Development of a comprehensive evaluation strategy for displays at Department of Conservation visitor centres

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Abstract

The purpose of this project was to develop a research methodology which can be used by Department of Conservation staff to achieve an understanding of how visitors use interpretation displays, and the messages that are communicated by them.

To achieve this a variety of research techniques were used in an attempt to understand the visitor's response to the interpretation displays at Fox Glacier, Haast, North Egmont, Punakaiki and Whakapapa Visitor Centres. This information then became the basis for evaluating the effectiveness of the interpretation displays.

The research methodologies were then reviewed and refined, and recommendations developed for the introduction of a viable evaluation strategy for understanding the visitor's experience of using Department of Conservation interpretation displays and on-site panels.

From this a Guide - Meylan, 1995, DoC Technical Series No. 9 - has been prepared which explains how Department of Conservation staff can carry out in-house evaluation of interpretation displays and on-site panels at all stages of the design process.

1. Introduction

1.1 PROJECT OVERVIEW

New Zealand is seeing an increasing use of its natural environment for recreation and tourism. As a result of this there is a need for information, and effective interpretation, of the environment to visitors.

A significant part of the natural environment is preserved in New Zealand's national parks, and here the Department of Conservation visitor centres are an important source of information and interpretation. Understanding how visitors use these centres, and the messages they receive from the interpretation displays, is important if the communication process is to be enhanced. The purpose of this project was to develop a research methodology which can be used by Department of Conservation staff to achieve this understanding.

Two research methodologies were trialled, both of which used a variety of qualitative and quantitative evaluation techniques, in an attempt to gain a comprehensive understanding of visitors' experience of, and reaction to displays. The first methodology reviewed the experience of visiting the display areas at the Fox Glacier, Haast, North Egmont, Punakaiki, and Whakapapa Visitor Centres (the presentation order being alphabetical. The second reviewed the effectiveness of two individual displays at Punakaiki and Whakapapa Visitor Centres. The data obtained from visitors to these centres

was processed, compiled and analysed. The subsequent evaluation process has been described in chapters 3-8 of this report.

The methodologies were then reviewed, the strengths and weaknesses outlined, and the research process analysed in consultation with DoC staff to create a viable strategy for understanding the experience of visitors using Department of Conservation display areas, displays, and on-site interpretation panels. Once the process was defined a guide was prepared.

A guide has been written which outlines ways the Department of Conservation can carry out in-house evaluation of displays at all stages of design and development. This Guide - Meylan, 1995, DoC Technical Series No. 9 - is the basis for a structured seminar/workshop programme which will be able to be delivered to Department of Conservation staff on a regional basis.

1.2 BACKGROUND

The understanding of how effectively displays are received by visitors is obtained from evaluation studies. Evaluation of displays and exhibits has been around for some time, especially in the museum world. Museums have tended to focus on the ability of visitors to recall specific information presented in the exhibition, usually using a questionnaire derived from formal educational testing systems.

However, such methods failed to consider the visitors' perspective of the displays, to describe their experience of visiting them, and to take into account that visitors go to visitor centres for a wider variety of reasons than just to learn something.

This research attempts to find a way to understand the visitor's experience of interacting with the displays at Department of Conservation visitor centres. This involves establishing what visitors do while they are there, what they learn, how the display affects them, and their perceptions of the experience. From this understanding more effective displays can be developed.

This approach is analogous to developments in market research, where two models are used to represent consumer decision making, the information processing model, and the experiential view. The information processing model views consumers as logical thinkers who solve problems by weighing evidence and arriving at carefully considered judgements. The experiential view considers the subjective aspect of the consumptive experience and this is claimed to be a more important determinant of user satisfaction than the more rational objective criteria (Holbrook and Hirschman 1982).

In understanding the visitor's response the research was interested in the visitor's behaviour and the educational response as well as the affective/experiential response. The behavioural responses includes how they use the display area, the time they spend there, and what they do at the displays. The educational response is what the visitors learnt from the displays, and the messages they recieved from it.

