visitors also used the walking track and viewing platform.
- The overall **condition** of facilities was rated the highest, followed by their appeal and management;
- Just under one third of visitors strongly agreed that the facilities at Lake Barrine were **adequate**;
- Two thirds of visitors (66.2%) agreed that the presence of a **ranger** at the site was important;
- The reason most frequently identified was to **provide information/education**, followed by to **answer questions**.

Stage 2: April 2002

Visitor Appraisal

During this second data collection stage, visitor appraisal of facilities was similar to Stage 1.

- The **restaurant / cafe** and **toilet facilities** at Lake Barrine were again the **most frequently** used of all facilities present. The most frequently requested additional facility was **better parking**;
- The overall appraisal of facilities was higher in all aspects compared to Stage 1;
- The **appeal** of facilities was rated the highest, followed by the **condition** and **adequacy** of facilities;
- More respondents (70.1%) agreed to the presence of a **ranger** at the site compared to Stage 1;
- Similar to Stage 1, the reasons most frequently identified were to **provide information/education** and to **answer questions**.

Combined Data & General Comments

- As expected, the **cafe** was the most frequently used facility at Lake Barrine, being used by 68.4% of visitors.
- The walking track to the twin Kauris was used by half of the visitors (50%).
- **Condition and appeal of facilities** received the highest ratings ($\bar{X} = 5.18$).
- Of the visitors for whom the presence of a ranger was important (68%), the majority identified **providing information/education** as the reason (59.2%).

1. *As expected, the **café and walking track** at Lake Barrine were the most frequently used facilities at this site.*
2. *Overall, visitors were satisfied with the **condition and appeal** of facilities at Lake Barrine.*

g) Site Facilities & Management Issues

QUESTIONS & RESULTS

19. What facilities have you used at this site today?									
n = 203			Walking track 54.7%			n = 164			
Picnic table	14.3%		Boardwalk	30.5%	Picnic table	15.9%		Other	9.0%
Shelter shed	5.9%		Viewing platform/lookout	40.4%	Shelter shed	7.9%		Boat cruise	3.0%
Restaurant/café	68.5%		Fire place	2.5%	Restaurant/café	67.7%		Carpark	1.8%
Rubbish bin	21.2%		Barbeque	1.0%	Rubbish bin	25.0%		Garden	1.2%
Toilet	65.0%		Other	6.1%	Toilet	59.1%		Gift shop	0.6%
Tap	15.8%		Boat cruise	1.2%	Tap	17.1%		Park benches	1.2%
			Carpark	2.9%	Walking track	43.9%		Stairs	0.6%
			Gardens	1.0%	Boardwalk	27.4%		Swimming area	0.6%
			Shops	1.0%	platform/lookout	40.2%			
					Fire place	2.4%			
					Barbeque	2.4%			
Comparative Data 1993: Walking track = 50.8%; toilet = 41.7%; picnic table = 14.3%; Restaurant/kiosk = 56.0%; viewing platform from lookout = 86.2%; rubbish bin = 13.1%; grassed area = 17.7% n = 175									

20. Were there particular facilities at this site you were expecting to find which were not available?									
n = 200 Yes 5.5% No 94.5%					n = 144 Yes 4.2% No 95.8%				
If yes, please specify:									
n = 10			n = 5						
Baby change facilities	1		Indigenous cultural info	1	Cheap water	1		Swimming	1
BBQ	1		Meals/credit card facilities	1	Better parking	2		Site has been modernised	1
Bins	1		Kayak or boat rentals	1					
Birdhide	1		Swimming area	1					
Camping facilities	1		Toilet	1					

21. Please rate the extent to which you agree or disagree with each of the following statement about the <u>facilities</u> and <u>management</u> at this site by circling one number for each statement.									
	n	1	2	3	4	5	6	\bar{X}	
a) This site is appealing in terms of the character and attractiveness of the facilities.	198	1.0%	1.0%	6.6%	17.7%	37.4%	36.4%	4.98	
	164	0.6%	0.0%	3.0%	9.8%	26.8%	59.8%	5.41	
b) The facilities at this site are adequate .	199	0.0%	1.5%	5.5%	25.6%	35.7%	31.7%	4.90	
	162	1.2%	0.6%	4.3%	9.3%	33.3%	51.2%	5.27	
c) The overall condition of the facilities at this site appears to be good.	195	0.0%	1.0%	3.6%	16.9%	45.1%	33.3%	5.06	
	163	0.6%	0.0%	3.1%	10.4%	33.7%	52.1%	5.33	
d) The facilities and infrastructure at this site are well managed .	198	0.0%	1.5%	2.0%	25.3%	42.4%	28.8%	4.95	
	162	1.2%	0.6%	1.9%	16.0%	29.0%	51.2%	5.25	
e) The presence of a ranger at sites like this is important to me.	193	9.3%	8.3%	16.1%	21.2%	18.1%	26.9%	4.11	
	157	9.6%	8.9%	11.5%	19.1%	20.4%	30.6%	4.24	

22. If you agreed the presence of a ranger was important, what are the reasons for this?									
n = 200					n = 158				
To provide information/education	110	55.0%			To provide information/education	102	64.6%		
To answer questions	90	45.0%			To answer questions	76	48.1%		
To take us on guided walks	43	21.5%			To take us on guided walks	38	24.1%		
For safety/security	72	36.0%			For safety/security	68	43.0%		
To give directions	59	29.6%			To give directions	60	38.0%		
For lodging complaints about other behaviour	24	12.0%			For lodging complaints about other behaviour	29	18.4%		
For site maintenance	75	37.5%			For site maintenance	79	50.0%		
Other					Other	3	1.8%		
Indigenous Ranger	1	0.5%			For visitors to give feedback about environment	2	1.2%		
Monitor Behaviour	5	2.5%			Teaching Knowledge	1	0.6%		
Minimise Impact	1	0.5%							

g) Site Facilities & Management Issues Cont'd**Key Findings****Stage 1: September 2001**

During this first data collection stage,

- Just over one third of visitors identified Lake Barrine as having *special significance*. The most frequent unprompted responses were because Lake Barrine is a *crater lake*, followed by its *World Heritage Area listing*;
- The majority of visitors, **64.6%**, either *did not know* or *answered incorrectly* when asked who was the management agency responsible for Lake Barrine;
- Of those who did identify an agency only **36.9%** identified *National Parks* (in its various formats) as the management agency, **4.5%** identified *WTMA*;
- When provided with a choice, *most visitors* (48.2%) labelled Lake Barrine a *National Park* and **18.6%** identified it as a *National Park and World Heritage Area*;
- Most visitors preferred sites with *fairly well developed facilities*.

Stage 2: April 2002

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

- More visitors (**42%**) considered Lake Barrine to have *special significance*. Similar to Stage 1, the most frequent unprompted responses were because Lake Barrine is a *crater lake*, is *World Heritage listed*, and because of its *historical value*;
- The same percentage of visitors (64.6%) as Stage 1 *did not know* or *answered incorrectly* when asked who was the management agency responsible for Lake Barrine;
- Of those who did identify an agency, **40.9%** identified *National Parks* (in its various formats) as the management agency, and **7.9%** of visitors thought that Lake Barrine was *privately owned*;
- When provided with a choice, most visitors (**47.8%**) labelled Lake Barrine a *National Park*, and **18.6%** identified it as a *National Park and World Heritage Area*;
- Again, most visitors preferred sites with *fairly well developed facilities*.

Combined Data & General Comments

- The majority of visitors either *did not know* or provided an *incorrect answer* when asked who manages Lake Barrine;
- When given a choice the majority believed the site to be managed by *National Parks* (**48.1%**).
- **34.2%** of visitors identified Lake Barrine as a World Heritage Area.

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

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 = 196 Yes 33.2% No 66.8%					n = 157 Yes 42.0% No 58.0%				
If yes, please specify:									
n = 54					n = 47				
Cassowaries / rainforest	1	Kauri pine trees	5	Aboriginal heritage	(2)	Crater lake	9(2)		
Close to home	1	National heritage	2	Historical value	8(2)	Geological value	3(2)		
Crater lake	13	National Park	3	National Park	4(1)	Kairi pines	2(2)		
Educational	1	Natural significance	3	World Heritage	8(4)	Flora/fauna preservation	5		
Healing properties	1	Personal	1	Natural habitat	6	Wedding reception	1		
History of ecology	1	Relaxation	1			Sentimental value	1		
Extinct volcano	7	Rock formation	1						
Weddings	1	World Heritage Area	12(1)						
24. What agency or department do you think manages this site?									
n = 198				n = 164					
Management Agency or Department:				Management Agency or Department:					
		NPWS / QPWS	70	35.4%		NPWS / QPWS	58(6)	35.4%	
		WTMA	9	4.5%		Privately owned	13(3)	7.9%	
		DNR	6	3.0%		Dept. of Environment & Heritage	6(1)	3.7%	
		Environment	6	3.0%		DNR	5(1)	3.0%	
		Private	4	2.0%		WT	4	2.4%	
		Department of conservation	3	1.5%		NHT	3	1.8%	
		Queensland State	2	1.0%		EPA	3(2)	1.8%	
		DPI	2	1.0%		Eacham Shire	2	1.2%	
		Government	2	1.0%		QLD Forestry	2	1.2%	
		State government	2	1.0%		Department of Conservation	1	0.6%	
		Wildlife department	1	0.5%		DPI	1	0.6%	
		Aboriginal corporation	1	0.5%		WH	1	0.6%	
		Council	1	0.5%		Wildlife office	1	0.6%	
		Curry family	1	0.5%		Management agency	1	0.6%	
		Family lease	1	0.5%		UNESW	1	0.6%	
		Heritage	1	0.5%					
		Management agency	1	0.5%					
		Owners	1	0.5%					
		Unanswered /Don't Know	84	42.4%		Unanswered /Don't Know	62	37.8%	
25. Which of the following labels applies to this site?									
n = 199				n = 161					
		National Park (NP)	48.2%			National Park (NP)	47.8%		
		State Forestry (SF)	2.5%	NP & WHA	18.6%	State Forestry (SF)	3.7%	NP & WHA	18.6%
		World Heritage Area (WHA)	16.6%	NP & SF	1.0%	World Heritage Area (WHA)	14.3%	NP & SF	1.9%
		Don't know	7.5%	SF & WHA	0.0%	Don't know	10.6%	SF & WHA	0.6%
				NP, SF, WHA	5.5%			NP, SF, WHA	2.5%
26. Which of the following natural areas do you most prefer visiting?									
n = 202				n = 163					
Natural area with:				Natural area with:					
		no facilities (eg. no toilets, no designated camp ground)	4.0%			no facilities (eg. no toilets, no designated camp ground)	2.5%		
		few facilities (eg. rough walking tracks)	9.9%			few facilities (eg. rough walking tracks)	9.2%		
		limited facilities (eg. walking tracks evident , some directional signage)	20.8%			limited facilities (eg. walking tracks evident , some directional signage)	25.8%		
		fairly well developed facilities (eg. well marked tracks, extensive signage)	33.2%			fairly well developed facilities (eg. well marked tracks, extensive signage)	35.6%		
		very well developed facilities (eg. camp grounds, visitor centre)	25.2%			very well developed facilities (eg. camp grounds, visitor centre)	20.9%		
		don't know/don't care	6.9%			don't know/don't care	6.1%		

h) Other Visitors & Experience

Key Findings

Stage 1: September 2001

During this first data collection stage,

- Just over 40% of visitors ***strongly disagreed*** that there were ***too many other people*** at Lake Barrine;
- Just over half ***strongly disagreed*** that the people who were there ***impacted on their own behaviour or experience*** of the site;
- Three quarters of visitors agreed that other visitors at the site were on the whole environmentally responsible;
- In terms of their experience of Lake Barrine, visitors rated their ***enjoyment*** of the site ***highest*** with many (44.5%) strongly disagreeing that there were disappointing aspects;
- Just under three quarters of visitors ***agreed*** to some extent that their visit had been a ***special experience***.

Stage 2: April 2002

During this second data collection stage, visitor responses were similar to that of Stage 1.

- Just under three quarters of visitors (73.7%) ***did not think*** there were ***too many people*** at Lake Barrine;
- Additionally, over ***90% disagreed*** that the people who were at Lake Barrine ***impacted on their own behaviour or experience*** of the site;
- The majority of visitors agreed that other visitors were on the whole environmentally responsible;
- Similar to Stage 1, visitors rated their ***enjoyment*** of the site ***highest*** with over half (54.8%) strongly disagreeing that there were disappointing aspects;
- The majority of visitors (82.2%) ***agreed*** to some extent that their visit was a ***special experience***.

