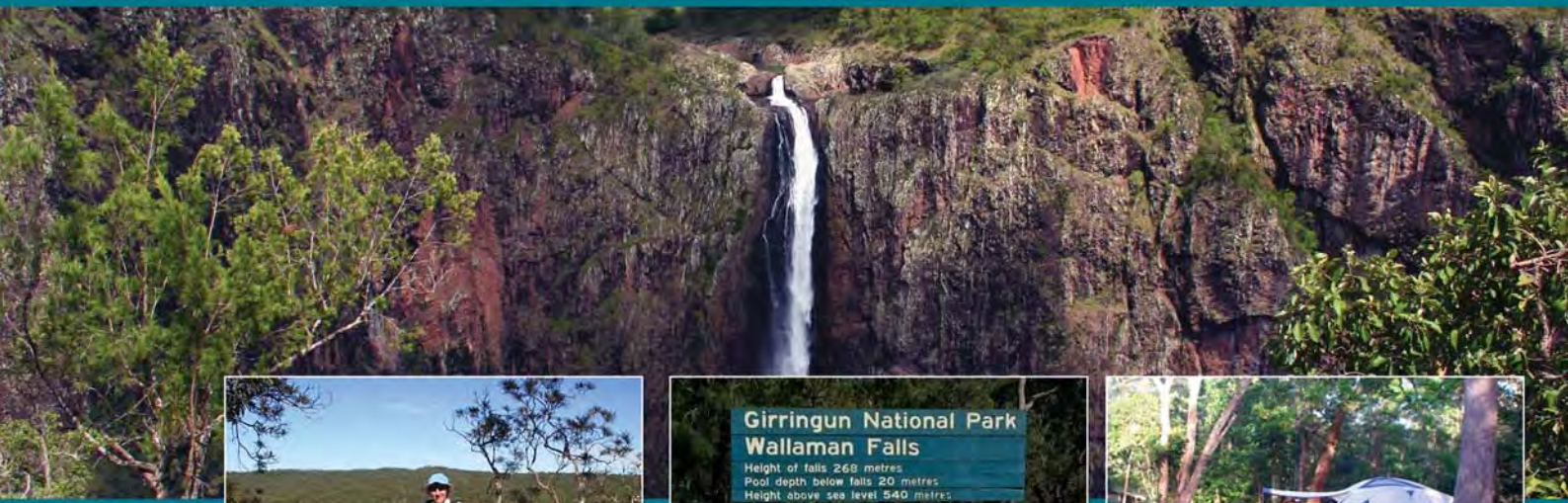


Sustainable Nature Based Tourism: Planning and Management

Report on Visitation and Use at Wallaman Falls, Far North Queensland, 2009/2010



Julie Carmody and Bruce Prideaux



Australian Government
Department of the Environment,
Water, Heritage and the Arts



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Wallaman Falls, Far North Queensland, 2009/2010

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Australian Government
**Department of the Environment,
Water, Heritage and the Arts**

Supported by the Australian Government's
Marine and Tropical Sciences Research Facility
Project 4.9.2 Sustainable Nature Based Tourism: Planning and Management

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ISBN 978-1-921359-93-4

This report should be cited as:

Carmody, J. and Prideaux, B. (2011) *Sustainable Nature Based Tourism: Planning and Management. Report on Visitation and Use at Wallaman Falls, Far North Queensland, 2009/2010*. Report to the Marine and Tropical Sciences Research Facility. Published by the Reef and Rainforest Research Centre Limited, Cairns (61pp.).

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March 2011

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Acronyms and Abbreviations

DERM	Queensland Department of Environment and Resource Management
MTSRF	Marine and Tropical Sciences Research Facility
N	Entire survey sample
n	Portion of survey sample
QPWS	Queensland Parks and Wildlife Service
WTMA	Wet Tropics Management Authority
WTWHA	Wet Tropics World Heritage Area

Acknowledgements

Funding for this research was provided by the Australian Government's Marine and Tropical Sciences Research Facility (MTRSF) and the Wet Tropics Management Authority.

We would like to acknowledge and thank Fay Falco-Mammone for her assistance in the distribution and collection of surveys, and Debbie Cobden for assistance with data input.

We would also like to acknowledge the assistance of staff of the Wet Tropics Management Authority, particularly Max Chappell, and Andrew Millerd, Ross Domin and Matt Wallace of the Queensland Department of Environment and Resource Management.

Key Findings

The following key findings are based on a visitor survey (N = 135) undertaken at Wallaman Falls during April 2010. Where findings are reported as a mean, 1 represents the lowest level of agreement by survey respondents, while 6 represents the highest level of agreement.

Respondent Profile

- The sample mainly consisted of European visitors (34.1%), Far North Queensland residents (25.7%) and visitors from other Queensland (18.2%).
- The average age of survey respondents was 37.6 years; however the largest age group were those aged 20-29 years (35.6%).

Travel Patterns

- Visitors to Wallaman Falls travelled mostly from Ingham (37.8%) and Townsville (13.5%).
- After Wallaman Falls, visitors intended to travel to Townsville (21.2%), Cairns (12.9%) and Ingham (11.4%).
- More respondents visited Wallaman Falls on their way south (n = 65) than on their way north (n = 54).
- Visitors learnt about the site by word-of-mouth (40.3%), a travel guide book (30.6%) or a previous visit (21.3%).

Reasons for Visiting Wallaman Falls

- The main reason cited by respondents for visiting Wallaman Falls was to see the natural features and scenery (mean = 5.40).

Perceptions of the Natural Environment

- The natural environment was considered interesting (mean = 5.57), appealing (5.48), in good condition (5.44) and well-managed (mean = 5.26).

Perceptions and Use of the Site Facilities

- The viewing platform (87.3%), walking track (74.6%) and toilet (70.1%) were the most used facilities at Wallaman Falls.
- The site facilities were considered to be in good condition (mean = 5.19), well-managed (5.15) and adequate (5.01).

Perceptions of Signage

- The signage on site was considered to be easy to find (mean = 5.42) and rules and safety information easy to understand (5.37).

Satisfaction with the Visitor Experience

- Wallaman Falls itself enhanced the visitor experience.
- Crowding and other people at the site did not interfere with the visitor experience.

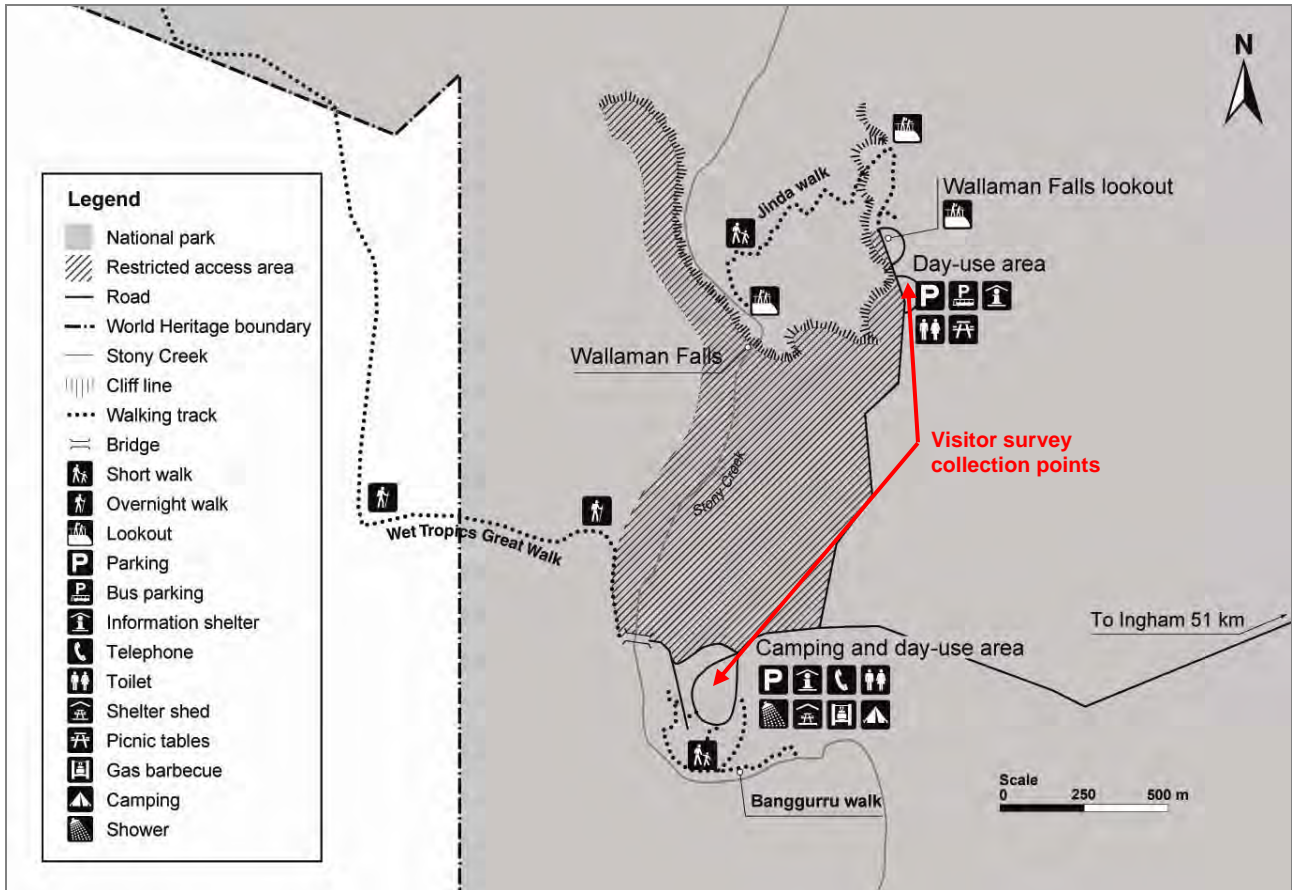


Figure i: Map of the Wallaman Falls camping and day use areas, located within Girringun National Park, with visitor survey collection points highlighted. Map courtesy of Queensland Parks and Wildlife Service, Department of Environment and Resource Management.



View of Wallaman Falls from lookout day use area (Photo: Fay Falco-Mammone)

1. Introduction

This report is one of a series of ten that examine visitor activity at sites within Wet Tropics rainforests. The aim of the research was to provide a snapshot of visitor activity to inform management on how sites are used and investigate visitors' views on site management. Visitor data was collected using a self-completed visitor survey. Collectively the series of reports will provide an overall understanding of how visitors use the rainforest and provide managers with feedback that can be used for site management and future planning.

Responsibility for the management of the Wet Tropics rainforests is shared by the Wet Tropics Management Authority (WTMA) and the Queensland Department of Environment and Resource Management (DERM). The WTMA was established after listing of the Wet Tropics as a World Heritage site and is responsible for the planning of visitor sites across the Wet Tropics World Heritage Area (WTWHA). The Queensland Parks and Wildlife Service (QPWS), an agency of the DERM, has responsibility for the day to day management of site infrastructure including toilets, car parking, signage, viewing lookouts, boardwalks, walking trails and other recreational facilities. The Wet Tropics has a large number of visitor sites, some of which have high rates of visitation. A number of sites have relatively low visitation rates, but all offer unique nature-based visitor experiences.

1.1 Site Location and Description

Wallaman Falls is located 51 kilometres west of Ingham within Girringun National Park. The traditional owners of the land are the Warrgamaygan Aboriginal people. Girringun National Park (formerly Lumholtz National Park) was gazetted in 2003 and covers an area of 204,280 hectares.

The site has two day use visitor areas, one of which incorporates a campground. A lookout at the top of the falls provides a spectacular view of Wallaman Falls. Visitors also have the option of walking to the base of the falls via the strenuous two kilometre return 'Jinda Walk'. Picnic tables, toilets and interpretative signage are provided at the day use lookout site. A second day use area that also incorporates a campground is located approximately one kilometre from the lookout site. The campground has a carrying capacity of 80 persons and a self-registration booth. Camping permits may also be obtained from the DERM website. Site facilities include barbecues, toilets, a cold water shower, public telephone and water taps. Interpretative signage about the short walk and the Wet Tropics Great Walk is provided at the day use area carpark adjacent to the entrance to a short 800 metre return walk (Banggurruru) to the rock pools where swimming is permitted. A map of Wallaman Falls showing the survey site is provided at Figure i.