Such experiences are subjective, and the research must therefore be orientated to the visitor, allowing them to evaluate displays on their own terms, and

reflect the reality of their experience. The principle of this type of evaluation is that visitors hold the insight into whether the display is performing or not. Rather than testing whether the visitor can work out what the display is about, the ability of the display to meet the visitors need and expectations is measured using their criteria. To achieve this, a number of different research techniques are needed. These need to be open ended and "visitor friendly".

The one-on-one interview is one such technique. This technique is designed to test the display and not the visitors. However data from one-on-one interviews can be limited by the verbal ability and memory of respondents, unknown filtering of information by visitors, the dynamics of the visitor/researcher relationship, and intervention of researcher bias during interpretation.

This research has therefore also used observation of the behaviour of visitors to give another perspective. This technique includes tracking and timing, and behavioural mapping. Observation of visitors gives a wider picture of their activity than verbal reports, has minimal interference with normal visitor-display interaction and gives a less biased interpretation of visitor response. These techniques are described further in 2.2.

By using a variety of methods it is proposed that a more holistic version of display performance can be achieved. The application of multiple techniques also allows triangulation to occur, which means the different methodologies act as a check and balance on each other where discrepancies between the results from the different techniques can be revealed.

The use of such multiple techniques should enable the research to examine the diverse aspects of the user response to display areas and displays in Department of Conservation visitor centres.

2. Research design

2.1 INTRODUCTION

Two research methods were used to understand visitor response to display areas and individual displays.

1. Researching the visitor responses to interpretation display areas in Department of Conservation Visitor Centres using the following techniques:

	BEHAVIOURAL	AFFECTIVE/ EXPERIMENTAL	EDUCATIONAL
Tracking and Timing	✓		
Behavioural Mapping	✓		
One-on-One Interviews		✓	✓
Staff Interviews	✓	✓	✓

2. Researching visitor responses to individual displays in Department of Conservation Visitor Centres using the following techniques:

	BEHAVIOURAL	AFFECTIVE/ EXPERIENTIAL	EDUCATIONAL
One-on-One Interviews		✓	✓
Observation	✓	✓	

2.2 METHODOLOGY FOR EVALUATING INTERPRETATION DISPLAY AREAS AT DEPARTMENT OF CONSERVATION VISITOR CENTRES

Observational techniques

Two observational techniques were used, tracking and timing and behavioural mapping. These methods generate information about how visitors actually use the display environment.

Tracking and timing

Tracking and timing is an observational method which contributes a relatively unbiased "check" on visitor-display interaction. It is effective in determining usage patterns, including which displays attract visitor's attention (and which do not). It also provides an insight into the influence of the physical environment of the display area in determining visitor behaviour. Unobtrusive observation of paths taken by visitors through the display areas were conducted based on the methods described by Falk *et al.* (1985).

Careful attention was paid to this method because of the ethics involved in observing visitors without their prior consent. Confidentiality was maintained as a matter of course due to the anonymity of the observed visitor, but this does not alter the fact that visitors are observed without their knowledge. Where possible, each tracking and timing was followed up with an exit interview. At this time, verbal consent to use the data was obtained from the visitor.

Visitors were randomly selected as they crossed an imaginary line into the display area. The time of entry was noted. The visitor was then observed as they interacted with the displays in the display area. Sketch maps had been prepared for each of the five display areas, and onto these the stops that the visitors made were recorded with a cross, and the arrival time at the stop was noted. If visitors stopped, but were not interacting with the displays, their behaviour was annotated and the time noted e.g., "telling off children (30 seconds)".

The exit time was recorded when the visitor exited over the imaginary line. All maps were coded as adult, teenage or child and then numbered. This is the only identification and guarantees the confidentiality of the visitor.