Combined Data & General Comments

- The majority of visitors were not concerned about the number, presence or behaviour of people at Lake Barrine;
- 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, does not appear to be a problem at Lake Barrine.*
2. *Reported visitor **satisfaction**, as measured by enjoyment, worth the money, disappointment, was moderately high.*

h) Other visitors

QUESTIONS & RESULTS

27. The following statements are about other visitors 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			Strongly Agree			\bar{X}
		1	2	3	4	5	6	
a) There were too many people at this site today.	202	40.6%	23.3%	19.8%	9.4%	4.0%	3.0%	2.22
	167	31.7%	21.0%	21.0%	15.6%	7.8%	3.0%	2.56
b) The presence of other people at this site prevented me from doing what I wanted to.	199	53.3%	24.1%	15.6%	3.5%	1.0%	2.5%	1.82
	164	59.1%	17.1%	14.6%	5.5%	3.0%	0.6%	1.78
c) The behaviour of other visitors at this site has been on the whole environmentally responsible.	198	10.6%	6.1%	7.6%	22.7%	32.3%	20.7%	4.22
	164	11.6%	4.9%	4.3%	17.1%	31.1%	31.1%	4.45
d) The behaviour of some visitors at this site detracted from my enjoyment of this site.	196	52.0%	19.9%	11.7%	7.1%	5.6%	3.6%	2.05
	165	52.1%	20.6%	10.3%	10.3%	2.4%	4.2%	2.03

i) Experience

QUESTIONS & RESULTS

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

	n	Strongly Disagree			Strongly Agree			\bar{X}
		1	2	3	4	5	6	
a) I experienced a real sense of involvement and connection with this place.	192	3.1%	8.3%	24.5%	29.7%	17.2%	17.2%	4.01
	164	7.3%	7.3%	18.3%	31.7%	17.7%	17.7%	3.98
b) For me visiting this site has been a special experience.	194	4.1%	5.2%	16.5%	29.9%	24.7%	19.6%	4.25
	164	3.7%	5.5%	8.5%	34.1%	26.8%	21.3%	4.39
c) I thoroughly enjoyed my visit to this site today.	198	1.0%	0.5%	4.5%	26.3%	31.3%	36.4%	4.95
	166	0.0%	0.0%	3.0%	16.3%	34.3%	46.4%	5.24
d) It was well worth the money I spent to come to this site.	186	1.6%	2.2%	6.5%	29.0%	27.4%	33.3%	4.78
	161	1.2%	1.9%	2.5%	23.0%	31.1%	40.4%	5.02
e) I was disappointed with some aspects of this site.	191	44.5%	24.1%	13.1%	9.9%	5.8%	2.6%	2.16
	166	54.8%	24.1%	9.6%	6.6%	1.8%	3.0%	1.86

j) Additional Open-ended Items

Key Findings

Stage 1: September 2001

During this first data collection stage,

- **Additional information** requirements were predominantly related to *cultural and historical* information followed by *maps and orientation* information;
- While a number of aspects were identified as **enhancing visitor enjoyment**, most were related to the *facilities* of the site, in particular the boat ride and tea house;
- However, the most frequently reported aspects of the visit that **detracted from visitor experience** were again related to the *facilities* at the site – the *tea house* and *not being able to park* were the most frequent responses.

Stage 2: April 2002

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

- **Additional information** requirements were predominantly related to *natural and ecological* information followed by *cultural and historical* information;
- Aspects of the setting most frequently identified with **enhancing visitor enjoyment** were related to the *facilities* – in particular the *boat ride and tea house*. Another important response was experiencing *peace and serenity*;
- The most frequently reported aspects of the visit that **detracted from visitor experience** were those to do with the *social environment*, in particular, crying children and smokers.

Combined Data & General Comments

1. *Cultural and historical information* were the types of additional information most frequently requested by visitors.
2. Many aspects of the *natural, built and social environment* at Lake Barrine were what enhanced visitor enjoyment of their visit.
3. Various aspects of the *built and social environment* detracted from visitor enjoyment of Lake Barrine.

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 23 respondents to this questions, 1 indicated that no more additional information was required;				Of the 26 respondents to this question, 1 indicated that no more additional information was required;			
Category	n	Category	n	Category	n	Category	n
Maps/Orientation		Natural/Ecological/Geological		Maps/Orientation		Natural/Ecological	
Better maps(distance)	2	Geological and plant info	1	Maps in carpark	3(1)	Info on flora and flora	1(2)
Directional signs	1	Info regrading the lake	1	Tourguide	1	Bird identification poster	1
Distance markers around lake	2	Info about Kauri trees	1	Boards (obvious)	1(1)	Plant labels	4(2)
		Info on wildlife	1			Canopy differences along lake	1
				Rules/Regulations/Safety		Depth of lake	1
Rules/Regulations/Safety		Cultural/Historical Information		General:		Cultural/Historical Information	
		Don't care about indigenous info	1	Written information	1	Indigenous culture	6(1)
		Expected indigenous info	8			History	1(1)
General:		Indigenous person on site	1	Other:			
Five year plan for area	1	History of area	2	Didn't see any info	4		

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

n	Yes	No	n	Yes	No
n = 194	27.8%	72.2%	n = 160	43.8%	56.3%

If yes, please specify:

Category	n	Category	n	Category	n	Category	n
Natural:		PsychoSocial:		Natural:		PsychoSocial:	
Flora & fauna	2	It's all new to me	1	Beautiful weather	6	Peace and serenity	11(1)
Birds	1	Friends	7	Kairi pines	2(2)	Company of friends	2
Beauty	4	Friendly staff	2	Ducks	2	Friendly staff	4(1)
Swim	(1)	Peace	4(2)	Seeing turtles	1	Doing survey	1
Hens and chicks	1	Other:		Flora and fauna	2(1)		
Kauri pines	2	Legibility of information	1	Waterviews	1		
Lake	2(1)	History	(1)	Facilities:			
Pelican	1	No litter	1	Boatride (skipper,info)	5(2))		
Gardens	1			Tea house (scones,Devonshire tea,gifts)	8(1)		
Climate	2			Lunch (meal,view,coffee)	5		
Facilities:				Great facilities (better, toilets)	3(2)		
Boat ride	9			Lake walk/run	6(1)		
Teahouse	4(1)			Table at waters edge	1		
Improved track	3			Benches	1		
Toilet and rest area	1						

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

n	Yes	No	n	Yes	No
n = 195	15.4%	84.6%	n = 164	15.2%	84.8%

Category	n	Category	n	Category	n	Category	n
Natural/Biophysical:		Other:		Natural/Biophysical:		Facilities:	
Climate	1	Car noise	2	Exotic plants in garden	2	No signage	2
No cassowaries	1	Information about the lake	1	Mosquitos	1	Lack of parking	1
		Noise	1			Lack of a hammock	1
		Signs	1	Rules/Regulations/safety		Potholes in road	1
Rules/Regulations/safety		Facilities:		PsychoSocial:		Struggles with stirs	1
		Teahouse	3	Loud children	4(2)	Giftshop	1
PsychoSocial:		Unclean tables	1	Smokers	4	Noise of generator	1
Baby crying	(1)	Distance to carpark	1	Too many tourist	1	Other:	
Screaming children	2	Facilities	1	People traffic at water's edge	1	Price of water	1
Doing survey	5	Loudspeaker on the boat	1			Answering survey	1
		Not enough walking tracks	1			Swim	1
		Parking	2				
		Ramp	1(1)				
		No rowboat or other hire	1				
		Overdeveloped (boat trip)	1				
		Wood paths	1				

Comments on Questionnaire

Key Findings

The following are key findings in the comments made by visitors to Lake Barrine.

Stage 1: September 2001

- The most frequently reported negative comments about Lake Barrine focused on the lack of *disabled access and parking*, the *speakers on the tour boats being too loud*, and the site being “*too over the top*” with the restaurant and cruise boat.
- Comments that suggested improvements to the site focused on:
 - improved parking,
 - better disabled access,
 - safer railings around lakeside,
 - maintaining indigenous cultural information.
- Interestingly, the positive comments about Lake Barrine were considered by other respondents as being negative. The focus of such comments were on the good facilities at the site and the restaurant.

Stage 2: April 2002

- Due to lower number of surveys distributed and collected in Stage 2 compared to Stage 1, there were few comments made by respondents.
- The comments varied in their content.
- Positive comments focused on *tranquillity*, and how *well maintained* the site was.
- Negative comments focused on the *traffic noise*, and *behaviours of other visitors*.

ADDITIONAL COMMENTS MADE BY RESPONDENTS ON QUESTIONNAIRE

SITE : Lake Barrine

SEPTEMBER 2001

The following are additional comments made by 13 respondents who completed the questionnaire at Lake Barrine.

<u>Date</u>	<u>Comments</u>
29.09.01	The loudspeaker on the boat too loud - scares wildlife and limits appreciation of nature. <i>(Australian visitor, female, 37 years).</i>
29.09.01	Picnic tables need to be kept clean and washed. <i>(Australian visitor, male, 34 years).</i>
29.09.01	Loudspeakers on tour boats too loud. <i>(Australian visitor, male, 54 years).</i>
29.09.01	If facilities are here more people will visit, therefore parking/disabled access needs to be improved. Loved the play area; baby feed/change station would be great; safer railings around lakeside. <i>(Australian visitor, female, 33 years).</i>
29.09.01	Difficult for disabled; more parking were the aspects detracting from my enjoyment of the site. <i>(English visitor, female, 79 years).</i>
29.09.01	It's a bit over-the-top. A good place to camp and walk is all I want. <i>(Australian visitor, male, age: ?).</i>
29.09.01	I think the restaurant and big boat and shop are nice to have, but "bombastic" for a small, quiet lake like this. <i>(German visitor, female, age: ?).</i>
29.09.01	Walk down memory lane – as I grew up in the area over 35 years ago. <i>(Australian visitor, female, 40 years).</i>
30.09.01	This was a beautiful place – attractive and well-maintained and the lake cruise most enjoyable and informative – well done!! <i>(New Zealander visitor, female, 53 years).</i>
30.09.01	Lake Barrine has good facilities (the Teahouse), good birdwatching and other wildlife opportunities and good tracks, and it's the reason I bring Natural History tours here. <i>(Australian visitor, male, 32 years).</i>
30.09.01	An indigenous presence should be maintained. As white fellas we should be admitting we can't tell blackfella stories/history. Parking area – very inadequate; restaurant – should provide limited meals all the time; credit facilities on same floor as restaurant. It is 2001. <i>(Australian visitor, female, age: ?).</i>
30.09.01	Have been before – and today brought Southern visitors. They had no expectations of what would be here – and are more than pleased with the diversion. Misguided expectations that a little rowboat was for hire reduced my enjoyment: this would have topped off the day. <i>(Australian visitor, female, 50 years).</i>
30.09.01	Pleasant discussion with interviewer. <i>(New Zealand visitor, male, 66 years).</i>

LAKE BARRINE:

March/April 2002

The following are comments made by some respondents who completed the questionnaire at Lake Barrine

<u>Date</u>	<u>Comments</u>
31.03.02	Enjoyed our short stay. A beautiful tranquil spot. Lovely gardens and beautifully maintained. <i>(Australian visitor, female, 60 years).</i>
31.03.02	Great service. <i>(Australian visitor, female, 25 years).</i>
31.03.02	Traffic noise and movement at lake edge disturbed tranquillity. Visitors feeding birds created some disruption. <i>(Australian visitor, female, 32 years).</i>

Comments to Field Assistants**Key Findings**

The following comments were most frequently reported to the field assistants at Lake Barrine.

Stage 1: September 2001

- The majority of the comments on site were made by respondents who were keen to see the bird life and botany of the site.
- The comments made on the questionnaire were in regards to the questionnaire itself.

Stage 2: April 2002

- No additional comments were recorded during this data collection period.

ADDITIONAL COMMENTS MADE BY RESPONDENTS TO FIELD ASSISTANTS**SITE : Lake Barrine September 2001**

The following are comments made by 5 visitors to the field assistants at Lake Barrine.

<u>Date</u>	Comments on site
30.09.01	Birdwatchers <i>(English visitors, female, 52 years; male, 53 years)</i>
30.09.01	Member of botanical society. Keen to see native plants. <i>(Australian visitor, female, age: ?)</i>

ADDITIONAL COMMENTS MADE BY RESPONDENTS TO FIELD ASSISTANTS**SITE : Lake Barrine April 2002**

No additional comments were recorded during this data collection period.

BEHAVIOURAL EVENTS**Key Findings**

Combined Data Sets

From the behaviours recorded at Lake Barrine in September 2001 and April 2002, the following two events were most frequently observed.

- Interaction with wildlife

Most of the wildlife interaction was associated with visitors feeding the bush turkeys and water birds. This occurred at both stages of data collection.

- Inappropriate Behaviour

The most frequently observed inappropriate behaviours were associated with vehicle traffic. Some visitors were playing very loud music and showing frustration at roadway congestion by beeping their car horn.

Tourist groups were observed dropping cigarette butts in the sheltered area.

BEHAVIOURAL EVENTS**Key Findings****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	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
Deliberate Damage to Plants	<ul style="list-style-type: none"> N/A 	31.03.02 <ul style="list-style-type: none"> Took some tree/flower cuttings. 09.45 hrs.
Undesignated Area Use	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
Speeding	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
Risk Activity	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
Aggressive Behaviour	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
Other	29.09.01 <ul style="list-style-type: none"> Poor / difficult parking. 10.00, 10.15, 10.20 hrs. Interaction with wildlife: Feeding bush turkey. 14.15 hrs. 30.09.01 <ul style="list-style-type: none"> Interaction with wildlife: Videoing wildlife. 10.45, 12.20 hrs. Chasing wildlife (child). 12.00 hrs. Feeding habituated turkey. 12.45, 15.45 hrs. 	31.03.02 <ul style="list-style-type: none"> Inconsiderate activity: Car drove down; music blasting. Whole lake could hear it. 13.10 hrs. Car beeped another. 13.15 hrs. Interaction with wildlife: Visitor was feeding apple to wild turkeys. 12.30 hrs. 01.04.02 <ul style="list-style-type: none"> Three brush turkeys scavenging on side of road. 08.30 – 09.00 hrs. Four groups tend to leave a cloud of insect repellent behind before going into forest. Littering: Visitor dropping cigarette butts. 14.05 hrs. Interaction with wildlife: Visitors feeding the brush turkeys & water birds. 14.05 hrs.