1.2 Previous Research

Previous research into visitor use of the Wallaman Falls site was undertaken by Manadis Roberts Consultants, who conducted visitor surveys at 56 sites within the WTWHA during 1993 and 1994. The research approach included traffic counts, site observations and visitor interviews. Three versions of a visitor survey were distributed – one for independent travelers, one for those travelling with a commercial operator and one left at sites as a self-registration survey.

In 1993, an estimated 30,944 persons visited Wallaman Falls, travelling to the site in an estimated 9,329 vehicles (Manadis Roberts, 1994). Based on 106 interviews carried out at the site, 38.9% of visitors travelled as a family while 24.7% travelled with family and friends (24.7%). The average length of time at the site for day visitors was 2.2 hours. Almost half of all respondents (46.7%) camped overnight. Eighty percent of respondents were on their first

visit to Wallaman Falls, with 67.5% having stayed in Ingham and 20% in Townsville the previous night. Most visitors were residents of North Queensland (75.9%). Reasons given for visiting Wallaman Falls included being close to nature, a day out with family and friends, experiencing tranquility and physical rest. The main activities undertaken at the site were relaxing, picnicking, scenic viewing and camping. Poorly maintained roads were mentioned by 34.4% of respondents as having negatively affected their enjoyment of the site. However, overall satisfaction was high (81.8%).

1.3 Traffic Counter Data

DERM maintains a traffic counter at the Wallaman Falls visitor site. Figure 1 illustrates traffic counter data collected between April 2008 and November 2009. The average daily visitation during weekdays was 66.5 vehicles while the average on weekends was 95.9 vehicles. A total of 44,674 vehicles were counted during the monitoring period. The five peak visitation periods were July 2009 (5,031 vehicles), August 2009 (4,170), June 2009 (3,742), May 2009 (3,515) and September (2,859).

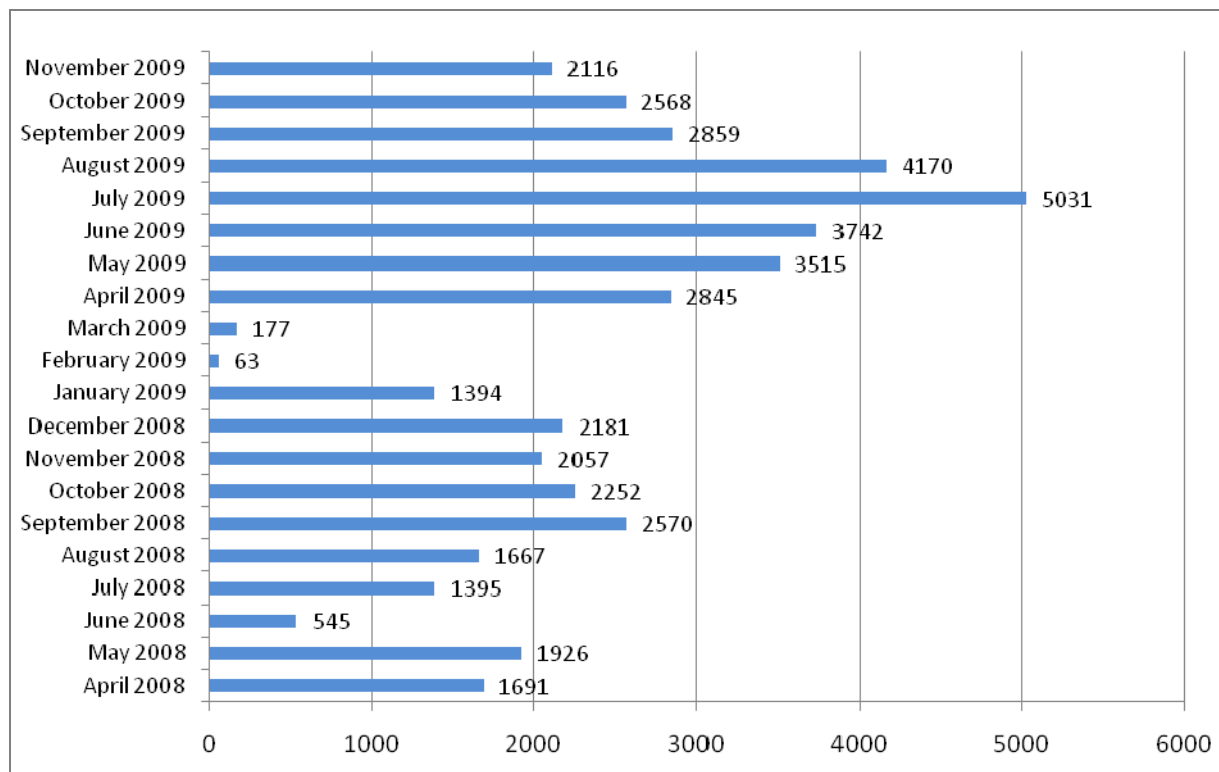


Figure 1: Counts of vehicular traffic recorded at Wallaman Falls between April 2008 and November 2009. Data courtesy of Queensland Parks and Wildlife Service, DERM.

Figure 2 illustrates the average daily vehicle count for each month during 2009. Data for December and most of February and March were unavailable due to technical problems. The pattern of visitation to the site is consistent with patterns found elsewhere in North Queensland and appears to be largely governed by seasonal factors. The busiest month at the site was July with an average of 162.3 vehicles a day, while the quietest month was January with an average of just 45 vehicles per day.

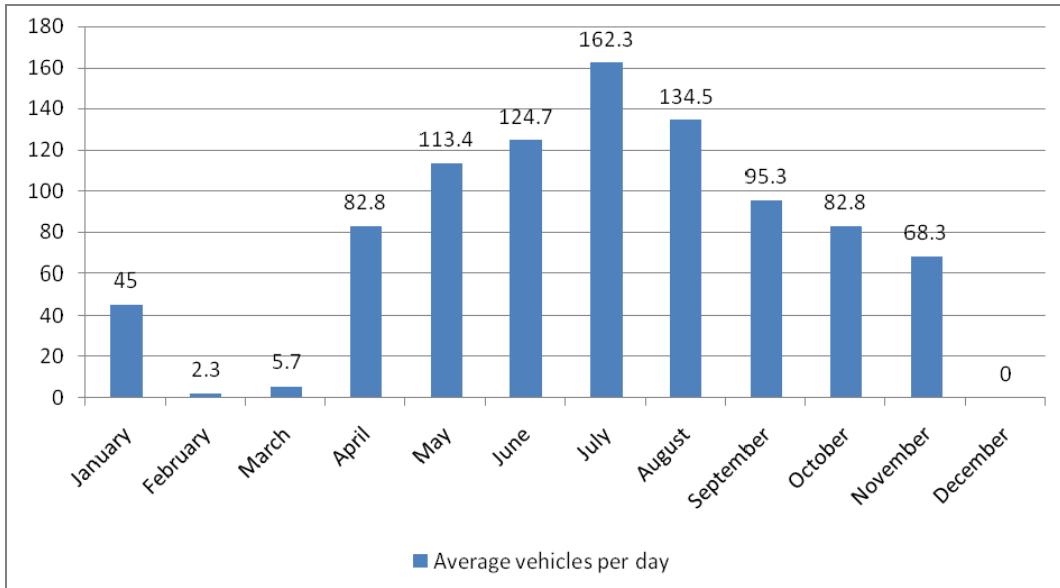


Figure 2: Average counts of vehicles accessing Wallaman Falls per day during 2009. Data courtesy of Queensland Parks and Wildlife Service, DERM.

2. Methodology

The aims of this report are to:

- Investigate visitor activities undertaken at the Wallaman Falls visitor site; and
- Identify visitors' views about aspects of the site including its management.

Specific objectives of the research were to:

- Provide a snapshot profile of visitors to the Wallaman Falls site;
- Understand visitors' perceptions of the management of the site;
- Understand visitors' perceptions of the natural environment at the site;
- Gain an understanding of visitors' travel patterns within the Wet Tropics region; and
- Assess the suitability of the interpretative information provided at the site.

A convenience sampling technique was used and data was analysed with the SPSS v17 statistical package.

This research complements earlier research (Carmody and Prideaux, 2008) that investigated how local residents used the Wet Tropics and their views on its management.

2.1 Survey Instrument

To collect data on a range of issues related to visitor expectations and experiences, a survey (Appendix 1) was developed in conjunction with officers from the WTMA. The survey instrument was based on a previous survey used in 2001/2002 which enabled some general comparisons to be made with earlier research. The self-completed survey contained 29 closed and open-ended questions and provided space for respondents to write additional comments. Open-ended questions were used because they can test specificity of knowledge more effectively (as shown by Whitmarsh, 2009), provide richer responses (Altinay and Paraskevas, 2008) and can minimise social desirability bias (Budeanu, 2007). Survey questions were grouped into eight sections commencing with demographic data. Table 1 outlines the components of the survey. Survey staff recorded site details including location, date, time of collection and weather conditions on the front cover of the survey instrument.

Table 1: Components of the Wallaman Falls visitor survey.

Section A	Background information	Place of residence, occupation, education, age, gender
Section B	Travel and transport	Organised tour or free and independent traveller, travel party, mode of transport, pre- and post-visit of site, experience of protected natural areas
Section C	Reasons for visiting	Motivations, activities, time spent at site, willingness to pay
Section D	Natural environment	Perceptions of the natural environment
Section E	Site facilities	Use of site facilities, expectations of facilities, perceptions of facilities, ranger presence
Section F	Information	Prior information search, perceptions of on-site information, additional information required
Section G	Visitor experience	Aspects of visit that enhanced and detracted from experience, perceptions of crowding
Additional comments		Open-ended to allow for any comments and feedback

2.2 Survey Collection

Surveys were collected over a four day period in April 2010 between 7:00 am and 9:00 am at the Wallaman Falls campground and between 9:00 am and 5:00 pm at the Wallaman Falls lookout day use area (Figure 3). Visitation was at its highest between 11:00 am and 4:00 pm.

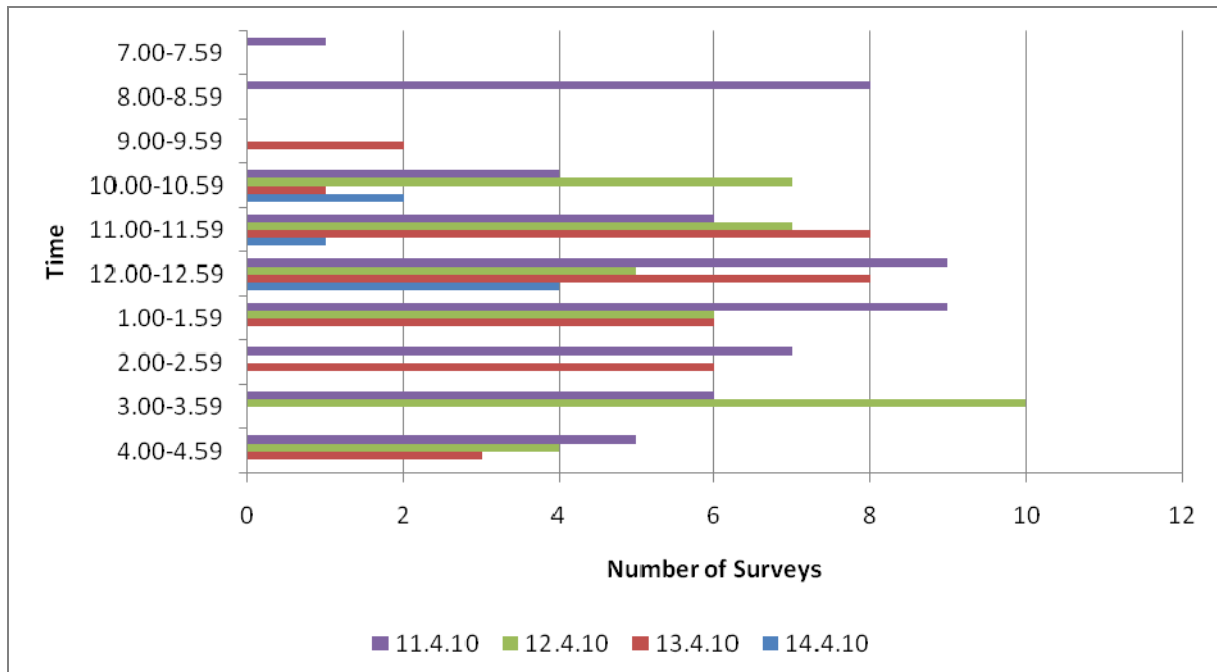


Figure 3: Surveys collected at Wallaman Falls by date and time (N = 135).