Analysis of tracking and timing

A matrix was drawn up with the visitor's codes across the top and names of the displays as identified by the researchers down the side. The matrix was then filled in with the time (in seconds) spent at each display the visitor stopped at. The total time spent in the display area was also recorded at the bottom of the list. From this matrix, the following calculations were made:

1. The percentage of visitors who stopped at each display,
2. The mean times spent in the display area (widely perceived as a more effective measure than average time, Birney *1991)* and the average times.
3. The average length of time spent at each display,

The patterns of movement of the visitors around the display area was also noted where this was appropriate e.g., clockwise.

Behavioural mapping

Behavioural mapping is a technique that consists of a comprehensive census of all visitors in a facility. The census follows a rigid time schedule, usually every 15 or 30 minutes, when the location of each visitor is noted. This information provides an overall picture of usage patterns within a facility. This method is derived from environmental psychology, and has been applied to display and exhibit evaluation by Hayward (1988). For this research, a copy of the sketch map used for tracking and timing was used as the basis for recording the results

of the behavioural mapping. In theory, the census was taken once every 15 minutes. However, as this had to take place at the same time as the researchers were using the other research tecniques, the time frame was not strictly adhered to. However, as random times were chosen, the result will still have validity.

Analysis of behavioural mapping

The information from the census was recorded on a copy of the same sketch map used for tracking and timing. When the census was completed, the figures for each display were totalled and presented.

One-on-one interviews witb visitors

The one-on-one interviews were intended to explore visitor reactions to the displays and the display area. An interview guide (see Appendix 1) was used with open-ended and qualitative questions to complement the other methodologies. They are designed to tap into subjective responses.

In particular, the interviews collated information on:

- Demographic characteristics - age, sex, where they are from.
- The reasons for their coming to the visitor centre and whether it met their needs.
- What they liked and disliked about the displays and display area.
- How they would improve the display area.

Those interviewed were the same visitors who had been tracked and timed. However, as the questions were attempting to gain information on visitors perceptions of the displays, the visitors were not interviewed if they spent only a short time (usualy less than one minute) in the display area.

Question 1, *What is the main reason you came into the visitor centre today*, and Question 2, *Did the centre meet your needs?* were designed to give background information on the purpose of the individual visit, and an indicative pattern of the reasons why those who visited the display areas came into the visitor centre.

What do you like best about the displays in the centre? tapped the visitors' perception of what was successful and could include an educational, presentational and affective perspective. The results show patterns of preference, and also the range of experiences visitors enjoyed. If necessary, prompts were used for this question asking visitors to consider both the style of presentation and the actual display topics.

In asking the question *What do you like the least?* what is perceived as being least successful was identified.

The question, *Did you find anything confusing about the displays?* was designed to explore the educational message reception, and the behavioural aspects of the visit.

If you had the time, the money and the job of designer of these displays how would you improve them? was designed to identify the experiences

visitors enjoyed, and to elicit a range of suggestions that may useful for further enhancing the experience in the visitor centre displays.

The questions were asked in the order they appear on the interview guide. However, given the qualitative and open-ended nature of the interview, if the visitor in conversation mentioned information which was relevant to other questions, then it was recorded under the appropriate question. Any other comments made, which were not the result of responses to questions, were also recorded.

The researchers attempted to record the visitor's thoughts verbatim. However, this was not possible at all times because of the speed people spoke and the need to allow a "flow" of ideas from the visitor.

A number of interviewees did not have English as a first language and in these cases some questions were explained in more detail. This is unlikely to have biased results.

The interviews, though designed as one-on-one, were often answered by the interviewee plus others who were with them. In this case, all answers were recorded and the number answering was noted.

Analysis of one-on-one interviews

The analysis began with the total sample size, and whether the visitors were from overseas or New Zealand.

The questions were analysed separately. Because of the open-ended structure, the responses required ordering into discrete categories based on methods described by Greene et al. (1987). As the questions allow multiple answers, the total number of responses can be greater than the sample size.

Data was presented using the following format:

What is the main reason you came to the visitor centre today?

The categories used for analysis were:

- for information,
- to visit the displays,
- dropped in/passing by,
- other.