Section Two

Infrastructure Inventory and Profile



-
- Site Infrastructure Inventory
 - Site Information and Signage
-

Lake Barrine

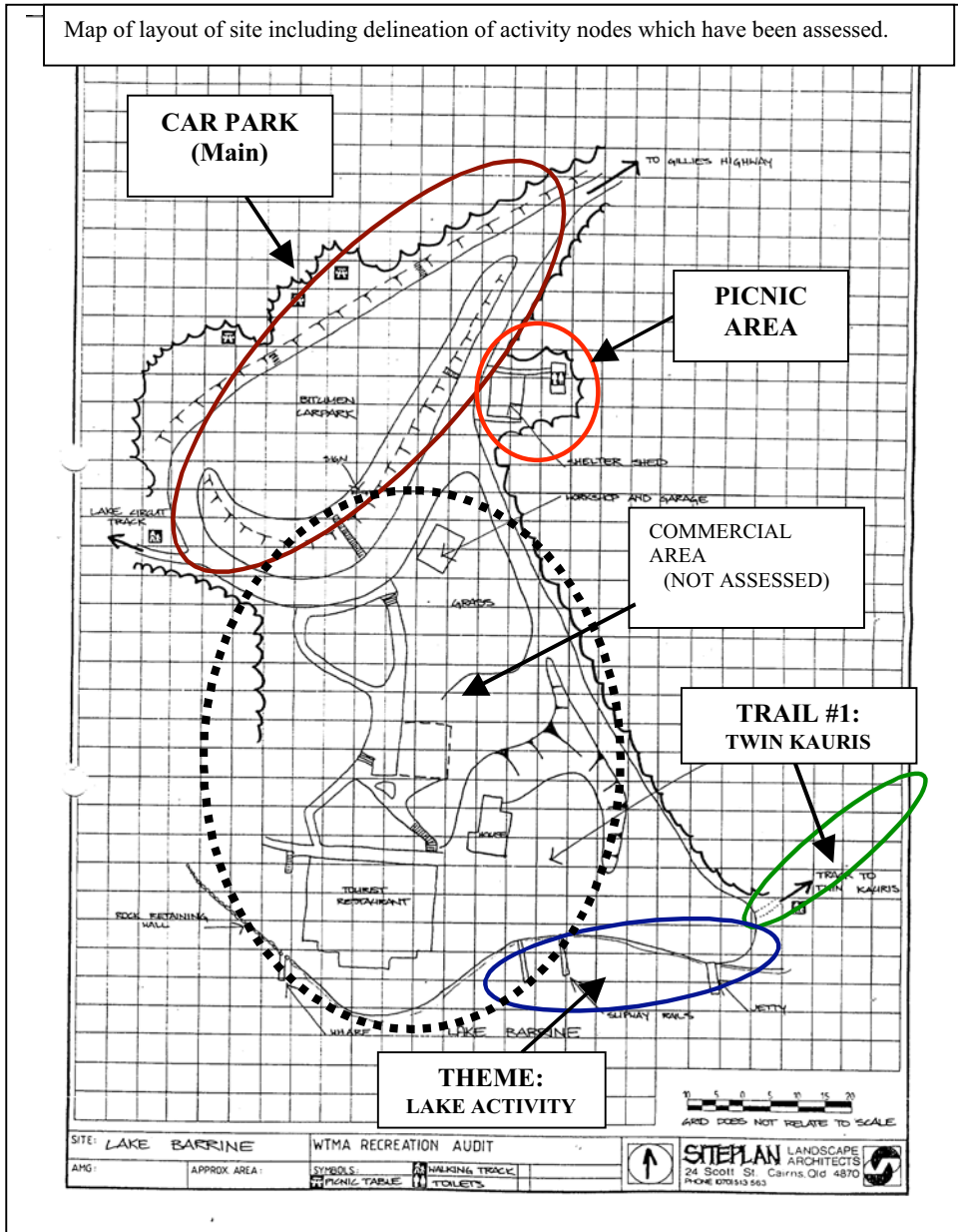


Figure 1: Lake Barrine site map (Source: SitePlan 1993, modified to show activity nodes).

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. Details of signage and facilities are presented in the following pages.

LAKE BARRINE		Wet Tropics Site No. : 52 Management Agency: EPA / QPWS Date Assessed: 12.12.98; April 2002							
Site Parameters		Annual vehicle/visitor # Site Access: Road Type: Road Conditions:				Annual vehicle/visitor # Site Access: Road Type: Road Conditions:			
		Vehicles = 68,711; Visitors = 240,489 Road Sealed Good				Vehicles = 60,852; Visitors = 191,684 Road Sealed Good (some potholes)			
		Car Park (Main)		Picnic Area		Theme - Lake Area		Theme - Twin Kauris	
Facilities / Infrastructure		1998:	2002:	1998:	2002:	1998:	2002:	1998:	2002:
Landscaping:		Minimal	Minimal	Hard	Hard	Hard	Hard	Hard	Hard
Signage:									
Corporate Identity		1	1	Absent	Absent	Absent	Absent	Absent	Absent
Visitor Orientation		Absent	Absent	Absent	Absent	1	2	Absent	Absent
Visitor Advice		Absent	Absent	1	1	1	1	Absent	Absent
Regulatory		Absent	Absent	1	1	Absent	2	1	1
Interpretive		1	1	1	Absent	Absent	Absent	4	4
Foreign Language		Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
Capacity / Description:		27 x 67 m	27 x 67 m	15 seats	15 seats				Boardwalk
Amenities / Utilities									
Toilets:		Absent	Absent	Septic	2 x Septic	Absent	Absent	Absent	Absent
Showers:		Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
Bins:		Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
Water:		Absent	Absent	Present	Present	Absent	Absent	Absent	Absent
Power:		Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
Telephone:		Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
Other		Absent	Absent	3 tables, 1 sheltershed	3 tables, 1 sheltershed	3 tables	1 tables	Absent	Absent
Appeal									
Attractiveness:									
Naturalness (within)		Low	Low	Medium	Medium	Medium	Medium	High	High
Naturalness (surrounding)		High	Medium	High	High	High	High	High	High
Nuisance insects		Low	Nil	Low	Nil	Low	Low	Low	Low
Built environment		Medium	Low	Medium	Medium	Medium	Medium	High	High
Shade		50%	50 - 60%	80%	80%	50%	50%	90%	90%
Noise (human origin):		Medium	High - cars	Medium	High - cars	Medium	Medium	Medium	Medium
Biophysical									
Landform:		Gently inclined		Moderate - Steep		Gently inclined		Moderately inclined	
Altitude:									
Vegetation:		Rainforest		Rainforest		Rainforest		Rainforest	
Geology:		Basalt		Basalt		Basalt		Basalt	
Water body:		Lake		Lake		Lake		Absent	
Impact Assessment									
Condition Indicators:									
Litter (visual impact)		Low	Medium	Low	Low	Medium	Low	Low	Low
Litter (amount)		<5 items	<25 items	<5 items	<10 items	>6-20	<5 items	<5 items	<5 items
Litter (type)		Paper, tins, cig butts	Paper, cig butts	Paper, cig butts	Paper, cig butts	-	-	Paper, plastic, cigbutts	Paper, cig butts
Waste Management		Nil	No bins	No bins	No bins	Nil	No bins	Nil	No bins
Wear on facilities		Medium	Medium	Low	Low	Medium	Medium	Nil	Low
Vandalism / graffiti		Low	Nil	Low	Low	Nil	Low	Low	Low
Environmental Indicators:									
Soil erosion		Nil	Low	Low-grass	Low-grass	Medium	Low	Low	Low
Exotic weeds		Low -grass	Low -grass	Medium	Medium	Medium- Nil	Medium- Nil	Nil	Nil
Exotic ornamentals		Medium	Medium	Nil	Nil	Nil	Nil	Nil	Nil
Vegetation		No mutilation / breakage	No mutilation/ breakage	No break, low mutilat	No breakage / mutilation	No mutilatio breakage	No mut / breakage	Low breakage, low mutilation	Low breakage, low mutilation
Wildlife		No habituation	No habituation	Habituated scrub turkeys	Habituated scrub turkeys ST	Habituated water birds	Habituated water birds, ST	Habituated scrub turkeys	No habituation
Additional Notes		1998: Cassowary known to access the site. 2002: Cassowary no longer present – road kill		No rubbish bins , sign “Your rubbish your responsibility”.		1998: Birds being fed, and scavenging on scraps.		Short trail to theme.	

Site Infrastructure Inventory

Details

A. Car Park

Parking Areas: There are three parking areas, one public (main top car park), one private (middle car park), and one bottom bus turn-round and parking area. The middle and top parking area service the picnic area, the walking tracks and the commercial area. The bottom parking area services the lake cruise boat. All car parks are unsealed and separated from each other by ring road and gardens. No designated parking bays are present. Many vehicles park along the access road when car parks are full.

B. Picnic Area

Amenities Area: A small toilet block (septic) is set down below the shelter shed.

Picnic Area: The picnic area consists of a large shelter shed which contains three large tables and a number of benches.

C. Theme – Swimming & Boat Cruise area

Along the edge of the lake there is a small partially landscaped water edge section which contains one picnic table. This is also the beginning of the short walk to the twin kauri pines.

D. Walking Track – To twin kauri pines

Walking Track: From the lakes edge a short walking track leads to the twin kauri pines. This is a highly developed walk part of which is a boardwalk. This walk also leads on to the access road.

There is a substantial commercial enterprise situated at the edge of the lake. Surrounding this are highly developed and landscaped gardens.

A. Parking Area



Bottom Car Park



Middle Car park



Top Car Park

B. Day Use Area



Shelter Shed

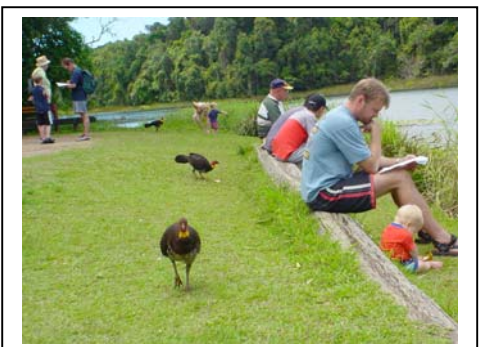
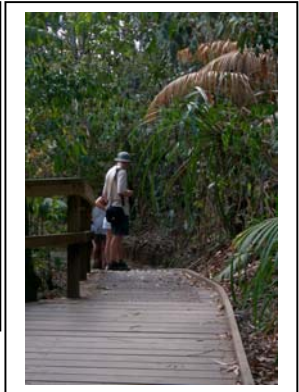
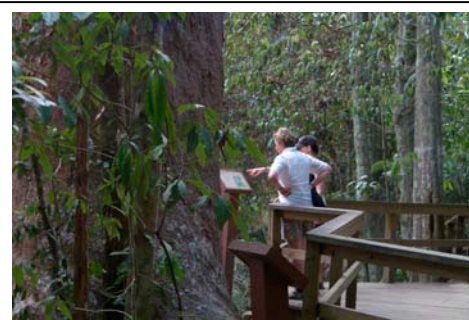
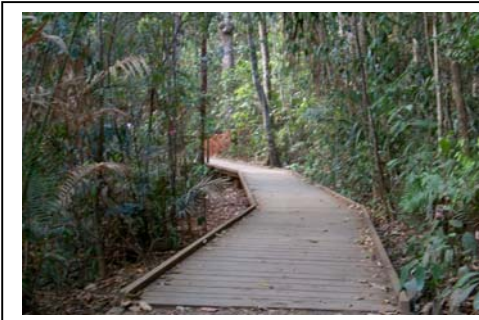


Toilet Block



Lake Barrine Tea House

C. Walking Track – Twin Kauris & Theme – Swimming Area



Site Information and Signage

The information and signage for the four key activity nodes of Lake Barrine (car parks, day use/picnic area, walking track to twin Kauris, and Theme – Swimming/lake side area) and the main and access roads, have been grouped, as best as possible, according the Department of Natural Resource’s five broad sign categories. Details of signage in and around the commercial area have not been included in this assessment, however a general comment is included regarding the themes/content of this signage. The inventory includes numbers of actual sign structures and total information types according to these categories within each of the activity nodes. Assessment of the content of signage was not undertaken in this research.

Key Findings

- A total of **19 sign structures containing 39 sets of information** relevant to Lake Barrine were recorded along the main road, access road and at Lake Barrine itself (Table 1).
- Most of these signs were for **visitor orientation and advice**, however the orientation signage did not include a map of the site.
- The **interpretive** signage present focused on **ecological information** and was located along the walking track to the Twin Kauris.
- **One corporate identity** (National Parks) sign was present along the access road. No Wet Tropics sign was located.
- No **foreign language** signage present at this site.