Two experienced research assistants were stationed at the carpark near the entrance to the lookout and Jinda Walk. Using a convenience sampling technique, visitors returning from the lookout were approached and asked to complete the survey. Researchers explained the purpose of the survey and the approximate time required for completion. A postcard or WTMA cassowary sticker was offered as a token of appreciation to those returning the survey. Table 2 outlines the survey schedule for the Wallaman Falls site. A total of 135 surveys were collected from both domestic and international visitors. Most surveys were collected at the Wallaman Falls lookout day use site (n = 125), with ten surveys collected at the campground. The weather was predominantly sunny during the survey period.

Table 2: Wallaman Falls visitor survey collection times and details (N = 135).

Date	Day	Weather	Visitor Frequency	Percent of Total
11 April 2010	Sunday	Sunny	55	40.7
12 April 2010	Monday	Sunny	39	28.9
13 April 2010	Tuesday	Sunny and overcast	34	25.2
14 April 2010	Wednesday	Overcast	7	5.2
Total			135	100.0

2.3 Non-response and Observations

Refusals to complete the survey were recorded on-site and are presented in Table 3. Of the 165 people approached to complete the survey, 18.2% refused (n = 30). Reasons for not completing the survey included not having enough time to do so (9.1%), a language barrier (6.1%) or that visitors were not interested (3.0%). Those who did not complete the survey because of a language difficulty were mostly German speaking.

Table 3: Reasons given for not participating in the Wallaman Falls visitor survey (n = 30).

Reason for not participating in survey	Frequency (n)	Percentage of total number of people approached (n = 165)
No time	15	9.1
Language barrier	10	6.1
Not interested	5	3.0
Non-Response	30	18.2

A limited number of observations were made of visitor behaviour during the survey period. On two occasions, visitors left a dog in their vehicle while they viewed the waterfall, and another walked a dog around the site. On another occasion, a visitor took a native flowering plant. Cattle were observed to have damaged the landscape at the entrance to the Wallaman Falls lookout access road and near the day use area toilet facilities. The public telephone was inoperable for the entire survey period.

2.4 Limitations

There were some limitations associated with the research that should be considered prior to generalising the results:

- First, the survey was conducted using a convenience sampling approach and may not be representative of all visitor segments using the site;
- Second, the sample size was limited by time and budget constraints;
- Third, the survey was only available in English, resulting in a possible under-reporting of some nationalities visiting the site;
- Fourth, there was potential for social desirability bias occurring where respondents offered answers that are seen to be desirable or acceptable but may not reflect their true opinions. In most cases it is difficult to determine the level of social desirability for any given question; and
- Finally, while commercial tour operators hold permits for Wallaman Falls and include the site in their itineraries, no organised tour group members were interviewed.

Understanding the Results

Both closed questions with specific response options and open-ended questions were used in the visitor survey. The advantage of closed questions is that it allows the researcher to investigate specific issues of interest while open-ended questions provide a good indication of top-of-mind responses and concerns of interviewees. Closed response questions generally asked respondents to use a six-point Likert scale. In the following discussion, the results of closed questions are reported as means and as the percentage breakdown by the six items on the Likert scale. Means are useful for ranking in order of importance while percentage breakdown gives a clearer indication of the strength of agreement or disagreement with a particular given statement. The following discussion should be read with these considerations in mind. It should also be noted that not every question was answered by all respondents, thus the 'n' values of tables and figures may vary. The 'n' value reports valid responses. The 'N' value reports the entire sample.

3. Findings

The results presented in this report are from the Wet Tropics Visitor Site Level Survey distributed at Wallaman Falls in April 2010.

3.1 Respondent Profile

More males (60.0%) than females (40.0%) completed the visitor survey (N = 135).

Place of Residence

Respondents' places of residence are provided in Table 4. Over half of all respondents were domestic (57.6%). Two-thirds of the international respondents (42.4%) were from Europe with most being German, French or Danish. The largest groups of domestic visitors were from 'Other' Queensland (25.7%) and far north Queensland (18.2%). Only a small number of domestic respondents were from interstate (13.7%).

Table 4: Origin of Wallaman Creek survey respondents (n = 132).

	Frequency (n)	Percent (%)
DOMESTIC		
Other Queensland	34	25.7
Far North Queensland	24	18.2
New South Wales	9	6.8
Victoria	5	3.9
Western Australia	4	3.0
Domestic Total	76	57.6
INTERNATIONAL		
Europe	45	34.1
England/ UK	11	8.3
International Total	56	42.4
Total Domestic and International	132	100.0

Occupation

The occupations of respondents are provided in Figure 4. The largest occupational group was professionals (20.0%), followed by retirees/semi-retirees (14.1%) and students (14.1%). More international students (12.6%) than their domestic counterparts (1.5%) completed the survey.

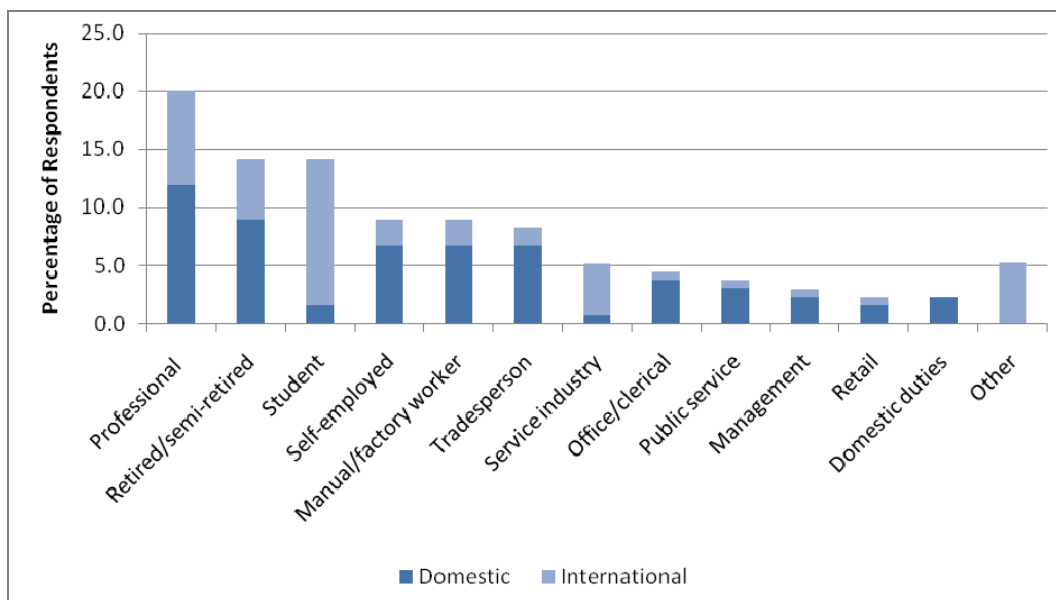


Figure 4: Occupations of Wallaman Falls survey respondents (N = 135).

Age

Figure 5 compares the respondents' ages and places of origin. Respondents ranged in age from 16 to 79 years with an average age of 37 years. Those aged 20-29 years (35.6%) were the largest group overall followed by those aged 30-39 years (15.5%). The 20-29 year age group and less than 20 years group were significantly more likely to consist of international visitors. Those aged 70 years or more (3.7%) were all of domestic origin.

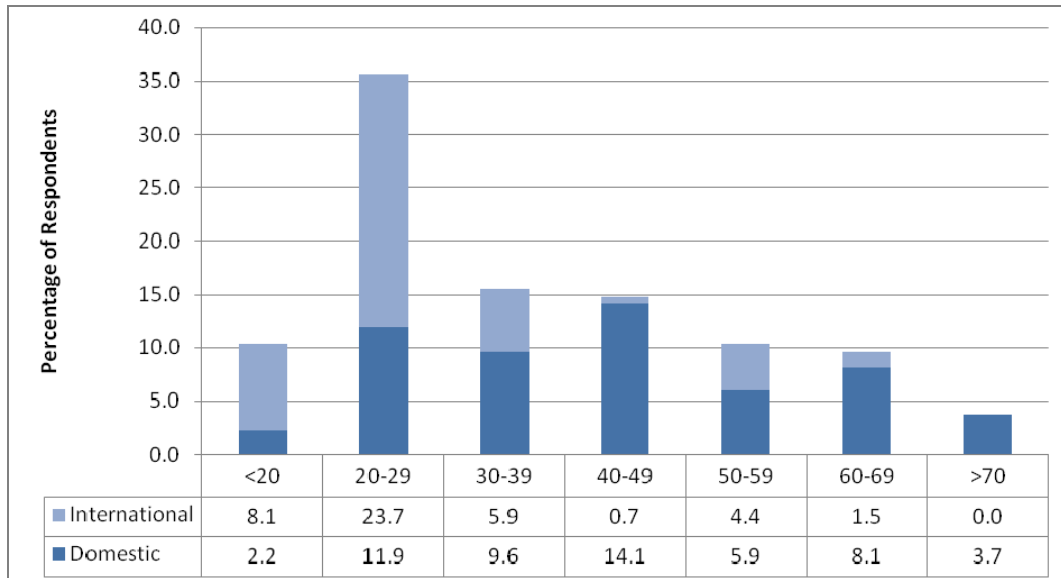


Figure 5: Age groups of Wallaman Falls survey respondents (N = 135).

Education

Figure 6 highlights survey respondents' education levels, where Tertiary A is defined as technical or further education, and Tertiary B is defined as a university qualification. For the entire sample, the largest group of respondents indicated having a Tertiary B education (38.8%) followed by those with a secondary education (30.6%).

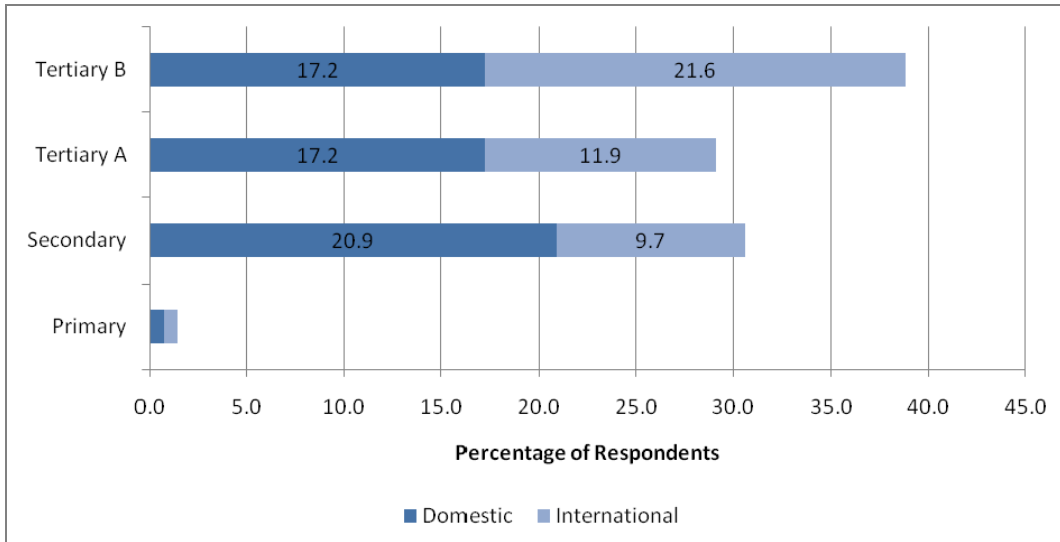


Figure 6: Levels of education attained by Wallaman Falls survey respondents (n = 134).