Did the centre meet your needs?

The categories used for analysis were:

- yes,
- no,
- partially,
- not appropriate to answer the question.

The final category was included because the question was not asked if the reason for coming into the visitor centre was not explicit, for example, "just passing".

What did you like best about the displays in the centre?

This question listed a variety of different responses and necessitated analysis under the main categories and then further analysis under sub-categories. The main categories used for analysis were:

display topics,
specific presentation styles,
overall presentation.

Various sub-categories were evolved for the evaluation of the specific visitor centre displays, and the number of such responses was recorded. For example, if photographs were mentioned, they were recorded under was specific presentation styles. Then photographs was listed and the number who mentioned this recorded. Using this form of analysis, a comprehensive understanding of the factors that visitors determine as effective can be presented.

What did you like the least?

The categories used were:

nothing/like it all,
no answer/don't know,
specific display design feature,
other.

Did you find any of the displays confusing?

This question was analysed using the category "No", and then other answers were listed. Because of the range of answers, and that many of the comments were specific to individual displays, general categorisation was not appropriate.

If you had the time, the money and the job of developer of these displays, how would you improve them?

This question is asking for the visitor's ideas on how they would improve displays. Suggestions covered a wide range of possibilities. All answers are of ¡nterest so they are included. However, the answers are organised under the broad headings of "Information" and "Presentation" Under these two topics the suggestions were grouped where they covered similar concerns, but these are not definitive.

2.3 METHODOLOGY FOR INDIVIDUAL DISPLAY EVALUATION AT DEPARTMENT OF CONSERVATION VISITOR CENTRES

Observation

Visitors were randomly selected as they interacted with a specified display. The start time was noted and their actions recorded, e.g., reading, looking at displays, interactions with other visitors. When the visitor moved from the

display they were approached, and permission gained for the interview (see One-on-one interviews with visitors below).

Analysis of observations

The mean time spent at the display was calculated and the behaviours categorised if they appeared more than twice. The categories varied between displays.

One-on-one interviews with visitors

This interview guide was intended to be used for assessing both the message communication and the visitor preference for displays in the visitor centres. The interviews followed predetermined questions which explored both the perceived educational objectives of the display, and more personal reactions to it.

This guide was used with two case study displays, at the Punakaiki and Whakapapa Visitor Centres, with the view to refining it and using it for future in-house evaluation of individual displays. The methodology was based on that used by the British Museum of Natural History (Jarrett 1986).

Question one, *What did you like best about this display?* and question two *What did you like least,* were designed to identify the aspects of the display that visitors thought were and were not effective, and the reasons why. To assess the message communicated by the displays, they were also asked What do you think the designer was trying to show with the display?. To determine the success of message communication, visitors were then asked specific questions about the displays media, e.g., what do you think this machine is here for? Finally, visitors were asked If they were the designer of this exhibit how would you improve it?

The visitors were randomly chosen when they stopped at the display. If the visitor spent less than 30 seconds at the display they were not interviewed. (It was found that if visitors spent less than this time they found it very difficult to answer the questions, and were embarrassed they had spent such a short time!)

The questions were asked in the order they appear on the interview guide. However, given the qualitative and open-ended nature of the interview, if the visitor in conversation mentioned information which was relevant to other questions, then it was recorded under the appropriate question. Any other comments made were also recorded.

The interviews, though designed as one-on-one, were often answered by the interviewee plus others who were with them. In this case, all answers were recorded and the number answering was noted.

Analysis of one-on-one interviews

The questions were analysed separately. As they are open-ended in structure, the responses required ordering into discrete categories. These categories varied between the different displays, and are explained in the individual summaries. As the questions allow multiple answers, the total number of responses can be greater than the sample size.

2.4 INTERPRETING THE RESULTS

The purpose of this research is to give an understanding of the experience of visiting Department of Conservation visitor centre displays and display areas, and to determine their impact on the visitor.