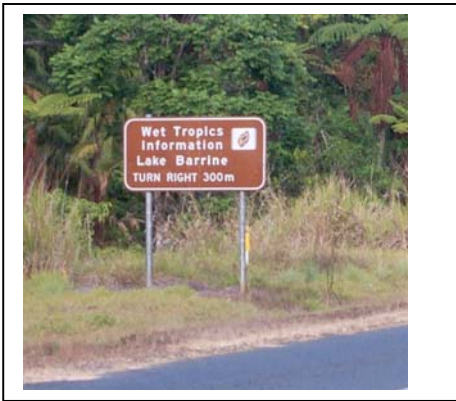
Table 1: Number and type of signs at Lake Barrine

Sign Category	Main Road	Access Road	Car Parks	Day Use /Picnic Area	Walking Track – Twin Kauris	TOTAL
Interpretive					4	4
Visitor orientation	6	4		2	3	15
Visitor advice	8	6	1		1	16
Regulatory					2	2
Corporate Identity		1	1			2
TOTAL (Information Categories)	14	11	2	2	10	39
# Sign Structures	3	4	2	2	8	19
<i>SitePlan 93</i>						<i>(19)</i>

Comparative Data Set

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

Main Road (Gillies Highway)



Access Road (short sealed road)



Car Park Signage



Picnic Area / Shelter Shed Signage



Trail Signage – Twin Kauris



Section Three

Vehicle and Visitor Monitoring



-
- Vehicle and Visitor Records
 - Traffic Counter Data
-

Vehicle and Visitor Records: *Lake Barrine*

Summary Table of visitor and vehicle records established over four x eight hour observation periods

	Visitors					Vehicles				
	Type	# in 8hrs	# per vehicle	Highest # at one time	Time	Type	# in 8hrs	Highest # at one time	Time	Average Length of Stay
29 Sept 2001	Families/ Small Groups 61%	597	2.84	160	1045	Cars 72%	210	45	1045	48mins
30 Sept		613	2.84	125	1130		216	45	1330	62mins
31 March 2002	Couples 48%	768	2.60	179	1120	Cars 67%	295	78	1415	76mins
1 April		719	2.41	160	1145		298	52	1145	64mins

Traffic Counter Data: *Lake Barrine*

Summary Table of traffic counter data for a twelve month period (September 2001-2002).

	Visitors					Vehicles		
	Average #	Highest #	Time Of Highest	Lowest #	Time Of Lowest	Average #	Highest #	Lowest #
Yearly	191,684					60,852		
Monthly	15,875	24,309	August 2002	7,577	February 2002	5,041	7,717	2,399
Weekly	3,742	5,536	September Wk 4	2,133	February Wk 2	1,188	1,757	677
Daily Weekdays	504	825	1 st Jan 2002	236	15 th Feb 2002	160	262	75
Daily Weekends	646	1273	28 th Sept 2002	315	16 th Feb 2002	205	404	100

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). This is the first time this type of data has been collected at Lake Barrine and so previous data is unavailable for comparative purposes.

Stage 1: 29th and 30th September 2001

Pattern of access to and use of Lake Barrine:

Figure 1

General

- **Vehicle Type:** The majority of vehicles using the site over the two days of observation were *cars* (72%).
- There were just a few *commercial coaches/buses* using Lake Barrine during this period.
- **Visitor Category:** Lake Barrine appears to be favoured by *independent visitors* with groups of three and four making up the major visitor category over these two days (61%).

Day 1 (29th September 2001 - Saturday)

- A total of **597 people** in **210 vehicles** visited lake Barrine during this eight hour observation period.
- There was **one distinct peak** in visitor numbers around **1045 hours**;
- The highest number of visitors at the site at any one time was **160 at 1045 hours**. Visitor numbers remained above 40 for most of the day 0930 and 1545 hours.
- The highest number of vehicles at the site at any one time was **45 at 1045 hours**. For most of the day vehicle numbers at the site remained between 20 and 45 vehicles (1000 to 1530 hours).

Day 2 (30th September 2001 - Sunday)

- A total of **613 people** in **216 vehicles** visited Lake Barrine during this eight hour observation period.
- There was **one distinct peak** in visitor numbers **at 1130 hours**.
- The highest number of visitors at the site at any one time was **125 at 1130 hours**. Visitor numbers remained above 60 for most of the day (1030 - 1600 hours).
- The highest number of vehicles at the site at any one time was **45 at 1330 hours**. From between 1030 and 1630 hours vehicle numbers remained between 20 and 45.

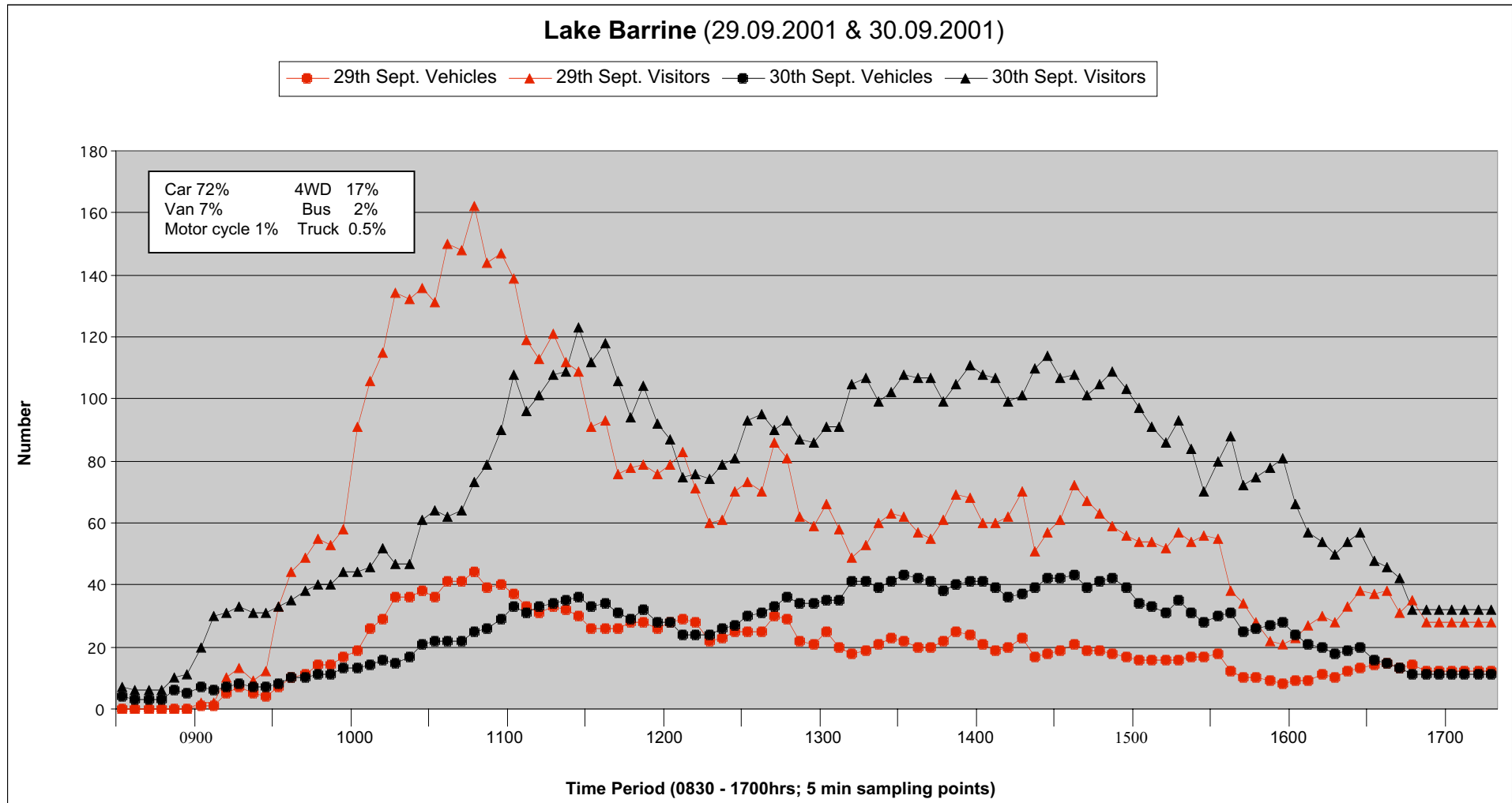
Length of Stay:

Figures 2 and 3

- There were slightly fewer vehicles observed at the site on Day 1 (210 vehicles) compared to Day 2 (216 vehicles), and fewer people (597 visitors Day 1, 613 visitors Day 2).
- The average length of stay was **48 minutes** on Day 1, and **62 minutes** on Day 2.
- On Day 1, 32% of the vehicles stayed longer than one hour (37% stayed 5 minutes or less). On Day 2, 43% of the vehicles stayed longer than one hour (21% stayed 5 minutes or less).

VEHICLE AND VISITOR COUNT DATA: LAKE BARRINE

Figure 1: Records for Vehicles and Visitors at Lake Barrine.



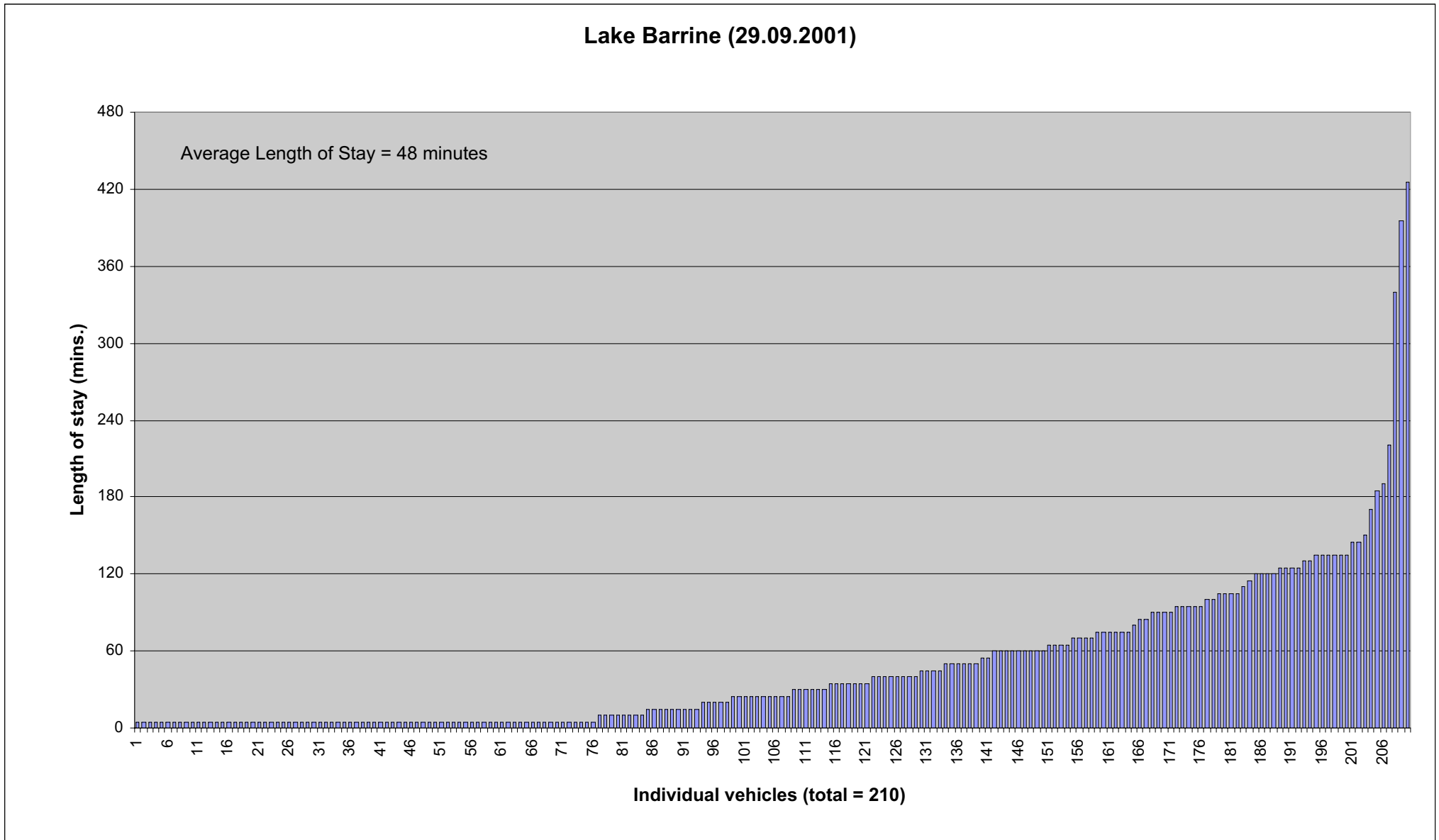


Figure 2: Length of stay of each vehicle at Lake Barrine on Day 1 - 29.09.2001.