A cross-tabulation analysis of respondents' age and education is provided in Table 5. The largest group of respondents had a Tertiary B education and was aged 20-29 years (19.4%). Overall, more international respondents (21.6%) than domestic respondents (17.2%) held a Tertiary B education.

Table 5: Respondents' age and education (n = 134).

Age Group	Primary (%)	Secondary (%)	Tertiary A (%)	Tertiary B (%)
< 20 years	0.7	6.0	2.2	1.5
20-29 years	-	6.7	9.7	19.4
30-39 years	-	2.2	6.0	7.5
40-49 years	-	6.7	4.5	3.7
50-59 years	-	2.2	3.7	4.5
60-69 years	-	4.5	2.2	2.2
> 70 years	0.7	2.2	0.7	-
Total Respondents (n = 94)	1.5% (n = 2)	30.6% (n = 41)	29.1% (n = 39)	38.8% (n = 52)
Domestic	1.2% (n = 1)	20.9% (n = 28)	17.2% (n = 23)	17.2% (n = 23)
International	1.2% (n = 1)	9.7% (n = 13)	11.9% (n = 16)	21.6% (n = 29)

Travel Party and Mode of Transport

Sixty-six percent of respondents reported travelling to Wallaman Falls in private vehicles. The remainder travelled in a hire vehicle (33.4%). As indicated in Figure 7, hire vehicles were more likely to be used by international survey respondents (25.8%).

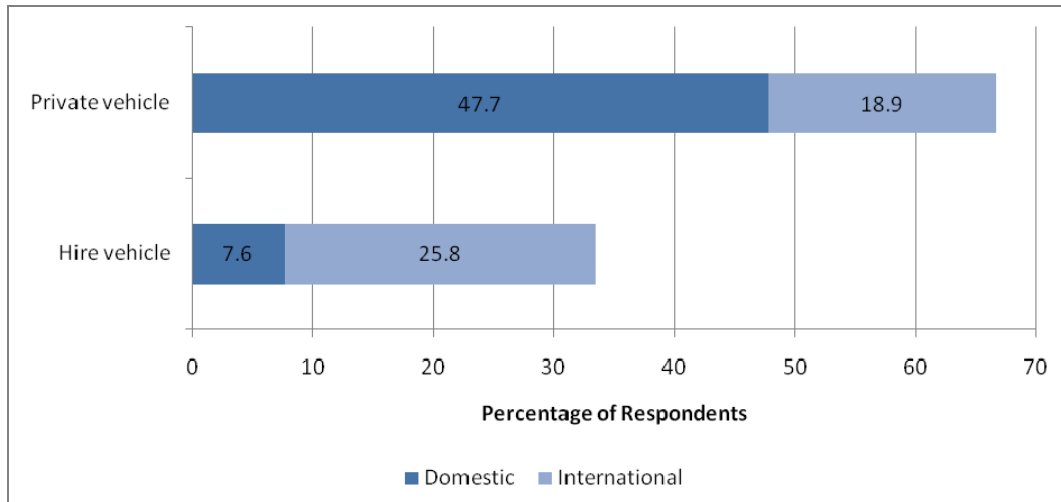


Figure 7: Modes of transport used by survey respondents to travel to Wallaman Falls (n = 132).

Table 6 reports on travel party composition. Most visitors were travelling as a couple of two adults with no children (62 respondents) followed by a group of three adults (24 respondents) and groups of four adults (17 respondents). Only 21 respondents indicated they were travelling with children. The average number of adults per vehicle was 2.47 with a standard deviation of 0.95 persons.

Table 6: Composition of visitor travel parties to Wallaman Falls (N = 135).

	1 adult	2 adults	3 adults	4 adults	5 adults
0 children	7	62	24	17	5
1 child	4	8	-	-	-
2 children	-	6	-	-	-
3 children	-	1	-	1	-
Adults per vehicle 2.47 ± SD 0.95 (range 1-5)					
Children per vehicle 0.22 ± SD 0.59 (range 0-3)					

Organised Tour Visitors

Although permits to access Wallaman Falls are held by commercial tour operators, no organised tours visited the sites during the survey period. The entire sample consisted of free and independent travelers.

Travel Flow

Respondents were asked about their travel patterns on the day of the survey, including where they had been and where they intended to go after leaving the site. Results are outlined in Tables 7 and 8. More than one-third of all respondents had travelled from Ingham (37.8%), followed by Townsville (13.5%). A small number of respondents had come from Jourama Falls (5.4%). Twenty-six percent of respondents had travelled from towns and attractions north of Wallaman Falls compared to 24.3% of respondents who had travelled from the south.

Table 7: Visitors' reported previous stop before arriving at Wallaman Falls (n = 111).

	Frequency (n)	Percent (%)
Towns north of Wallaman Falls		
Ingham	42	37.8
Cairns	4	3.6
Tully	4	3.6
Lucinda	3	2.7
Cardwell	3	2.7
Mission Beach	3	2.7
Port Hinchinbrook	2	1.8
Dunk Island	2	1.8
Halifax	1	0.9
Cooktown	1	0.9
Towns south of Wallaman Falls		
Townsville	15	13.5
Paluma	8	7.2
Whitsunday Islands	1	0.9
Natural Attractions		
Jourama Falls	6	5.4
Wallaman Falls campground	5	4.5
Big Crystal Creek	3	2.7
Other Attractions		
Nowhere/ first stop	8	7.2
Total	111	100.0

As outlined in Table 8, after leaving Wallaman Falls respondents were intending to travel to Townsville (21.2%), Ingham (17.4%), Cairns (12.9%) and home (10.6%). Slightly more respondents were heading to towns north (n = 54) of Wallaman Falls rather than south (n = 48).

Table 8: Intention of survey respondents to visit other places within the region after Wallaman Falls (n = 132).

	Frequency (n)	Percent (%)
Towns north of Wallaman Falls		
Ingham	23	17.4
Cairns	17	12.9
Mission Beach	10	7.6
Tully	3	2.3
Innisfail	2	1.5
Babinda	2	1.5
Atherton	2	1.5
Port Douglas	1	0.8
Yungaburra	1	0.8
Kuranda	1	0.8
Towns south of Wallaman Falls		
Townsville	28	21.2
Whitsundays	5	3.8
Paluma	4	3.0
Mackay	4	3.0
Airlie Beach	3	2.3
Hidden Valley	2	1.5
Magnetic Island	1	0.8
Bowen	1	0.8
Natural Attractions		
Jourama Falls	2	1.5
Beach	1	0.8
Wallaman Falls campground	1	0.8
Other Attractions		
Home	14	10.6
Don't know	2	1.5
South	2	1.5
Total	132	100.0

Visits to Protected Natural Areas

Respondents were asked about the frequency of their visits to protected natural areas to gauge their experiences in natural areas generally. Figure 8 indicates that 44.8% of respondents visit natural areas more than five times per year while 35.2% visit between two and five times per year. International visitors were more likely to visit protected natural areas more than five times per year whereas domestic visitors were more likely to visit 2-5 times per year.

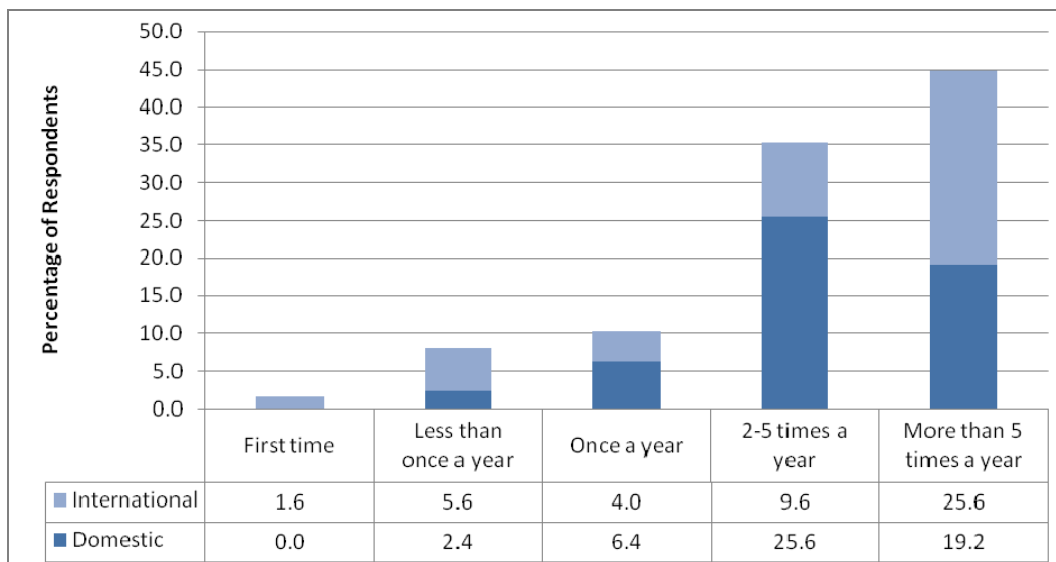


Figure 8: Survey respondents' frequency of visitation to protected natural areas (n = 125).

Reasons for Visiting Wallaman Falls

Respondents were asked to respond to a series of questions about their motivations for visiting Wallaman Falls. A six-point Likert scale of 1 (being 'not important') to 6 ('very important') was used. As shown in Table 9 the most important reasons for visiting the site were to see the natural features and scenery (mean = 5.40) and to be close to/ experience nature (4.96).

Domestic visitors were motivated by the opportunity to experience tranquility (mean = 4.76), to rest and relax (4.49), for outdoor exercise (4.30) and because it is a National Park (4.01). In comparison, international visitors were motivated to see the natural features and scenery (mean = 5.41) and learn about the native animals and plants (3.72) more than domestic respondents.

Table 9: Comparative domestic and international visitors' motivations for visiting Wallaman Falls.

Reasons for visiting Wallaman Falls	n	Overall Mean	Domestic visitors (mean)	International visitors (mean)
See natural features and scenery	131	5.40	5.39	5.41
Be close to/ experience nature	132	4.96	5.04	4.87
Experience tranquillity	128	4.50	4.76	4.19
Rest and relax	132	4.17	4.49	3.78
Outdoor exercise	131	3.93	4.30	3.50
Because it is a National Park	131	3.89	4.01	3.73
Opportunities for short walks	130	3.82	3.99	3.61
Socialise with family or friends	130	3.71	3.96	3.41
Learn about native animals and plants	131	3.67	3.63	3.72
Because it is a World Heritage Area	128	3.54	3.57	3.50
Opportunities for long walks	127	3.06	3.06	3.07
Learn about Aboriginal culture	127	2.84	2.64	3.07

The results outlined in Table 10 show the level of importance ascribed to each motive on a scale from 'not important' to 'very important'. Almost all respondents (94.7%) were motivated by the area's natural features and scenery. Opportunities for long walks were not considered important by 59.8% of respondents. The location of the site within a National Park and its World Heritage listing were moderately important.

Other reasons for visiting Wallaman Falls as indicated by twelve respondents included the rainforest (seven responses), photography (two responses), camping in a beautiful surrounding (two responses) and for the unique views (one response).

Table 10: Survey respondents' most cited reasons for visiting Wallaman Falls.

Reasons for visiting Wallaman Falls	Percentage of survey respondents					
	Not important	Slightly important	Moderately important	Important	Quite important	Very important
See natural features and scenery	-	-	5.3	11.5	21.4	61.8
Be close to/ experience nature	-	2.3	11.4	18.2	24.2	43.9
Experience tranquillity	4.7	6.3	10.9	24.2	20.3	33.6
Rest and relax	4.5	9.8	15.9	28.0	16.7	25.0
Outdoor exercise	10.7	10.7	13.0	26.0	19.8	19.8
Because it is a National Park	10.7	17.6	7.6	23.7	17.6	22.9
Opportunities for short walks	11.5	12.3	16.2	20.8	21.5	17.7
Socialise with family or friends	13.1	12.3	19.2	20.8	15.4	19.2
Learn about native animals and plants	6.1	14.5	2.9	31.3	13.0	12.2
Because it is a World Heritage Area	14.8	21.1	10.9	20.3	14.1	18.8
Opportunities for long walks	16.5	24.4	18.9	24.4	7.9	7.9
Learn about Aboriginal culture	20.5	26.8	19.7	21.3	4.7	7.1

Activities

Respondents were asked to indicate which activities they had undertaken at Wallaman Falls. Results are outlined in Figure 9. The most popular activities were the opportunity to view a scenic area (88.1%), opportunities for photography/painting/drawing (73.2%), wildlife observation (55.2%), relaxing (50%) and short walks (50%). The short walk refers to the walk from the carpark to the lookout viewing platform, across to the falls and the beginning of the Jinda Walk. The long walk refers to the Jinda Walk, a two-hour return trip. Reading was another activity noted.

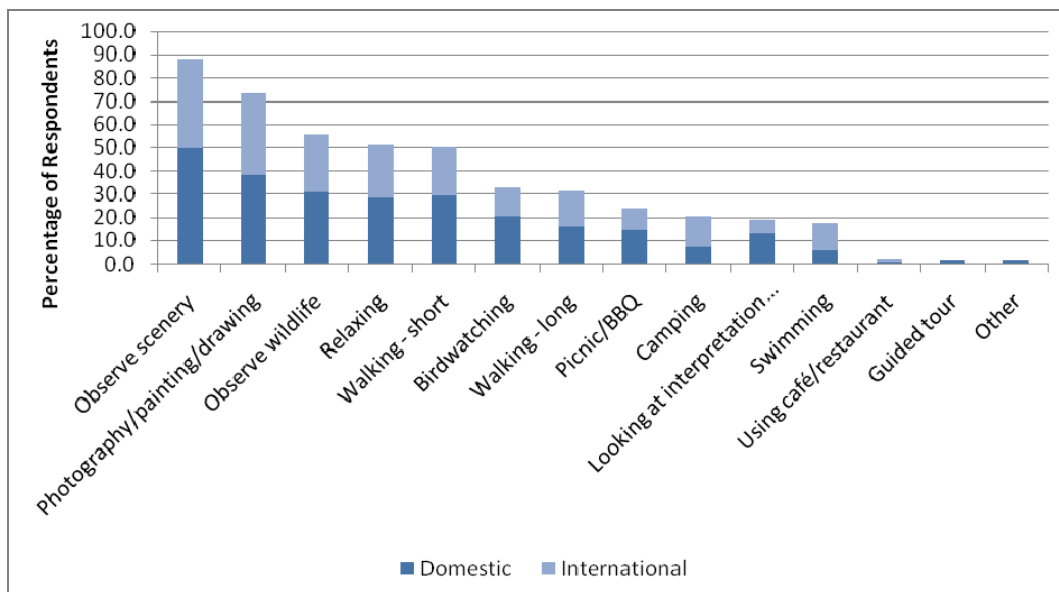


Figure 9: Activities undertaken at Wallaman Falls as cited by survey respondents (N = 135) in response to a multiple-response survey question.

An open-ended question was used to identify activities that respondents would have liked to have seen available at the site. Twenty-eight respondents (21.4% of the total sample) provided 25 responses (Table 11). Swimming, and swimming at the base of the falls, was stated by 14 respondents, followed by a longer walk (three responses) and the opportunity to take a photo of the falls without the safety fence obstructing the view (two responses). Single responses were given for a number of other desirable activities including seeing a cassowary, visiting a café, plant identification, a hot shower, the ability to get to the bottom of the gorge and a longer wheelchair friendly track.

Table 11: Activities which survey respondents indicated were desirable as part of their visit to Wallaman Falls (n = 28).

Activity	Overall (n)	Domestic (n)	International (n)
Swim in the falls	14	6	8
Longer walk/ bushwalking - track closed	3	1	2
Take photo without fence obstructing view	2	-	2
See a cassowary	1	1	-
Sit down at a café	1	-	1
Plant identification	1	1	-
Hot shower	1	-	1
Go to bottom of gorge	1	1	-
Longer track for wheelchair	1	1	-
Total	25	11	14

Figure 10 illustrates the length of time visitors spent at Wallaman Falls. Most visitors spent between thirty minutes and three hours at the site. International visitors were more likely to stay overnight (6.1%) or for more than four hours while domestic visitors were more likely to stay about one hour (15.9%).

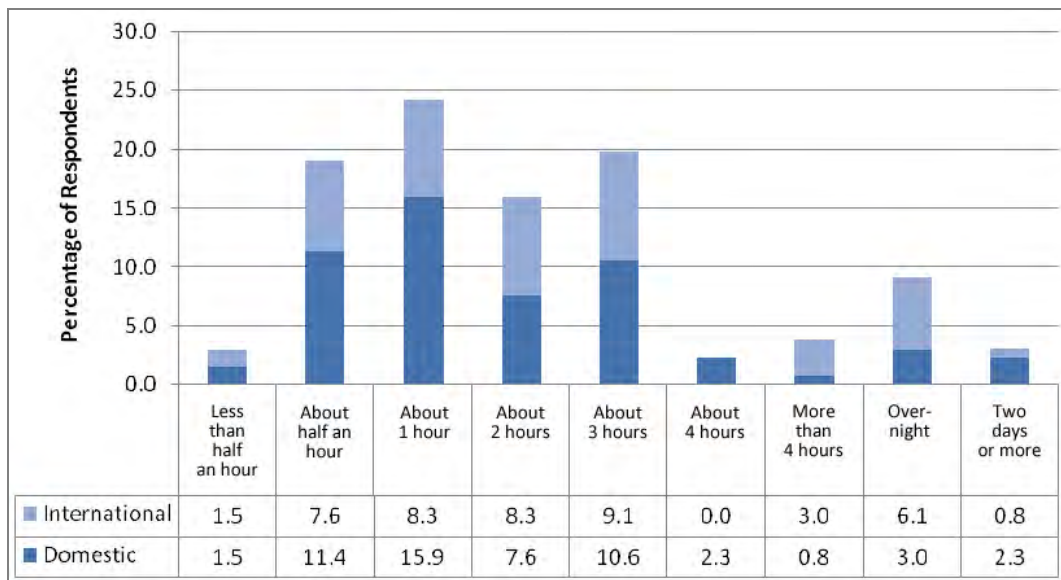


Figure 10: Approximate time spent at Wallaman Falls by both domestic and international visitors (n = 132).

Willingness to Pay

Currently, visitors to protected natural areas in Queensland are not charged an access/entry fee. Respondents were asked to indicate how much they would be prepared to pay if an entrance fee was introduced at the Wallaman Falls site.

Just under half (41.2%) of all respondents indicated that a visit to the site should not incur a cost while 35.9% indicated they were willing to pay up to \$5 (Figure 11). There was little support for fees in excess of \$5. The respondents' origin, occupation or education levels were not significant factors in their responses to the willingness-to-pay survey question.

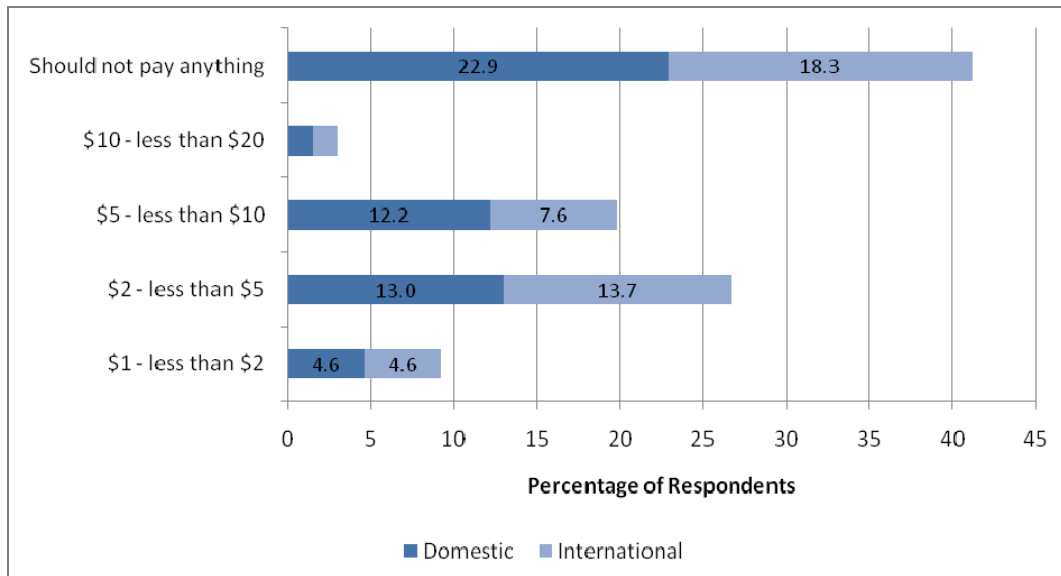


Figure 11: Survey respondents' willingness to pay an access/entrance fee to visit Wallaman Falls (n = 131).

3.2 Perceptions of the Natural Environment

A series of statements were used to gather respondents' views on the natural environment surrounding Wallaman Falls. Respondents were asked to indicate their views using a Likert scale where 1 = 'strongly disagree' and 6 = 'strongly agree'. The mean value of each statement is provided in Table 12. Overall, respondents considered Wallaman Falls to be interesting (mean = 5.57), appealing (5.48), in good condition (5.44) and well managed (5.26). There were very low levels of concern for the site being disturbed and impacted (mean = 2.29) however international visitors did have a slightly higher level of concern for the impacts of human activity at the site (3.97) compared to their domestic counterparts (3.65).

Table 12: Domestic and international visitors' perceptions of the natural environment at Wallaman Falls.

Perceptions of the natural environment at Wallaman Falls	n	Overall Mean	Domestic visitors (mean)	International visitors (mean)
The natural environment at this site is interesting.	134	5.57	5.68	5.45
In terms of natural attractions and scenic beauty this site is appealing.	132	5.48	5.66	5.26
The condition of the natural environment at this site appears to be good.	134	5.44	5.55	5.30
The natural environment at this site is well managed.	133	5.26	5.53	4.92
I would like to spend more time exploring this natural environment.	134	4.83	5.01	4.60
I am concerned about the impacts of human activity on the natural environment at this site.	134	3.79	3.65	3.97
This site appears to be disturbed and impacted.	133	2.29	2.14	2.47

Levels of agreement/disagreement with statements about the natural features of the site measured as a percentage are summarised in Table 13. Very strong levels of agreement were evident with given statements, such as the natural environment being interesting (98.6%), well managed (95.5%), in good condition (99.3%), and appealing (96.2%), and respondents indicated they wanted to spend more time at the site (93.3%). Seventy-nine percent of respondents did not think that the site was had been disturbed or impacted.

Table 13: Survey respondents' perceptions of the natural features at Wallaman Falls.

Perceptions of the natural environment at Wallaman Falls	Percentage of survey respondents					
	Strongly disagree	Somewhat disagree	Mildly disagree	Mildly agree	Somewhat agree	Strongly agree
The natural environment at this site is interesting.	-	0.7	0.7	9.0	19.4	70.2
In terms of natural attractions and scenic beauty this site is appealing.	-	1.5	2.3	6.1	26.5	63.6
The condition of the natural environment at this site appears to be good.	-	-	0.7	7.5	38.8	53.0
The natural environment at this site is well managed.	-	1.5	3.0	11.3	36.8	47.4
I would like to spend more time exploring this natural environment.	0.7	1.5	4.5	29.9	34.3	29.1
I am concerned about the impacts of human activity on the natural environment at this site.	10.4	14.9	14.9	23.1	17.9	18.8
This site appears to be disturbed and impacted.	34.6	31.6	12.8	15.0	3.7	2.3

3.3 Perceptions and Use of the Site Facilities

Survey respondents were asked to rate given statements about the site’s facilities using a Likert scale of 1 = ‘strongly disagree’ to 6 = ‘strongly agree’. Table 14 indicates high levels of satisfaction with the facilities at Wallaman Falls. Domestic respondents had more positive perceptions of the site than international respondents. Site facilities were perceived to be in good condition (mean = 5.19), well managed (5.15), adequate (5.01) and appealing (4.91). The presence of a ranger at the site received moderate support (mean = 3.72).