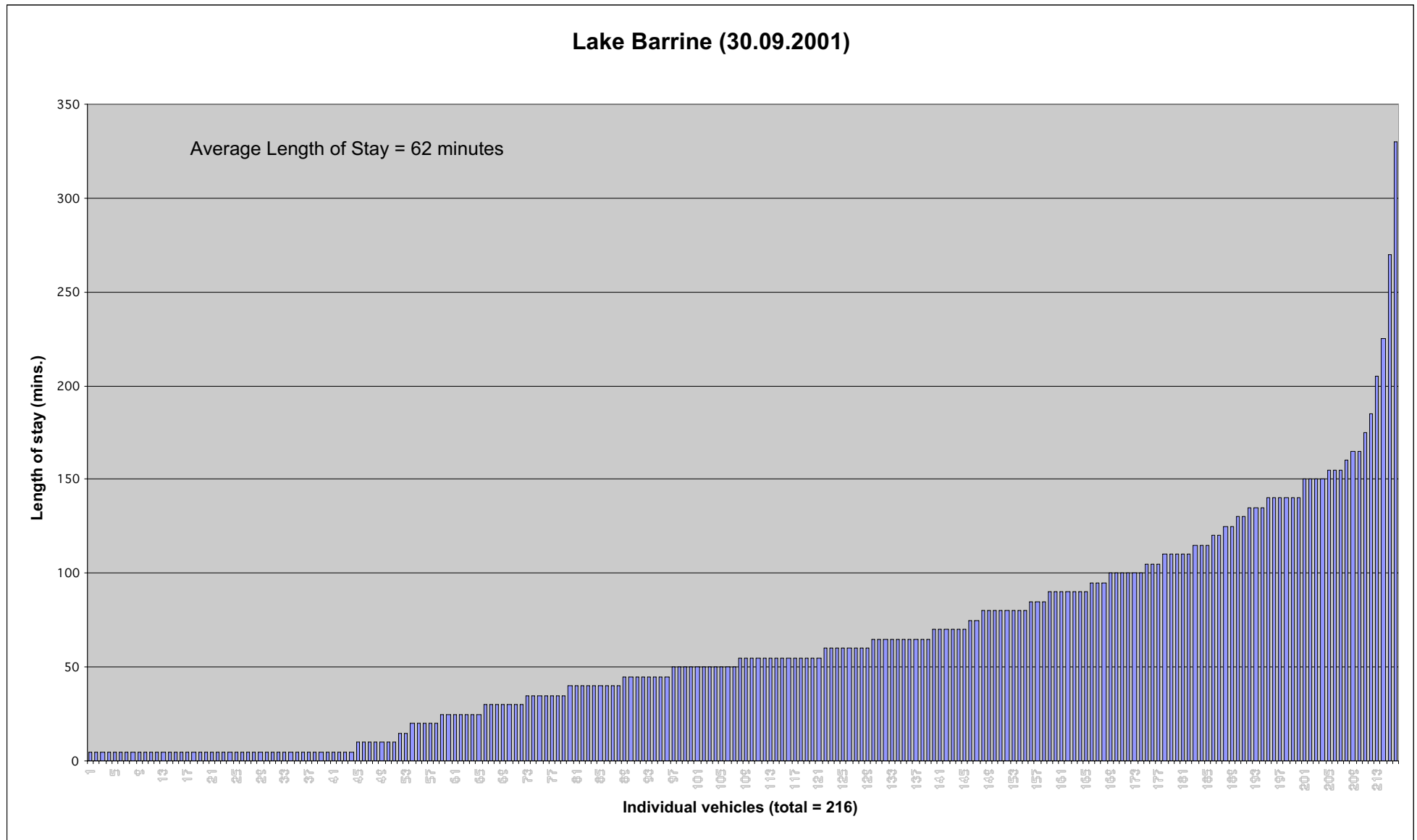


Figure 3: Length of stay of each vehicle at Lake Barrine on Day 2 - 30.09.2001.

Vehicle and Visitor Records

Key Findings

Stage 2: 31st March and 1st April 2002

Pattern of access to and use of Lake Barrine:

Figure 4

General

- **Vehicle Type:** The majority of vehicles using the site over the two days of observation were *cars (67%)*. There were *few commercial coaches/buses* using Lake Barrine during this period.
- **Visitor Category:** Lake Barrine appears to be favoured by *independent visitors* with family/small groups making up the major visitor category over these two days.

Day 1 (31st March 2002 - Sunday)

- A total of **768 people** in **295 vehicles** visited Lake Barrine during this eight hour observation period.
- There were **three distinct peaks** in visitor numbers between **1100 and 1130 hours** (170 visitors), **1215 hours** (170 visitors) and **1400 and 1430 hours** (179 visitors);
- The highest number of visitors at the site at any one time was **179 at 1120 hours**. Visitor numbers remained between 120 and 180 for most of the day (1100 – 1530 hours).
- The highest number of vehicles at the site at any one time was **78 at 1415 hours**. For most of the day number of vehicles at the site remained between 40 and 80 (1000 – 1600 hours).

Day 2 (1st April 2002 - Monday)

- A total of **719 people** in **298 vehicles** visited Lake Barrine during this eight hour observation period.
- There was **one distinct peak** in visitor numbers **at 1145 hours**.
- The highest number of visitors at the site at any one time was **160 at 1145 hours**. Between 0930 and 1615 hours number of visitors at the site at any one time remained between 60 and 160.
- The highest number of vehicles at the site at any one time was **52 at 1145 hours**. From between 1100 and 1445 hours vehicle numbers remained between 40 and 52.

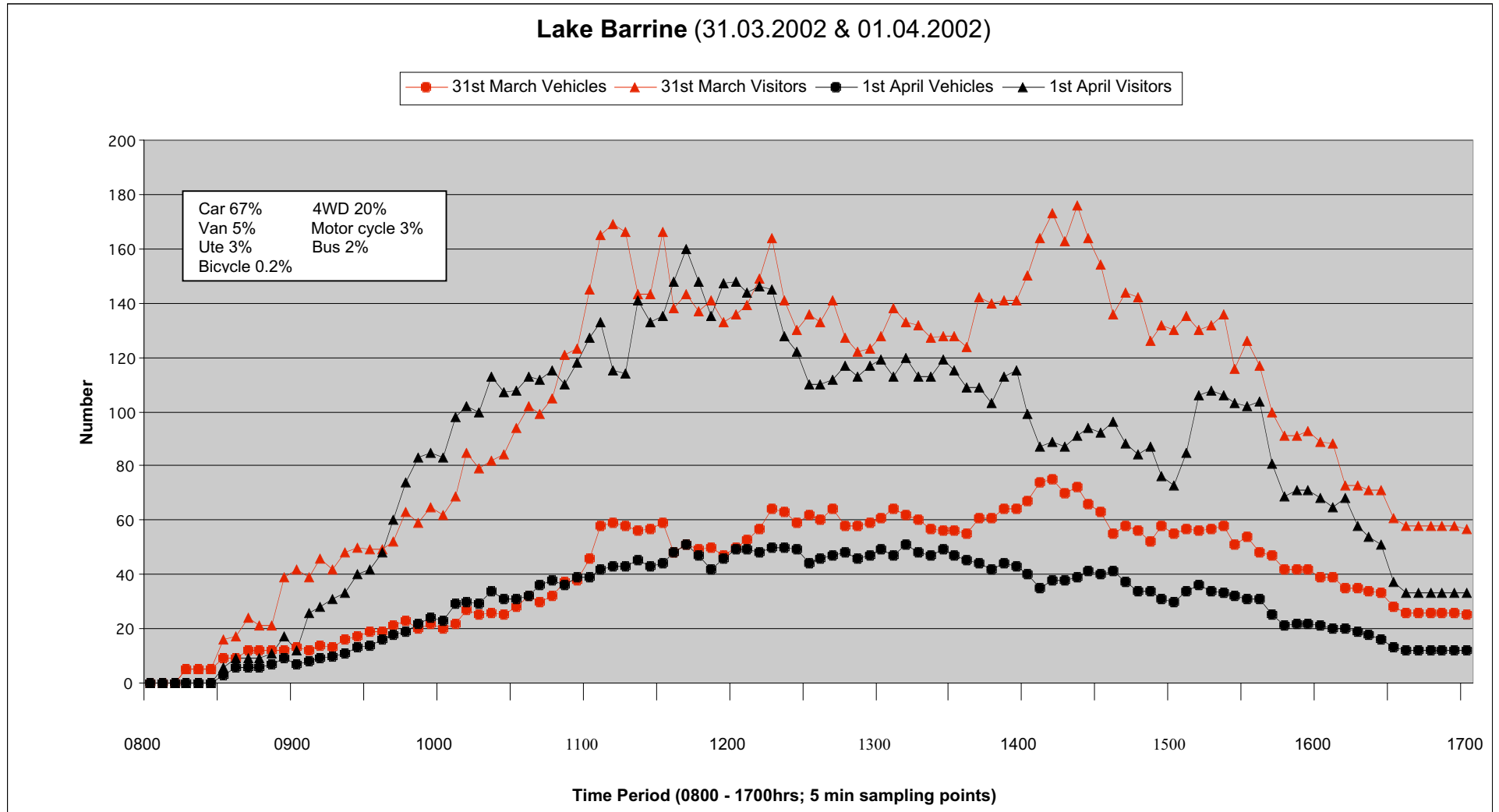
Length of Stay:

Figures 5 and 6

- There were almost the same number of vehicles at the site on Day 1 (295 vehicles) and Day 2 (298 vehicles).
- The average length of stay was **76 minutes** on Day 1, and **64 minutes** on Day 2.
- On Day 1, 54% of the vehicles stayed longer than one hour (11% less than 5 minutes). On Day 2 this was 51% (9% less than 5 minutes).

VEHICLE AND VISITOR COUNT DATA: LAKE BARRINE

Figure 4: Records for Vehicles and Visitors at Lake Barrine.



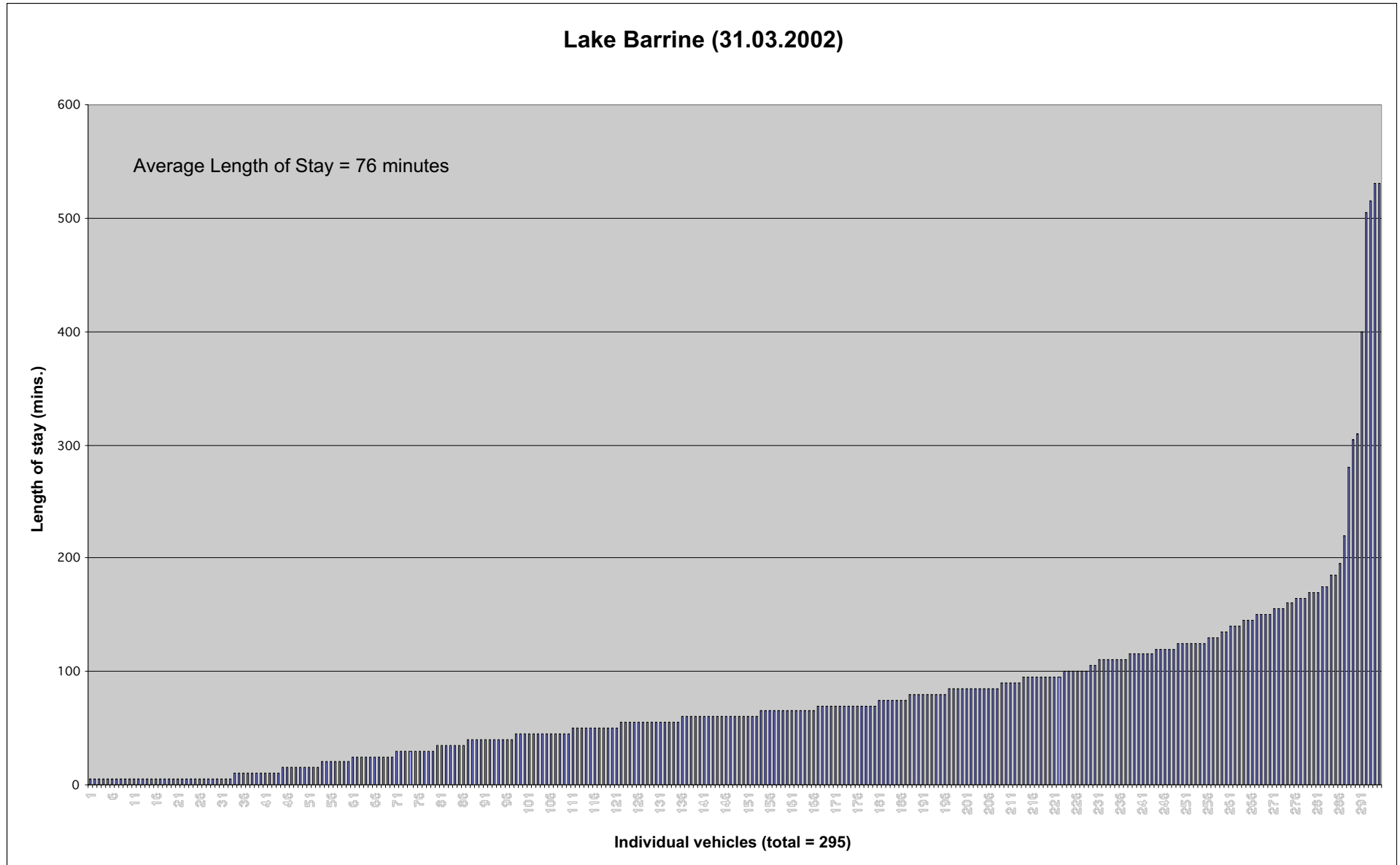


Figure 5: Length of stay of each vehicle at Lake Barrine on Day 1 - 31.03.2002.

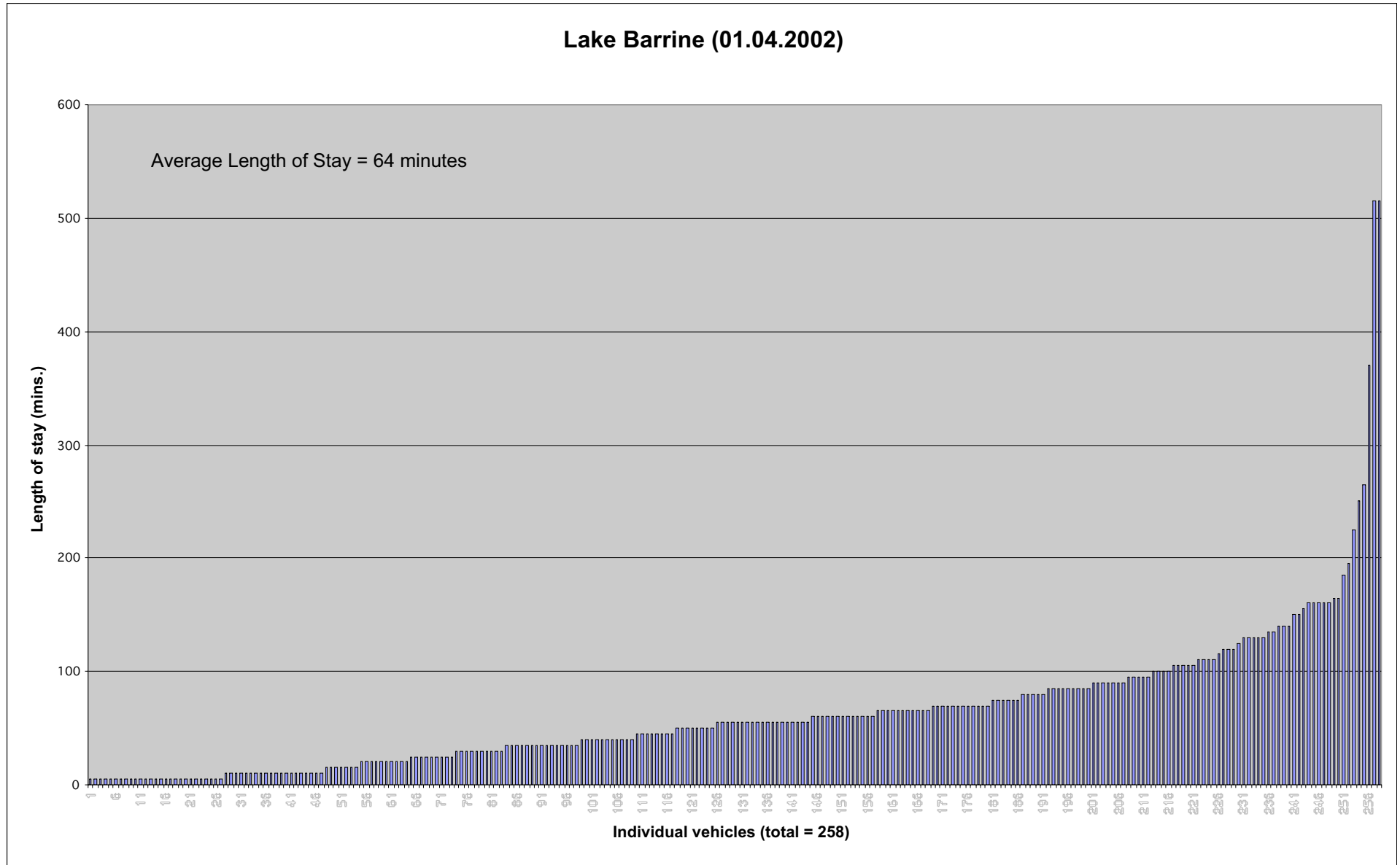


Figure 6: Length of stay of each vehicle at Lake Barrine on Day 2 01.04.2002.

Traffic Counter Data

Key Findings

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

Yearly Estimates = 60,852 vehicles and 191,684 visitors

Monthly Records:

Figure 7

The following figures have been based on 10.5 months of traffic recording due to the malfunctioning of the traffic counter during the months of March, April and May 2002.

- On average **5,041 vehicles** (range = 2,399 – 7,717) and **15,875 people** (range = 7,577 – 24,309) visited Lake Barrine each month.
- **July and August 2002** received the **highest** visitation rates during which time vehicle numbers exceeded 6,000 and visitor numbers exceeded 20,000. The quietest month was February 2002 but even so visitor numbers did not drop below 7,500.

Weekly Records:

Figure 8

- On average **1,188 vehicles** (range = 677 – 1,757) and **3,742 people** (range = 2,133 – 5,536) visit Lake Barrine each week.
- There was one discernible weekly period of increased vehicular traffic levels recorded during sampling: **September 2002** (week 4).
- The highest number of vehicles and visitors was in **September 2002, Week 4**, during which week **1,257 vehicles and 5,536 visitors** used this site. The quietest week was in February 2002, Week 2.

Daily Records:

Figure 9 and Table 1

- On average, **172 vehicles** (range = 155 – 209) and **542 people** (range = 489 – 648) visited Lake Barrine each day.
- During the week little change in visitation rates occurred. **Average weekday use = 160 vehicles per day.**
- Highest number of visitations in a one day period occurred on 28th September 2002 (404 vehicles and 1273 visitors).
- Weekends were busier than weekdays with Sunday recording, on average, 209 vehicles and 658 people. Sunday visitation rates higher than Saturday. **Average weekend use = 205 vehicles per day.**

Comparative Traffic Counter Data

A. Estimated visitor use at Lake Barrine 1992/93: (Source: Manidis Roberts 1993/94)

Yearly Estimates vehicles = 57,867; people = 312,281 (calculated on 5.4 people per vehicle)
 Average weekend use = 166.7 vehicles (wet); 215.7 vehicles (dry)
 Average weekday use = 109.4 vehicles (wet); 152.4 (dry)

B. Estimated visitor use at Lake Barrine 1998: (Source: Bentrupperbäumer & Reser 2000)

Yearly Estimates vehicles = 68,711; people = 240,481 (calculated on 3.5 people per vehicle)

TRAFFIC COUNTER/METRO COUNT DATA: LAKE BARRINE

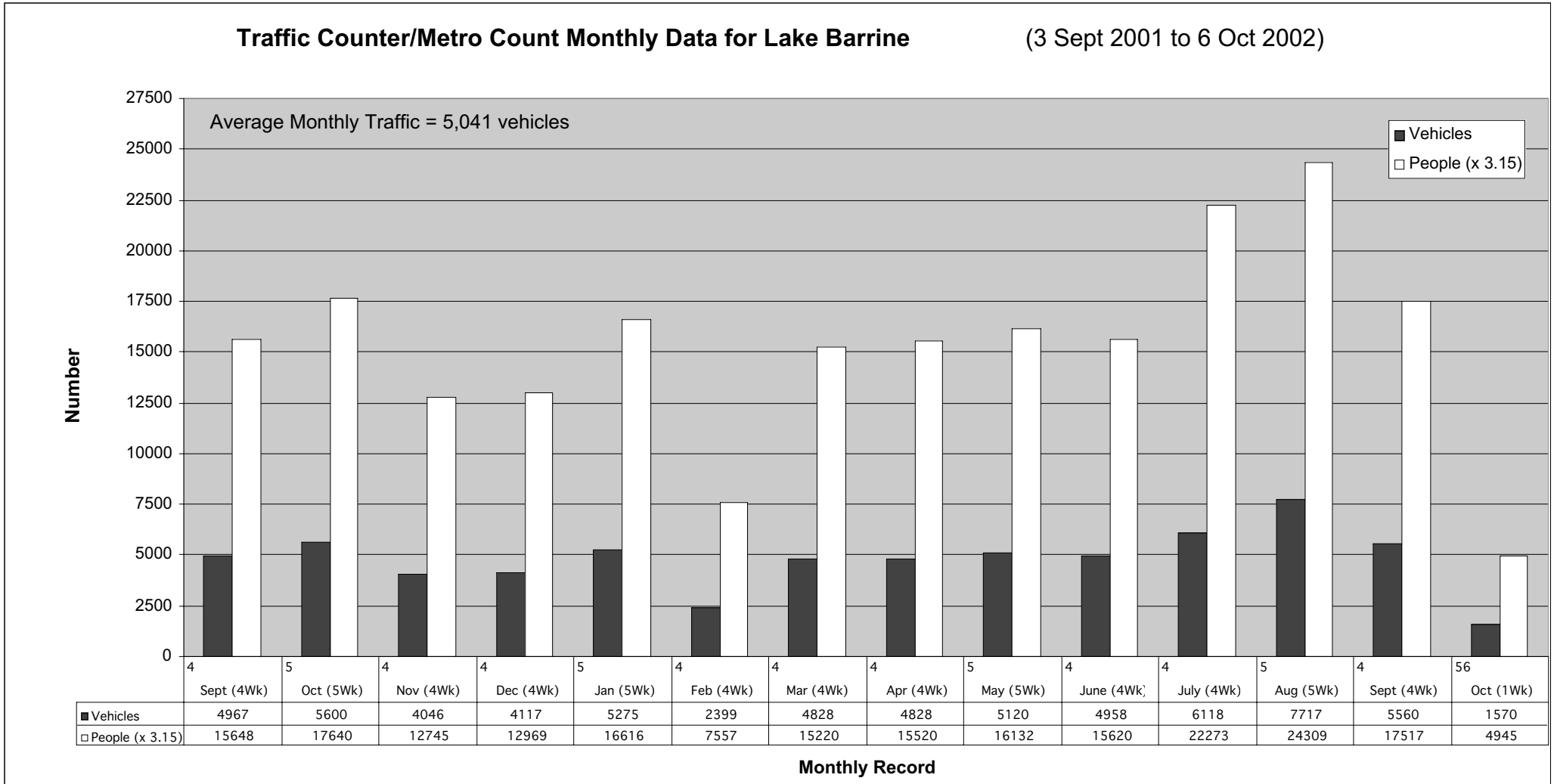


Figure 7: Monthly Records for Vehicles and Visitors at Lake Barrine.

TRAFFIC COUNTER/METRO COUNT DATA: LAKE BARRINE

Traffic Counter/Metro Count Weekly Data for Lake Barrine(3Sept 2001 to 6Oct 2002)

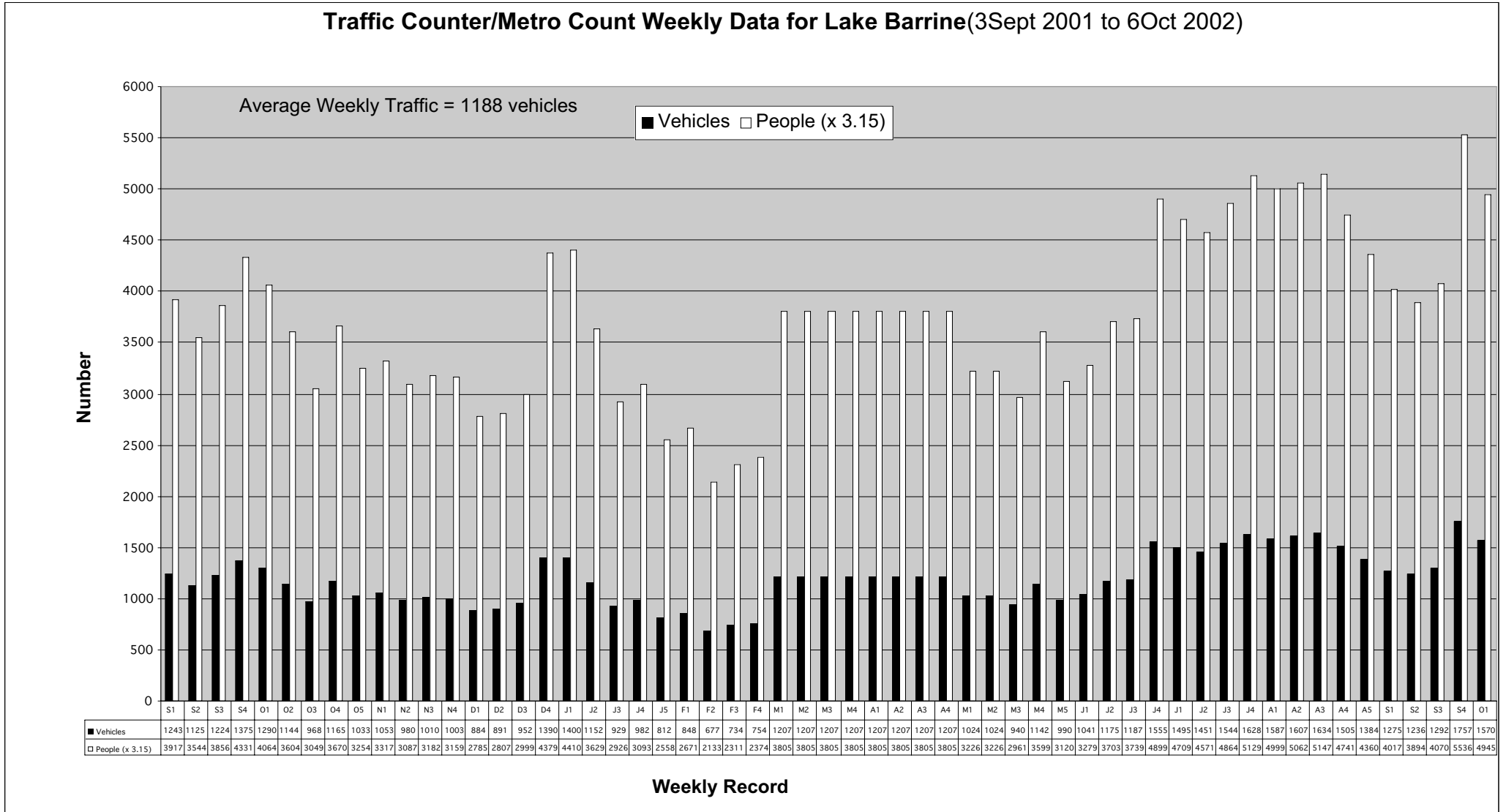


Figure 8: Weekly Records for Vehicles and Visitors at Lake Barrine.

TRAFFIC COUNTER/METRO COUNT DATA FOR LAKE BARRINE

Table 1: Daily Records of Vehicles and Visitors.