Table 14: Domestic and international visitors’ perceptions of the site facilities at Wallaman Falls.

Perceptions of the site facilities at Wallaman Falls	n	Overall Mean	Domestic visitors (mean)	International visitors (mean)
The overall condition of the facilities at this site appears to be good.	129	5.19	5.48	4.84
The facilities and infrastructure at this site are well managed.	129	5.15	5.35	4.90
The facilities at this site are adequate.	129	5.01	5.28	4.67
This site is appealing in terms of the character and attractiveness of the facilities.	127	4.91	5.26	4.50
The presence of a ranger at sites like this is important to me.	127	3.72	3.73	3.72



The percentages for agreement/disagreement with each statement are shown in Table 15. High levels of agreement are evident with all aspects of the facilities and infrastructure. There was some support for the stationing of a ranger at the site.

Table 15: Survey respondents' perceptions of the site facilities at Wallaman Falls (n = 127).

Perceptions of the site facilities at Wallaman Falls	Percentage of survey respondents					
	Strongly disagree	Somewhat disagree	Mildly disagree	Mildly agree	Somewhat agree	Strongly agree
The overall condition of the facilities at this site appears to be good.	-	-	3.9	15.5	38.0	42.6
The facilities and infrastructure at this site are well managed.	-	0.8	4.7	13.2	41.9	39.4
The facilities at this site are adequate.	-	3.1	4.7	18.6	35.6	38.0
This site is appealing in terms of the character and attractiveness of the facilities.	-	3.1	4.7	26.0	29.9	36.3
The presence of a ranger at sites like this is important to me.	13.4	12.6	10.2	29.9	19.7	14.2

Presence of a Ranger On-site

Respondents were asked to rate the services that an on-site ranger could provide. Results reported in Figure 12 show that 46.2% of respondents thought a ranger would be able to provide information and education, and answer questions (41.0%), undertake site maintenance (39.6%) and provide safety and security (38.0%). Further analysis indicates domestic visitors were more likely to agree a ranger presence would be good for lodging complaints about others' behaviour ($p < .05$).

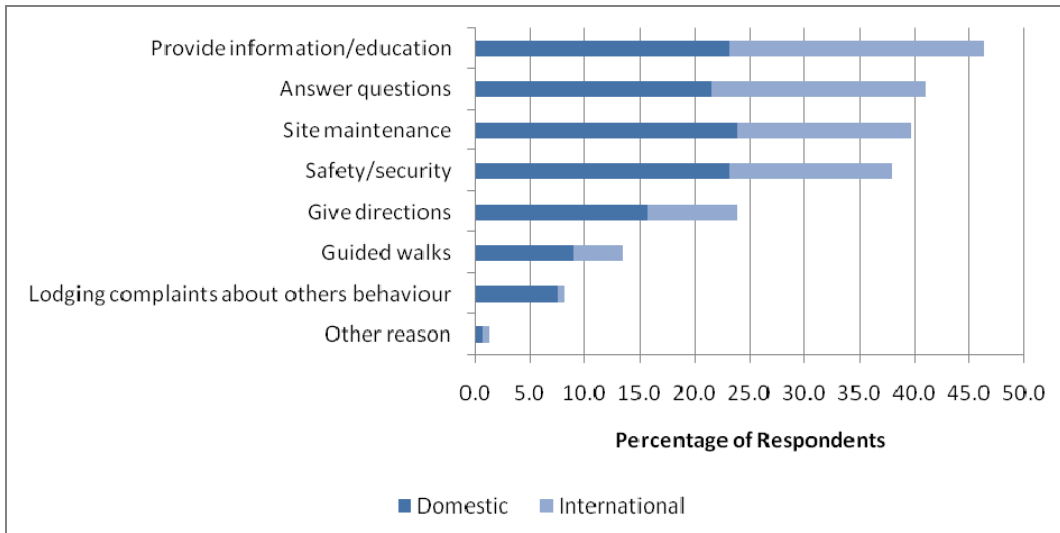


Figure 12: Survey respondents' suggested uses of an on-site Park Ranger at Wallaman Falls in response to a multiple-response survey question (n = 134).

Use of Site Facilities

A multiple-response format was used to ensure respondents had the opportunity to indicate the facilities they had used at the Wallaman Falls site. Results outlined in Figure 13 indicate the viewing platform/ lookout was used by 87.3% of sample. Other popular facilities were the walking track (74.6%) and toilet (70.1%). International visitors (45.0%) were more likely to use the on-site barbeques than domestic visitors (3.0%). More international visitors than domestic visitors reported staying overnight in the campground (see Figure 9). Domestic visitors were more likely to use the picnic tables.

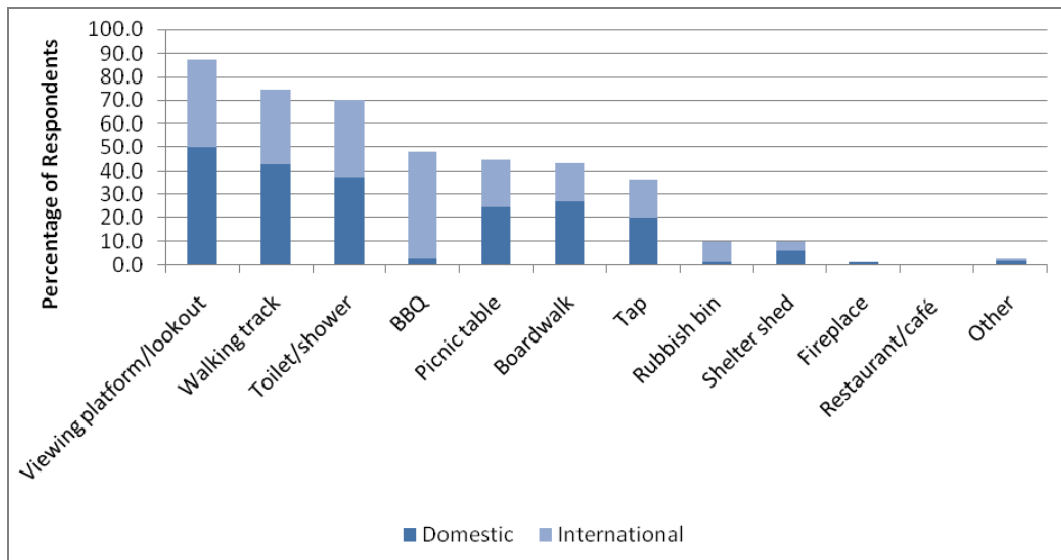


Figure 13: Most popular Wallaman Falls site facilities used by survey respondents, cited in response to a multiple-response survey question (n = 134).

Expected Site Facilities

Respondents were asked to indicate if there were facilities that they would have liked to have seen at the Wallaman Falls site. Twenty-two respondents (16.7% of the sample) responded to this question and provided 27 expectations (Table 16). Expectations included a rubbish bin (nine responses), hot shower (five responses), canteen (three responses) and an operational barbeque (two responses). Single responses were noted for a disabled handrail in the toilets, first aid station, plant identification, signage, soap provided in the toilet, a tap and drinking water tap.

Table 16: Facilities expected to be available at Wallaman Falls by survey respondents (n = 22).

Expectation	Total (n)
Rubbish bin	9
A hot shower	5
Canteen/ kiosk	3
Working barbeque	2
Disabled handrail in toilets	1
First aid station	1
Plant and natural features identification	1
Signage	1
Soap in the toilets	1
Tap	1
Tap water drinkable	1
Wallaman Falls at campground	1
Total Responses	27*

* Note: Multiple responses were given by some individual respondents.

Information about Wallaman Falls

Survey respondents were asked to indicate the sources they had used to gain information about the Wallaman Falls site prior to their visit, and to provide feedback on aspects of the interpretation provided at the site. Figure 14 shows the main information sources used were word-of-mouth (40.3%), a travel guide or book (30.6%) and a previous visit (21.3%). Domestic visitors were more likely to have visited Wallaman Falls previously, heard about the site through word-of-mouth or from road signage. International visitors were more likely to have read about the site in a travel guide or book, referred to a map or gained information from a tourist information centre in north Queensland. Other sources identified were local knowledge (one response) or being shown around by a local (three responses), and the television (one response).

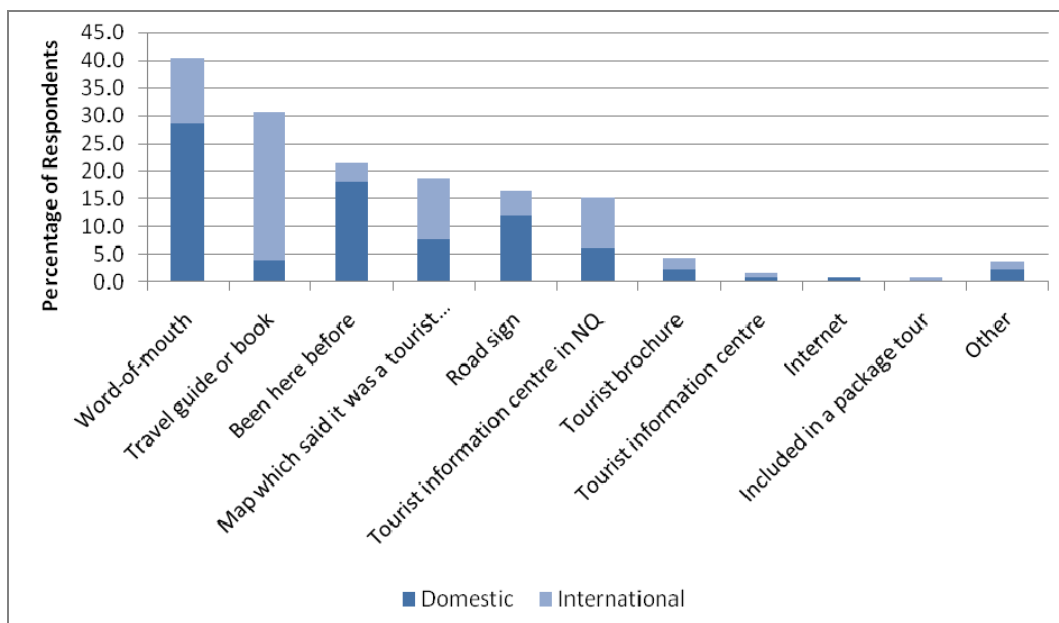


Figure 14: Sources of information consulted by survey respondents prior to visiting Wallaman Falls (n = 134).

The majority of respondents (92.8%) were satisfied with the information source they used prior to their visit. Only eight respondents indicated the information they had used prior to their visit was inaccurate (Table 17). One respondent indicated that the telephone was not working at the campground and another said they did not obtain a lot of information about the site, just its location.

Table 17: Feedback from survey respondents regarding the accuracy or inaccuracy of information about Wallaman Falls obtained prior to their visit (n = 2).

Comments/feedback received	Frequency (n)
Telephone not working	1
Didn't obtain a lot of information about the site, just that it is there	1
Total Responses	2

On-site Signage

Interpretative and directional signs are important features of the infrastructure at any visitor site. Visitors were asked to comment on statements regarding on-site signage and interpretation using a Likert scale of 1 = 'strongly disagree' to 6 = 'strongly agree'. Table 18 provides respondents' views on information provided at the site. Respondents reported that signs, maps and directions were easy to find (mean = 5.42) and the rules and safety information was easy to understand (5.37). Respondents generally agreed that the site's signage helped to direct them around the site (mean = 5.26) and information about rules and safety information addressed their concerns (4.97). Information about aspects of Aboriginal cultural information received a lower level of support (mean = 3.59) and as did information about the significance of the site to the Aboriginal people (3.48). Domestic visitors gave a higher rating for all aspects of the signage compared to international visitors.

Table 18: Domestic and international survey respondents' perceptions of on-site signage at Wallaman Falls.