SEPTEMBER 2001														
Data highlighted in yellow are daily averages for this month. Traffic counter was not installed until Week 2.														
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	174	548	172	542	159	501	173	545	150	473	211	665	204	643
Wk 2 10-16Sept	183	576	176	554	139	438	152	479	132	416	153	482	191	602
Wk 3 17-23Sept	168	529	149	469	137	432	156	491	152	479	258	813	206	649
*Wk 4 24-30Sept	171	539	191	602	200	630	210	662	167	526	221	696	216	680
OCTOBER 2001														
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	167	526	186	586	194	611	190	599	177	558	164	517	214	674
Wk 2 8-14Oct	131	413	145	457	177	558	150	473	152	479	200	630	191	602
Wk 3 15-21Oct	114	359	147	463	137	432	130	410	148	466	138	435	155	488
Wk 4 22-28Oct	106	334	133	419	160	504	149	469	136	428	262	825	220	693
Wk 5 29-4 Nov	122	384	131	413	129	406	151	476	162	510	157	495	183	576
NOVEMBER 2001														
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	126	397	147	463	143	450	124	391	126	397	168	529	220	693
Wk 2 12-18Nov	119	375	141	444	119	375	147	463	130	410	157	495	168	529
Wk 3 19-25Nov	106	334	108	340	124	391	129	406	123	387	246	775	176	554
Wk 4 26-2Dec	112	353	133	419	124	391	111	350	107	337	234	737	183	576
DECEMBER 2001														
Blue = Public Holiday														
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	111	350	130	410	105	331	111	350	109	343	132	416	188	592
Wk 2 10-16Dec	144	454	122	384	113	356	122	384	117	369	123	387	151	476
*Wk 3 17-23Dec	113	356	115	362	115	362	107	337	147	463	178	560	179	564
*Wk 4 24-30Dec	113	356	91	287	249	784	185	583	195	614	252	794	307	967

JANUARY 2002 Blue = Public Holiday														
2002	MON		TUE		WED		THU		FRI		SAT		SUN	
	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People
*Wk 1 31Dec-6Jan	170	536	262	825	188	592	206	649	179	564	183	576	214	674
*Wk 2 7-13Jan	163	513	167	526	152	479	146	460	141	444	173	545	212	668
*Wk 3 14-20Jan	111	350	119	375	135	425	143	450	131	413	147	463	145	457
*Wk 4 21-27Jan	97	306	127	400	112	353	114	359	107	337	199	627	227	715
Wk 5 28Jan-3Feb	210	662	82	258	82	258	93	293	96	302	103	324	147	463
FEBRUARY 2002 Data highlighted in yellow are daily averages for this month.														
2002	MON		TUE		WED		THU		FRI		SAT		SUN	
	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People
Wk 1 4-10Feb	103	324	100	315	103	324	106	334	88	277	128	403	221	696
Wk 2 11-17Feb	87	274	104	328	96	302	102	321	75	236	100	315	114	359
Wk 3 18-24Feb	95	299	102	321	95	299	78	246	82	258	114	359	168	529
Wk 4 25-3Mar	95	299	102	321	98	309	95	299	82	258	114	359	168	529
MARCH 2002 No new data for this period. Battery in traffic counter malfunctioned and so the figures for these months have been based on yearly averages.														
2002	MON		TUE		WED		THU		FRI		SAT		SUN	
	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People
Wk 1 04-10Mar	155	489	165	522	160	504	158	498	159	500	201	634	209	658
Wk 2 11-17Mar	155	489	165	522	160	504	158	498	159	500	201	634	209	658
Wk 3 18-24Mar	155	489	165	522	160	504	158	498	159	500	201	634	209	658
Wk 4 25-31Mar	155	489	165	522	160	504	158	498	159	500	201	634	209	658
APRIL 2002 No new data for this period.														
2002	MON		TUE		WED		THU		FRI		SAT		SUN	
	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People
*Wk 1 01-07Apr	155	489	165	522	160	504	158	498	159	500	201	634	209	658
Wk 2 08-14Apr	155	489	165	522	160	504	158	498	159	500	201	634	209	658
Wk 3 15-21Apr	155	489	165	522	160	504	158	498	159	500	201	634	209	658
Wk 4 22-28Apr	155	489	165	522	160	504	158	498	159	500	201	634	209	658

MAY 2002														
Data highlighted in yellow are daily averages for this month.														
2002	MON		TUE		WED		THU		FRI		SAT		SUN	
	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People
Wk 1 29-5May	134	422	143	450	125	394	134	422	134	422	184	580	170	536
Wk 2 6-12May	134	422	143	450	125	394	134	422	134	422	184	580	170	536
Wk 3 13-19May	138	435	148	466	114	359	116	365	118	372	147	463	159	501
Wk 4 20-26May	138	435	158	498	129	406	155	488	137	432	266	839	159	501
Wk 5 27-02Jun	127	400	124	391	131	413	130	410	146	460	139	438	193	608
JUNE 2002														
2002	MON		TUE		WED		THU		FRI		SAT		SUN	
	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People
Wk 1 03-09Jun	115	362	142	447	124	391	116	365	152	479	153	482	239	753
Wk 2 10-16Jun	218	687	160	504	150	473	130	410	158	498	179	564	180	567
Wk 3 17-23Jun	138	435	175	551	140	441	146	460	153	482	232	731	203	639
*Wk 4 24-30Jun	164	517	217	684	208	655	204	643	207	652	273	860	282	888
JULY 2002 Data highlighted in yellow are the daily averages for this month.														
2002	MON		TUE		WED		THU		FRI		SAT		SUN	
	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People
*Wk 1 01-07Jul	209	658	231	728	220 Tsv	693	202	636	191	602	219	690	223	702
Wk 2 08-14Jul	191	602	214	674	175	551	188	592	198	624	228	718	257	810
Wk 3 15-21Jul	175	551	211	665	177	558	222	699	251 Cns	791	255	803	253	797
Wk 4 22-28Jul	248	781	224	706	222	699	206	649	178	561	306	964	244	769
AUGUST 2002 (Events counts were used from this point onwards)														
2002	MON		TUE		WED		THU		FRI		SAT		SUN	
	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People
Wk 1 29-04Aug	202	636	249	784	225	709	223	702	210	663	209	658	269	847
Wk 2 05-11Aug	194	611	224	706	215	677	259	816	226	712	234	737	255	803
Wk 3 12-18Aug	225	709	226	712	234	737	206	649	216	680	245	772	282	888
Wk 4 19-25Aug	197	621	207	652	220	693	178	561	180	567	287	904	236	743
Wk 5 26-01Sep	202	636	209	658	176	554	179	564	164	517	204	643	250	788

SEPTEMBER 2002														
2002	MON		TUE		WED		THU		FRI		SAT		SUN	
	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People
Wk 1 02-08Sep	163	513	157	495	184	580	167	526	180	567	190	599	234	737
Wk 2 09-15Sep	171	539	150	472	172	542	158	498	177	558	196	617	212	668
Wk 3 16-22Sep	161	507	206	649	168	529	164	517	175	551	208	655	210	662
*Wk 4 23-29Sep	192	605	221	696	236	743	211	665	248	781	404	1273	245	772

OCTOBER 2002 Data highlighted in green are the daily averages for the overall site data set.

2002	MON		TUE		WED		THU		FRI		SAT		SUN	
	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People	Vehicles	People
*Wk 1 30-06Oct	208	655	235	740	247	778	248	781	222	699	201	634	209	658

AVERAGES	155	489	165	522	160	504	158	498	159	500	201	634	209	658
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Note: * These dates indicate school holidays.
 People estimates are based on vehicle numbers x 3.15, the average number of people in vehicles established from questionnaire, item # 8.
 Data that are highlighted are not included in the overall averages.

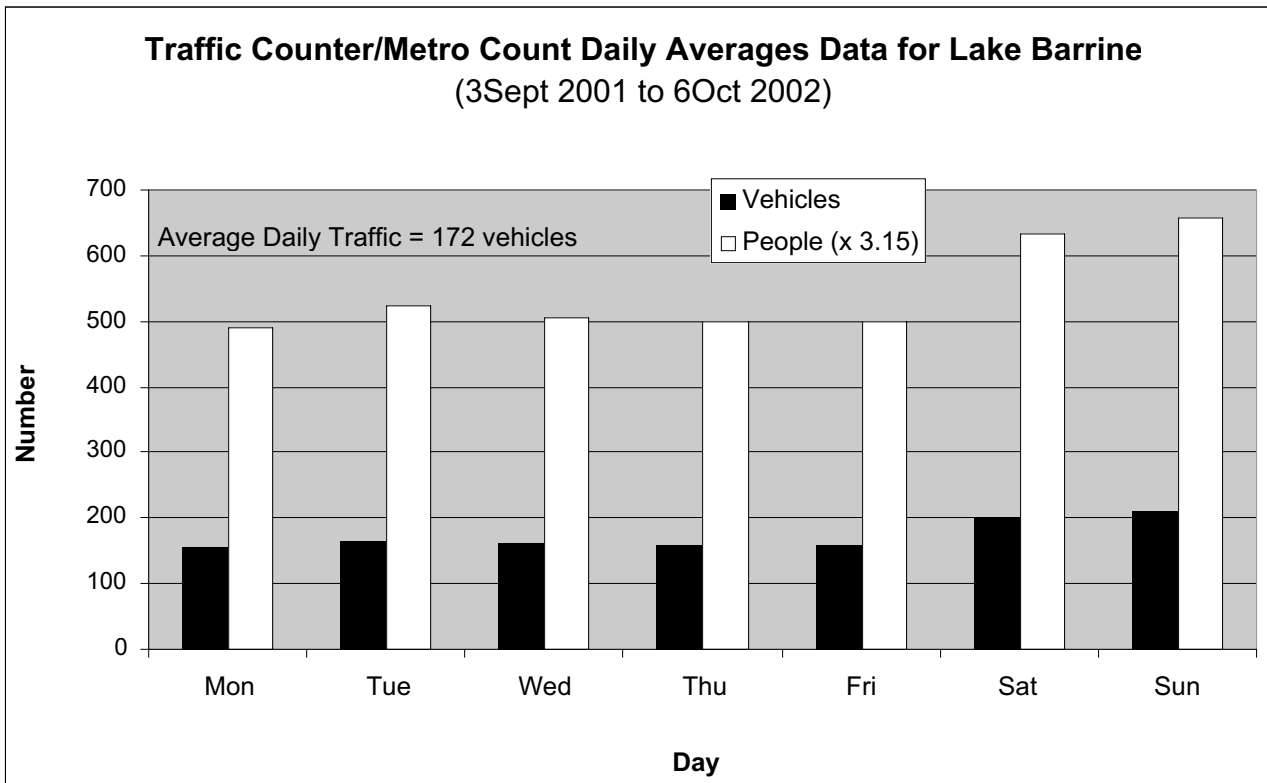


Figure 9: Average daily vehicle and visitor numbers for Lake Barrine.

Comparative Traffic Counter Data : Lake Barrine

(Source: Manidis Roberts 1993/1994 study, Bentrupperbäumer & Reser, 2000, and 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 per Manidis Roberts
- Visitor estimates for 2001-2002 period have been based on 3.15 people per vehicle as established by this study;
- Visitor estimates were highest in June 1998;
- Visitor estimates for this study period, 2001-2002, are lower compared to all previous years;
- Consistently, the monthly figures were highest in June, July and August.

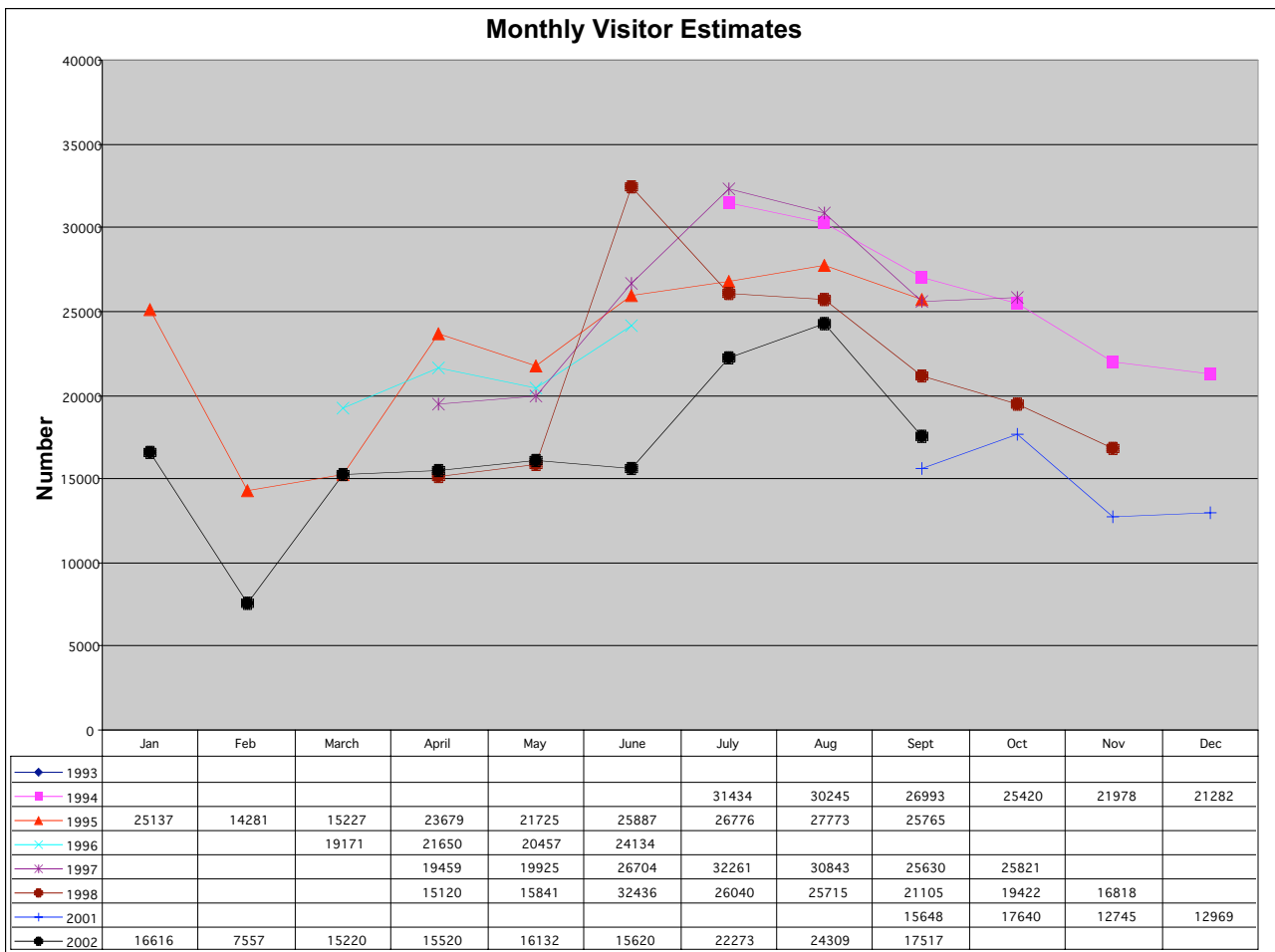


Figure 10: Monthly visitor estimates for Lake Barrine established from WTMA traffic counter data 1994 – 1997, Bentrupperbäumer 1998 study, and this study, 2001-2002. Data was unavailable for 1993.