Perceptions of on-site information at Wallaman Falls	n	Overall Mean	Domestic visitors (mean)	International visitors (mean)
Signs, maps and directions				
Were easy to find	133	5.42	5.51	5.32
Helped me to find my way around	129	5.26	5.32	5.19
The rules and safety information				
Were easy to understand	133	5.37	5.44	5.28
Addressed my interests and concerns	129	4.97	5.15	4.74
The information about natural features and values				
Was interesting and informative	131	4.82	4.96	4.67
Helped me to better appreciate the special natural features of the area.	129	4.67	4.91	4.37
The Aboriginal cultural information				
Was interesting and informative	111	3.59	3.75	3.38
Helped me to understand the significance of this area for rainforest Aboriginal people	112	3.48	3.56	3.39

Table 19 outlines the percentage of responses for each level of agreement/disagreement to statements about on-site information at Wallaman Falls. Almost all respondents agreed that the signs, maps and directions were easy to find (99.2.0%) and 97.6% indicated these helped them to find their way around the site. Almost all respondents (90.1%) indicated that that information on the site’s natural features was interesting and informative, whilst 86.8% agreed that signage helped them to understand the significance of the site’s natural features.

Table 19: Survey respondents’ perceptions of on-site tourism information provided at Wallaman Falls.

Perceptions of on-site information at Wallaman Falls	Percentage of survey respondents					
	Strongly disagree	Somewhat disagree	Mildly disagree	Mildly agree	Somewhat agree	Strongly agree
Signs, maps and directions						
Were easy to find	-	-	0.8	10.5	33.8	54.9
Helped me to find my way around	0.8	0.8	0.8	14.0	36.4	47.3
The rules and safety information						
Were easy to understand	0.8	0.8	0.8	9.0	36.1	52.6
Addressed my interests and concerns	0.8	1.6	5.4	20.9	34.9	36.4
The information about natural features and values						
Was interesting and informative	0.8	1.5	7.6	24.4	35.9	29.8
Helped me to better appreciate the special natural features of the area.	1.6	2.3	9.3	28.7	31.0	27.1
The Aboriginal cultural information						
Was interesting and informative	12.6	17.1	13.5	27.0	15.3	14.4
Helped me to understand the significance of this area for rainforest Aboriginal people	14.3	17.9	12.5	29.5	12.5	13.4



Jinda Walk signage (Photo: Julie Carmody)

Using an open-ended question, survey respondents were asked for suggestions on additional interpretative information they would like to see at the site. Twenty-seven respondents (20.0% of the sample) provided 32 suggestions. Table 20 shows suggestions for Aboriginal cultural information by eight respondents, followed by walking track signage (five responses), wildlife identification charts (five responses), plant identification (four responses), hydrology information about the waterfall (three responses) and more information about the site's natural features (two responses).

Table 20: Survey respondents' suggested additional visitor information that could be made available at the Wallaman Falls site (n = 27).

	Overall (n)
Cultural Information	
Aboriginal cultural information on-site	8
Flora and Fauna	
Wildlife identification charts	5
More plant identification	4
More information about natural features and wildlife	2
Walk Information	
Walking track signage	5
Other	
Hydrology information about waterfall (e.g. litres per year, which lake it feeds into, climate)	3
Better road signs	2
Anything	1
Alternative safe swimming, e.g. 'Cannot swim here but go to ... for safe swimming'	1
Historical information	1
Total Responses	32*

* Note: Multiple responses were given by some individual respondents.

3.4 Visitor Experience

Visitors were asked to comment on aspects of their visit that enhanced or increased their enjoyment of the site. An open-ended question was used and 70 responses were received from 56 respondents (41.5% of the sample). Results were grouped into four categories: natural, facilities, psycho-social and others (Table 21). Clearly, the waterfall enhanced the visitor experience (25.7%), as did the weather (12.9%), well maintained facilities (11.4%), the view of the waterfall (5.7%) and the viewing platform (5.7%).

Table 21: Aspects that visitors considered enhanced or increased their enjoyment of Wallaman Falls (n = 56).

	Frequency (n)	Percentage (%)
Natural		
Waterfall	18	25.7
Great weather	9	12.9
View	4	5.7
Beautiful place	3	4.3
Rainforest	2	2.9
Seeing Ulysses butterfly	1	1.4
Mist at base of falls	1	1.4
Unspoilt nature of the site	1	1.4
Seeing a cassowary	1	1.4
Facilities		
Well maintained facilities	8	11.4
Platforms helping for a better view and photo	4	5.7
The walk	2	2.9
Easy walking for limited ability/ mobility	2	2.9
Easy access	2	2.9
Maintained walkways	1	1.4
Barbeque and campsite	1	1.4
Seating along the track	1	1.4
Psycho-social		
Green and lush	3	4.3
Swimming	2	2.9
Peace and tranquility	1	1.4
Seeing falls at sunset	1	1.4
Friendly Queenslanders	1	1.4
Other		
Longer sections of sealed road to protect rainforest from dust	1	1.4
Total Responses	70*	100.0

* Note: Multiple responses were given by some individual respondents.

Respondents were also asked for their views on aspects of the site that detracted from their enjoyment. Twenty suggestions were received from 19 respondents (14.0% of the total sample). Responses focused on the road into Wallaman Falls requiring some maintenance and sealing (four responses), the condition and closure of the long walking track (four responses) and congestion in the carpark (two responses). Both respondents who indicated congestion in the carpark was a problem were surveyed between 12.30 and 1.30 pm on Sunday, 11 April. There were a large number of visitors at the site on that day. Except for this period parking spaces were readily available.

Table 22: Aspects visitors considered took away or detracted from their enjoyment of Wallaman Falls (n = 19).

	Frequency (n)	Percentage (%)
Natural		
Rain	1	5.0
Saw a wild pig roadside for the first time in 23 years, as well as evidence of feral pig diggings	1	5.0
Facilities		
Track closed	2	10.0
Difficult and bad condition of long track	2	10.0
Telephone not working	1	5.0
Fence obstructs view of falls for photo	1	5.0
'Atrocious' [state of the] toilets	1	5.0
Rules / Regulations / Safety		
People taking shortcuts	1	5.0
Psycho-social		
Too many people	1	5.0
Other		
Road could be better maintained with less potholes	2	10.0
Parts of unsealed road	2	10.0
Congested carpark	2	10.0
This unnecessarily long survey	1	5.0
Toilet paper/ some litter	1	5.0
Noisy people	1	5.0
Total Responses	20	100.0

* Note: Multiple responses were given by some individual respondents.

The conclusions that can be drawn from the results reported in Tables 21 and 22 are that respondents considered Wallaman Falls to be the core experience of the visitor site and that the facilities provided at the day use areas enhanced respondents' overall levels of enjoyment.

Other Visitors

The behaviour of other visitors at a site can affect the level of enjoyment an individual derives from visiting that site. In circumstances where overcrowding occurs the overall level of enjoyment could be expected to fall. However, the link between perceived crowding and satisfaction is weak and is dependent on personal norms, situational variables and site infrastructure (West, 1981; Stankey and McCool, 1984; Kalisch and Klaphake, 2007). A series of statements were presented in the survey and respondents were asked to comment using a Likert scale of 1 = 'strongly disagree' to 6 = 'strongly agree'. Table 23 indicates respondents considered the behaviour of other visitors to be reasonably environmentally responsible (mean = 4.21) and indicated strong disagreement with the statement that the behaviour of others detracting from their enjoyment (1.60) or others preventing a visitor from doing what they wanted (1.66). Overcrowding was not a significant issue (mean = 2.05).

Table 23: Domestic and international visitors' perceptions of other site visitors.

Perceptions of other site visitors at Wallaman Falls	n	Overall Mean	Domestic visitors (mean)	International visitors (mean)
The behaviour of other visitors at this site has been on the whole environmentally responsible.	127	4.21	4.40	3.98
There were too many people at this site today.	129	2.05	2.09	2.02
The presence of other people at this site prevented me from doing what I wanted to.	128	1.66	1.58	1.75
The behaviour of some visitors at this site detracted from my enjoyment of this site.	127	1.60	1.51	1.71

Table 24 provides respondents' levels of agreement/disagreement with statements relating to perceptions of other visitors at the site. Only 4.7% of survey respondents believed that the presence of other people at Wallaman Falls prevented them from doing what they wanted, and 93.0% did not feel that the behaviour of other visitors detracted from their enjoyment. Only 17.8% of respondents thought there were too many people at the site.

Table 24: Perceptions of other visitors at Wallaman Falls.

Perceptions of other site visitors at Wallaman Falls	Percentage of survey respondents					
	Strongly disagree	Somewhat disagree	Mildly disagree	Mildly agree	Somewhat agree	Strongly agree
The behaviour of other visitors at this site has been on the whole environmentally responsible.	15.7	4.7	8.7	13.4	28.3	29.2
There were too many people at this site today.	51.9	17.8	12.5	11.6	3.1	3.1
The presence of other people at this site prevented me from doing what I wanted to.	60.9	21.1	13.3	2.3	0.8	1.6
The behaviour of some visitors at this site detracted from my enjoyment of this site.	68.6	15.0	9.4	3.1	3.1	0.8

3.5 Additional Comments

The survey instrument provided respondents with the opportunity to record comments on any aspect of their visit. Comments were received from eleven respondents at Wallaman Falls. Comments were mainly focused on the site facilities, such as recommendations for the installation of handrails in the toilets to assist disabled visitors, a solar hot shower for the campground and maintenance of the road into Wallaman Falls.

Date	Comment
14 April 2010	'Toilets need handrails for the disabled.' <i>Far North Queensland visitor, female, 39 years</i>
14 April 2010	'The explanation for the geological time scale and age of the falls is doubtful and wrong.' [Wallaman Falls] <i>Far North Queensland visitor, male, 30 years</i>
13 April 2010	'I am staying at the Wallaman Falls campground and a solar hot water system in the showers would be a great addition.' <i>North Queensland visitor, male, 49 years</i>
13 April 2010	'Very important to have a rail for people with a disability to use toilet – not to Australian Standards at present at Wallaman Falls.' <i>Other Queensland visitor, male, 63 years</i>
12 April 2010	This survey should have more options to say 'does not affect me'. <i>North Queensland visitor, female, 39 years</i>
11 April 2010	'Need trailer parking and more parks. Need somewhere to swim.' <i>German visitor, female, 26 years</i>
11 April 2010	'You may need to look at the quality of the roads if visitor numbers are high, e.g. more turnout areas for passing.' <i>Far North Queensland visitor, male, 46 years</i>
11 April 2010	'I am a local and still always enjoy this area.' <i>Far North Queensland visitor, male, 64 years</i>
11 April 2010	'Needs a café.' <i>North Queensland visitor, female, 25 years</i>
11 April 2010	'So lucky to have areas like that in Australia.' <i>French visitor, female, 26 years</i>
11 April 2010	'I like the way this campsite is built around the environment with all of the native flora. Good amenities and cooking facilities.' <i>North Queensland visitor, female, 40 years</i>

4. Management Considerations

The findings of this survey indicate that respondents view Wallaman Falls as a well maintained site that enables them to appreciate the site's natural values. Results also indicate that the lookout and overnight camping facilities were popular features.

The findings presented in this report suggest management consideration is given to the following matters:

- There were many positive comments that complimented the park management agency for the quality of the current facilities, natural landscaping and state of the Wallaman Falls lookout site.
- The Wallaman Falls Gorge Lookout and Gorge Walk are displayed on the WTMA website as wheelchair accessible. The DERM website does not indicate the site is wheelchair accessible; however disabled access toilets are available at both the Wallaman Falls lookout and the campground. For the site to comply with the relevant Australian Standards handrails need to be installed in the toilets for disabled persons.
- Signage at the Wallaman Falls lookout indicates that swimming is possible at the campgrounds on the Banggurru walk. Similar signage has not been installed at the Banggurru walk campground access point. Consideration should be given to installing directional signage to the rock pools walking track at the campground entry point.
- A number of comments suggest that additional maintenance is required on the access road to the site.
- Signs located at the base of the range advise visitors the road is not suitable for caravans. However there are identified parking spaces for caravans and camper trailers at Wallaman Falls lookout. This inconsistency should be addressed.
- The public telephone located at the Wallaman Falls campground should be checked regularly by park rangers to ensure it is in working order, primarily for safety. The site is outside of the coverage area of mobile telephone providers.
- Consideration needs to be given to the removal of cattle from the site.
- There is confusion about the height of the falls. Signage at the lookout indicates the falls are 268 metres, while the WTMA website indicates 305 metres, the DERM website states 268 metres and an Ingham tourist brochure currently in circulation states 305 metres. This needs to be addressed.
- Additional interpretative information should be considered. Suggestions by respondents include additional information on local flora and fauna, as well as Aboriginal culture and the site's geological history.
- Promotion of the site to the host community as a camping and recreation site may increase the appreciation of protected areas and World Heritage values amongst the community. This could be achieved via regular updates in the local media highlighting aspects of the park's ecosystem and when the falls is in flood.
- The site's World Heritage status was not a major 'pull factor' for visiting the site. This finding highlights the need for a more vigorous and coordinated strategy to promote the Wet Tropics' World Heritage status. One element of this strategy may be to encourage destination marketing collateral to include the World Heritage logo.

- Install a visitor counter (similar to toilet counter) to develop a more detailed picture of visitor numbers and daily visitor patterns. Data of this nature, combined with the results of this survey will give managers a better understanding of how the site is used on a daily, weekly and monthly basis.

5. References

- Altinay, L.** and Paraskevas, A. (2008) *Planning Research in Hospitality and Tourism*. Oxford: Butterworth-Heinemann.
- Budeanu, A.** (2007) Sustainable Tourism Behaviour – a Discussion of Opportunities for Change. *International Journal of Consumer Studies* 31: 499-508.
- Carmody, J.** and Prideaux, B. (2008) *Community attitudes, knowledge, perceptions and use of the Wet Tropics of Queensland World Heritage Area in 2007*. Report to the Marine and Tropical Sciences Research Facility. Cairns: Reef and Rainforest Research Centre.
- Kalisch, D.** and Klaphake, A. (2007) Visitors' satisfaction and perception of crowding in a German National Park: A case study on the island of Hallig Hooge. *Forest Snow and Landscape Research* 81(1-2): 109-122.
- Manidis Roberts Consultants** (1994) *Data summary: 1993 Visitor use survey Wet Tropics World Heritage Area*. Report to the Wet Tropics Management Authority, Cairns.
- Stankey, G.H.** and McCool, S.F. (1984) Carrying capacity in recreational settings: Evaluation, appraisal and application. *Leisure Sciences* 6(4): 453-473.
- West, A.** (1981) Recreational carrying capacity. In: J. Pigram (1983) *Outdoor recreation and resource management*. London: Croom Helm Ltd.
- Whitmarsh, L.** (2009) What's in a name? Commonalities and differences in public understanding of "climate change" and "global warming". *Public Understanding of Science* 18: 401-420.

Appendix 1: Site Survey Instrument



Visitor Site Survey in the Wet Tropics World Heritage Area

Interviewer:

Survey Location:

Survey Date: Time:

Weather: Sunny Overcast Raining Hot Warm Cool

Other Comments: (e.g. windy, smoky, mist)

.....

Dear Visitor,

We are researchers from James Cook University, School of Business – Tourism, and on behalf of the Wet Tropics Management Authority we are exploring visitors’ expectations and experiences of this Wet Tropics site. We would be very grateful if you would participate in the study by completing this questionnaire.

Your participation will help to improve visitor services and the continued management of sites by understanding visitors’ needs and views.

The questionnaire is **voluntary** and all **responses remain completely anonymous**.
The questionnaire will take approximately **15 minutes** to complete.
Thank you very much for your participation.

If you would like any more information about this project please contact the project manager. If you would like to discuss any ethical matters regarding this project please contact the Ethics Administrator. This project has Human Ethics approval H3100 from James Cook University.

**PLEASE DETACH AND RETAIN THIS INFORMATION
PAGE ONLY FOR YOUR FUTURE REFERENCE**

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9. In your travels today, where did you **previously visit** before coming to this site?
(e.g. township, visitor site)

.....

10. In your travels today, where do you plan to go **after leaving this site**?

.....

11. How often do you **visit natural areas** like this (e.g. National Parks)?

- This is my first time
- Less than once a year
- Once a year
- Between 2 and 5 times a year
- More than 5 times a year

SECTION C: REASONS FOR VISITING

12. Please indicate how important the following **reasons** were for you **visiting this site** today.

	Not important	Slightly important	Moderately important	Important	Quite important	Very important
See natural features and scenery	1	2	3	4	5	6
Be close to / experience nature	1	2	3	4	5	6
Social with family or friends	1	2	3	4	5	6
Rest and relax	1	2	3	4	5	6
Experience tranquility	1	2	3	4	5	6
Outdoor exercise	1	2	3	4	5	6
Opportunities for short walks	1	2	3	4	5	6
Opportunities for long walks	1	2	3	4	5	6
Because it is a World Heritage Area	1	2	3	4	5	6
Because it is a National Park	1	2	3	4	5	6
Learn about native animals and plants	1	2	3	4	5	6
Learn about Aboriginal culture	1	2	3	4	5	6
Other (please specify)	1	2	3	4	5	6

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

- | | |
|---|---|
| <input type="checkbox"/> Observing scenery | <input type="checkbox"/> Walking – short (1 hour or less) |
| <input type="checkbox"/> Bird watching | <input type="checkbox"/> Walking – long (1-6 hours) |
| <input type="checkbox"/> Observe wildlife | <input type="checkbox"/> Swimming |
| <input type="checkbox"/> Photography / painting / drawing | <input type="checkbox"/> Guided tour |
| <input type="checkbox"/> Picnic / barbeque (BBQ) | <input type="checkbox"/> Looking at interpretation material |
| <input type="checkbox"/> Using café / restaurant | <input type="checkbox"/> Relaxing |
| <input type="checkbox"/> Camping | <input type="checkbox"/> Other (please specify): |

.....
.....

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

- Yes
 No

If you answered 'Yes', please specify:

.....
.....

15. How **long** have you spent at this site today?

- | | |
|--|--|
| <input type="checkbox"/> Less than half an hour | <input type="checkbox"/> About 3 hours |
| <input type="checkbox"/> About half an hour | <input type="checkbox"/> About 4 hours |
| <input type="checkbox"/> About 1 hour | <input type="checkbox"/> More than 4 hours |
| <input type="checkbox"/> About 2 hours | <input type="checkbox"/> Overnight |
| <input type="checkbox"/> Days (please specify) | |

16. If an **entrance fee** were introduced to access this site today, how much would you be willing to pay?

- \$1 – less than \$2 (AUD)
 \$2 – less than \$5 (AUD)
 \$5 – less than \$10 (AUD)
 \$10 – less than \$20 (AUD)
 I do not think I should pay anything to access this site as a day visitor.

SECTION D: NATURAL ENVIRONMENT

17. The following statements are about the **natural features** of this site. Please rate the extent to which you agree or disagree with each statement.

	Strongly disagree	Somewhat disagree	Mildly disagree	Mildly agree	Somewhat agree	Strongly agree
The natural environment at this site is interesting.	1	2	3	4	5	6
I would like to spend more time exploring this natural environment.	1	2	3	4	5	6
In terms of natural attractions and scenic beauty this site is appealing.	1	2	3	4	5	6
The condition of the natural environment at this site appears to be good.	1	2	3	4	5	6
The natural environment at this site is well managed.	1	2	3	4	5	6
I am concerned about the impacts of human activity on the natural environment at this site.	1	2	3	4	5	6
This site appears to be disturbed and impacted.	1	2	3	4	5	6

SECTION E: SITE FACILITIES

18. What facilities have you used at this site today? (Tick as many as applicable)

- | | |
|---|---|
| <input type="checkbox"/> Picnic table | <input type="checkbox"/> Walking track |
| <input type="checkbox"/> Shelter shed | <input type="checkbox"/> Boardwalk |
| <input type="checkbox"/> Restaurant / café | <input type="checkbox"/> Viewing platform / lookout |
| <input type="checkbox"/> Rubbish bin | <input type="checkbox"/> Fire place |
| <input type="checkbox"/> Toilet / showers | <input type="checkbox"/> Barbeque |
| <input type="checkbox"/> Tap | |
| <input type="checkbox"/> Other (please specify) | |
| | |

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

- Yes
- No

If you answered 'Yes', please specify:

.....

.....

20. Please rate the extent to which you agree or disagree with each of the following statements about the **facilities and management** at this site.

	Strongly disagree	Somewhat disagree	Mildly disagree	Mildly agree	Somewhat agree	Strongly agree
The site is appealing in terms of the character and attractiveness of the facilities.	1	2	3	4	5	6
The facilities at this site are adequate.	1	2	3	4	5	6
The overall condition of the facilities at this site appears to be good.	1	2	3	4	5	6
The facilities and infrastructure at this site are well managed.	1	2	3	4	5	6
The presence of a ranger at sites like this is important to me.	1	2	3	4	5	6

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

- To provide information / education
- To give directions
- To answer questions
- For lodging complaints about others' behavior
- To take us on guided walks
- For site maintenance
- For safety / security
- Other (please specify)

.....

SECTION F: INFORMATION

22. How did you **find out about this site**?

- | | |
|---|---|
| <input type="checkbox"/> Have been here before | <input type="checkbox"/> Travel guide or book |
| <input type="checkbox"/> Road sign | <input type="checkbox"/> From the web |
| <input type="checkbox"/> Word of mouth | <input type="checkbox"/> The trip here was included in a package tour |
| <input type="checkbox"/> Map which said it was a tourist site | <input type="checkbox"/> Tourist brochure (which one?) |
| | |
| <input type="checkbox"/> Tourist information centre in North Queensland | <input type="checkbox"/> Tourist information centre (other) |
| | |
| <input type="checkbox"/> Other (please specify): | |

23. If you obtained **prior information** about this site, was the information accurate?

- Yes
 No

If you answered 'No', please specify:

.....

24. Did you refer to any of the information available at this site today? Yes
 No

25. Please rate the extent to which you agree or disagree with the following statements about **information available** at this site.

	Strongly disagree	Somewhat disagree	Mildly disagree	Mildly agree	Somewhat agree	Strongly agree
Signs, maps and directions...						
were easy to find	1	2	3	4	5	6
helped me to find my way around	1	2	3	4	5	6
The rules and safety information...						
were easy to understand	1	2	3	4	5	6
addressed my interests and concerns	1	2	3	4	5	6
The information about natural features and values...						
was interesting and informative	1	2	3	4	5	6
helped me to better appreciate the special natural values of the area	1	2	3	4	5	6
The Aboriginal cultural information...						
was interesting and informative	1	2	3	4	5	6
helped me to understand the significance of this area for Rainforest Aboriginal people	1	2	3	4	5	6

26. If you were to visit this site again, is there any **additional information** you would like?

Yes

No

If you answered 'Yes', please specify:

.....

SECTION G: VISITOR EXPERIENCE

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

Yes

No

If you answered 'Yes', please specify:

.....

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

Yes

No

If you answered 'Yes', please specify:

.....

29. Please rate how strongly you agree or disagree with the following statements about **other visitors at this site** today.

	Strongly disagree	Somewhat disagree	Mildly disagree	Mildly agree	Somewhat agree	Strongly agree
There were too many people at this site today.	1	2	3	4	5	6
The presence of other people at this site prevented me from doing what I wanted to do.	1	2	3	4	5	6
The behavior of other visitors at this site has been on the whole environmentally responsible.	1	2	3	4	5	6
The behavior of some visitors at this site detracted from my enjoyment of this site.	1	2	3	4	5	6

ADDITIONAL COMMENTS:

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

THANK YOU VERY MUCH FOR YOUR PARTICIPATION

Appendix 2: Site Photographs

Wallaman Falls site signage



Photographs by Julie Carmody and Fay Falco-Mammone

Wallaman Falls site facilities



Photographs by Julie Carmody and Fay Falco-Mammone

APPENDIX 2 – SITE PHOTOGRAPHS



Photographs by Julie Carmody and Fay Falco-Mammone