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*

WHA Status The presentation of Lake Barrine as a Wet Tropics World Heritage Area site (WTWHA) is problematic in that approximately 62 percent of respondents were not aware that the area had any special significance, and only 38 percent of respondents appeared to be aware that this site was a part of the WTWHA (Section 1 Visitor Survey pg 34-35). This is especially noteworthy in that 84.7 percent of visitors surveyed were Australian, and 66.8 percent of these Australian visitors were local residents (Section 1 Visitor Survey pg 20-21), who would be expected to be knowledgeable about the status of this area. It is also noteworthy given that this is a site that has two signs identifying it as a site which provides Wet Tropics information, although both are at different locations along the main highway (Section 2 Site Inventory pg 50-51). However, there is not a sign that specifically identifies it as a World Heritage site. This information is incorporated in the interpretive material provided by the Wet Tropics Information centre. Despite this as evidenced by the results the majority of visitors remain unaware that Lake Barrine is a Wet Tropics World Heritage Area site.

Natural and Cultural Attributes A principal aspect of presentation of a WTWHA site is natural and cultural heritage interpretation. Lake Barrine has a comprehensive selection of indigenous and nonindigenous cultural heritage information and natural environment information, almost all of which is presented in the commercial setting (in the Wet Tropics Information centre), rather than the natural environment. While indigenous cultural heritage information did not receive as high a rating as the other information sources, it did receive a higher rating than most other sites in the WTWHA at which this information was presented (Section 1 Visitor Survey pg 30-31). The presence of indigenous cultural information plays a critical role in enhancing visitor, and in particular local visitor, awareness of this most important WTWHA attribute. Despite the presence of such information in the information centre, visitors expected to see cultural information on site (outside of the information centre), were disappointed not to see any, and would like to see this changed (Section 1 Visitor Survey pgs 38-39). All interpretive information located outside of the information centre presents the natural environment. This signage is located on the walking track to the Twin Kauris and presents those features of the vegetation unique to Lake Barrine (Section 2 Sign Inventory pgs 50-52).

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

Identity & Presence A related presentation issue is level of visitor and other user awareness of the environmental management agency responsible for management of the site. It is a concern that 64.6 percent of visitors did not know who the management agency responsible for Lake Barrine was (Section 1 Visitor Survey pg 34-35). This is noteworthy given that this site attracts many repeat visits from both local and domestic Australian visitors (Section 1 pg 22-23). Furthermore, there are a number of signs along the access road and car park which clearly identifies this as a National Park, and signage on the walking track to the twin kauris incorporates the QPWS logo (Section 2 Sign Inventory pg 52). From the responses given (Section 1 Visitor Survey pg 35), it would appear that this lack of awareness and/or confusion may be partially due to some of the land at Lake Barrine being privately owned.

Conservation & Protection Clearly visitors and other users are impressed with the overall management of the Lake Barrine site 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). The majority of visitors strongly agreed that the natural environment was interesting, appealing, in good condition and well managed. Despite this 56 percent of visitors agreed to some extent that they were concerned about the impacts of human activity on the natural environment at the site (Section 1 Visitor Survey pgs 26-27). The majority of visitors strongly agreed that the facilities and infrastructure at Lake Barrine were adequate, in good condition and well managed (Section 1 Visitor Survey pgs 32-33). It must be kept in mind however that the most frequently used facility at Lake Barrine was the restaurant / café, and it is likely that visitors were assessing the condition of the restaurant rather than the National Park facilities present.

Information *Sources and Signage*

Sources Presentation of the WTWHA and the decision to visit sites such as Lake Barrine is closely linked to and influenced by the way in which relevant information is accessed or sourced. Clearly the high local use of this site and the many repeat visitors would explain high dependence on prior knowledge and/or word of mouth of this user group for information about Lake Barrine (Section 1 Visitor Survey, pg 22-23). On the other hand, information about Lake Barrine is accessed by interstate and international tourists via maps, travel guides / books, information centres and tourist leaflets (Section 1 Visitor Survey pgs 22-23). Even though a considerable amount of information is available on the internet through both independent and management agency web pages, these survey results show that this information medium is poorly used.

Signage Another important presentation issue and management responsibility at sites such as Lake Barrine is the provision of signage that clearly identifies rules and regulations, safety issues, and directions. Here visitor advice and orientation signs are evident on the main and access roads, however visitor advice signs are minimal within the actual site (Section 2 Sign Inventory pg 50-52). In addition, visitor appraisal of various aspects of such signage was moderate (Section 1 Visitor Survey pgs 30-31), and their overall condition was found to be good (Section 2 Sign Inventory pg 50-52).

Structural Features *Layout and Design, Infrastructure and Facilities*

Layout and Design The current site layout and design at Lake Barrine is very much determined by the physical landscape and a clear wish to minimise further encroachment into the natural environment (Section 2 Site Inventory pg 56-57). Given these restrictions site legibility and functionality have been compromised. There is clearly a need for some redesign considerations and upgrading of facilities in order to mitigate use conflicts and further environmental degradation, all of which would not need to encroach on the natural environment.

Infrastructure and Facilities The infrastructure and facilities at Lake Barrine appear to not only provide for most of the visitor needs but in addition are highly regarded as indicated by direct and indirect item responses relating to visitor appraisal of the adequacy, appeal, condition and management of the built environment (Section 1 Visitor Survey pgs 32-33). However, these results must be interpreted with caution given that such appraisals may well be directed toward the commercial facilities as opposed to those provided by National Parks. All facilities present are reasonably well used (Section 1 Visitor Survey pgs 32-33). Visitor appraisal of the facilities in regards to enjoyment of the site is of particular interest. Many visitors indicated that the facilities at Lake Barrine enhanced their enjoyment of the site (Section 1 Visitor Survey pg 39), while others noted that aspects of the facilities

decreased their enjoyment of the site. This conflicting appraisal of the facilities might be best explained by the types of natural areas that different visitors to Lake Barrine preferred visiting (Section 1 Visitor Survey pg 35). While the majority of visitors preferred visiting areas that have fairly well to very well developed facilities, there was still a substantial proportion of visitors who preferred sites with limited facilities. This conflict in visitor appraisal of the built environment may also be explained by additional visitor comments on the survey (Section 1 Visitor Survey pgs 40-41), where the restaurant and accompanying facilities were described as too ‘bombastic’ for such a small lake. This may indicate that for some visitors to Lake Barrine there is a facility / infrastructure – natural environment conflict. Due to the high visitation level at this site, visitors also reported problems with the lack of parking space available (Section 1 Visitor Survey pgs 33 & 39). Parking was a major problem for most visitors causing both conflict and confusion.

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 prospects 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 Lake Barrine as separate but interlinked entities. The term opportunities along with the subheadings thus allow for a more direct linking of management considerations to specific visitor needs in terms of opportunities sought, available and utilised.

Recreational

Activity-based

Activity-based The activity-based recreational opportunities available at Lake Barrine are largely those of a National Park limited day use site, and include picnicing, short and long walking tracks, and of a commercial venue including a restaurant / café, and a boat cruise around the lake. 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 Lake Barrine include nature watching, relaxation, and contemplation, 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. Seventy-eight percent of visitors to Lake Barrine agreed to some extent that visiting the site was a special experience, with many visitors reporting that the peace and serenity of the site enhanced their enjoyment of the site.

Educational

Knowledge-based Opportunities

Knowledge-based Knowledge-based opportunities at Lake Barrine are mostly presented in the information centre. While indigenous information is presented in the commercial environment, the natural and ecological information presented on the site is limited in terms of frequency and content (Section 2 Sign Inventory pgs 50-52). The content of the information is limited to the vegetation that is unique to Lake Barrine. The lack of indigenous cultural and ecological information is evident in visitor requests for more information on these topics (Section 1 Visitor Survey pgs 38-39).

Specific Problems and Issues

Issues *Crowding and Overuse*

Lake Barrine does not appear to present any substantial problems or issues. It is a reasonably well-managed and maintained site despite the relatively high volume of visitation and use within such a small area (Section 3 Traffic Information). Nevertheless, there are some issues related to visitor behaviour and use of the site that require consideration.

Issues *Crowding and Overuse*

Crowding and Overuse Interestingly, visitor appraisal of crowding at the site was moderately low. This is particularly noteworthy in that three of the four days of data collection, the busiest periods experienced visitor numbers of 160 or above at one time (Section 3 Vehicle and Visitor Monitoring). In addition, visitors reported that crowding in the car park was an issue (Section 1 Visitor Survey pgs 33 & 39). This aspect of crowding is further amplified in field staff observations of visitors venting their frustration at the congestion by beeping their horn.

References

- Atherton Tableland Promotion Bureau (n.d.). *Discover: Online Magazine. Visitors Guide to the Atherton Tablelands*. Retrieved November 21, 2002 from: <http://www.discover-mag.info/5Waterfalls.htm>
- Bentrupperbäumer, J. M. & Reser, J. P (2000) *Impacts of Visitation and Use: Psychosocial and Biophysical Windows on Visitation and Use in the Wet Tropics World Heritage Area*. Cooperative Research Centre for Tropical Rainforest Ecology and Management: Cairns (pp 285).
- Bentrupperbäumer, J. M. & Reser, J (2002a) *Measuring and Monitoring the Impacts of Visitation and Use in the Wet Tropics World Heritage Area: A Site Based Bioregional Perspective*. Rainforest Cooperative Research Centre: Cairns.
- Department of Natural Resources and Mining (DNRM). (2001). Indigenous Report. Barron Water Resource Plan. Retrieved November 21, 2002 from: http://www.nrm.qld.gov.au/wrp/pdf/barron/barron_indig.pdf
- Huxley, M., & compiled with the Elders of the Ngadonji. (1998). *Ngadonji History: online version of A Short History of the Ngadonji*. Retrieved November 21, 2002 from: <http://www.koori.usyd.edu.au/ngadonji/History/history0.html>
- Lake Barrine website. (n.d.). *Lake Barrine Rainforest Cruise and Tea house*. Retrieved November 21, 2002 from: <http://www.lakebarrine.com/>
- Manidis Roberts Consultants (1993) *Data Summary 1993 Wet Season Visitor Use Survey Wet Tropics World Heritage Area*. Report to Wet Tropics Management Agency: Cairns.
- Manidis Roberts Consultants (1994) *Data Summary 1994 Visitor Use Survey Wet Tropics World Heritage Area*. Report to Wet Tropics Management Agency: Cairns.
- Queensland Department of Environment and Heritage & Department of Primary Industries. (1993). *Shades of Green. Exploring Queensland's Rainforests*. Queensland Government Document: Brisbane.
- Queensland Government: Environmental Protection Agency. (2001). *Master Plan for Queensland's Parks System*. Queensland Government: Brisbane.
- Ritchie, R. (1995) *North Queensland Wet Tropics*. Rainforest Publishing: Millers Point.
- SitePlan (1993) *Wet Tropics Visitor Facilities Audit*. Report to Wet Tropics Management Agency: Cairns.
- Thomas, T. (1994). *50 Walks in North Queensland*. Hill of Content: Melbourne.
- Wilson, R. (2002) *Wet Tropics World Heritage Area Visitor Monitoring System*. Rainforest Cooperative Research Centre: Cairns. *In preparation*.
- WTMA (1994 -1997) *Traffic Counter Program Data Sets*. Excel data files provided by the Wet Tropics Management Authority: Cairns.
- WTMA (1996). *Wet Tropics in Profile: A Reference Guide to the Wet Tropics of Queensland World Heritage Area*. Wet Tropics Management Authority: Cairns.
- WTMA (1997) *Protection through Partnerships: Policies for the Implementation of the Wet Tropics Plan*. Wet Tropics Management Authority: Cairns.
- WTMA (1999). *Wet Tropics World Heritage Area*. Retrieved November 21, 2002 from: <http://www.wettropics.gov.au/>
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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.

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

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.

Bentrupperbäumer, J. M. & Reser, J.P. (2002a) *Measuring and Monitoring the Impacts of Visitation and Use in the Wet Tropics World Heritage Area: A Site Based Bioregional Perspective*. Rainforest Cooperative Research Centre: Cairns.

- 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.