The empirical and open-ended philosophy of this research enables the visitor to report their reactions in a manner meaningful to them. Interpretation of the results therefore involved determining whether the displays have met the needs and expectations of the visitors, according to the visitor's criteria.

Such an approach was also necessary because information on the expectations of the creators of the displays was not always available, and neither were the behavioural, experiential and educational objectives for the displays documented. This means it is difficult for the results to be used to evaluate the effectiveness of the display in the light of the developer's expectations. In some cases, these have been surmised but often they were unclear. By interpreting the data in this manner, it also means that there is no reason why reactions which were presumably unintended cannot be judged acceptable and desirable.

In interpreting these results the visitor's perspective and subsequent suggestions are the basis for the conclusions. Its validity is therefore in the rigorousness of the methodology, the analysis, and the completeness of the data. This can then be the basis for alternative interpretation or action.

3. Evaluation of the interpretation displays at the Fox Glacier Visitor Centre

3.1 INTRODUCTION

The Fox Glacier Visitor Centre is situated at the northern end of the Fox Glacier township, on the western side of State Highway Six.

The display area is a roughly circular room (see Figure 4) which is accessed through the retail section, and past the information desk. Nearly all the displays are situated on the walls around the outside of the room, except for the Rainforest Tunnel, (which is a hexagonal tunnel lined with large photographs of a rainforest) and the Photograph.

The research was carried out on two occasions, 11th and 12th December, and 1st and 2nd April 1994 (Good Friday and Easter Saturday).

Positive Reactions

- High level of visitation to some displays.
- Some displays had a high level of attraction.
- Writing is read.
- Displays are easy to understand.
- Displays satisfy desire for information.
- Logical sequence.

Negative Reactions

- Not enough information on Fox Glacier.
- Dated display on Fox Glacier.
- Confusion over direction around the display area.
- Some displays unpopular (subsequently removed).
- Display area not holding visitors for long.

3.2 VISITOR TRACKING

The display area at Fox Glacier Visitor Centre was identified as having 18 different displays (see Figure 4). The displays Cooled During Ice Age and Ice Age Continued were counted as one display for analysis purposes.

A difficulty for the research at Fox Glacier was that the displays Arrival of Man, Introduced Mammals, Research, Future Management, and Westland National Park, were removed between the two research dates. These displays were replaced by a temporary display Marine Reserves. Forty visitors were tracked and timed before the five displays were removed. Another 29 visitors were tracked and timed after the displays were removed. In the analysis of the tracking and timing results only the sample of 40 from the first research period have been used. However, the results were very similar across the whole

sample, except for the Welcome, Mountains to Sea, and the Photograph, which had decreased percentage of the visitors stopping at them during the second research period.

It should be noted that although the Marine Reserves display was not included in the analysis, 25 of the 29 visitors tracked and timed over the Easter period stopped to view it.

The visitors were randomly chosen as they crossed an imaginary line at the entrance to the display room. The length of visits ranged from 1 minute to 11 minutes, therefore collection proceeded at uneven rates. The tracking and timing was able to be carried out from the information and retail section, however the researchers may have had an impact on visitors, especially when the numbers of visitors in the display area was small.

Findings

The December research period saw 40% of the sample from New Zealand. 75% of the visitors entered the room and started at the left hand side. However, the rest of the sample moved around the displays in an anti-clockwise direction.

The median time spent in the visitor centre's display area was five minutes, the average time six minutes. (It should be noted that this was the same across both research periods).

Figure 1 shows the visitation pattern; the most popular display being **Carved by Glaciers**, with 85% of visitors spending time there. Other popular displays included **Ice Age**, and **Arrival of Man** (one of the displays which has been removed). **Carved by Glaciers, Ice Age** and **Wildlife** were also the displays which visitors spent the longest average time (see Figure 4).

The least popular displays were **Temperate Forest** (1), **Westland National Park**, and **Welcome**. (Of the displays removed all but **Arrival of Man** had less than 33% of visitors stopping during the first visit period).

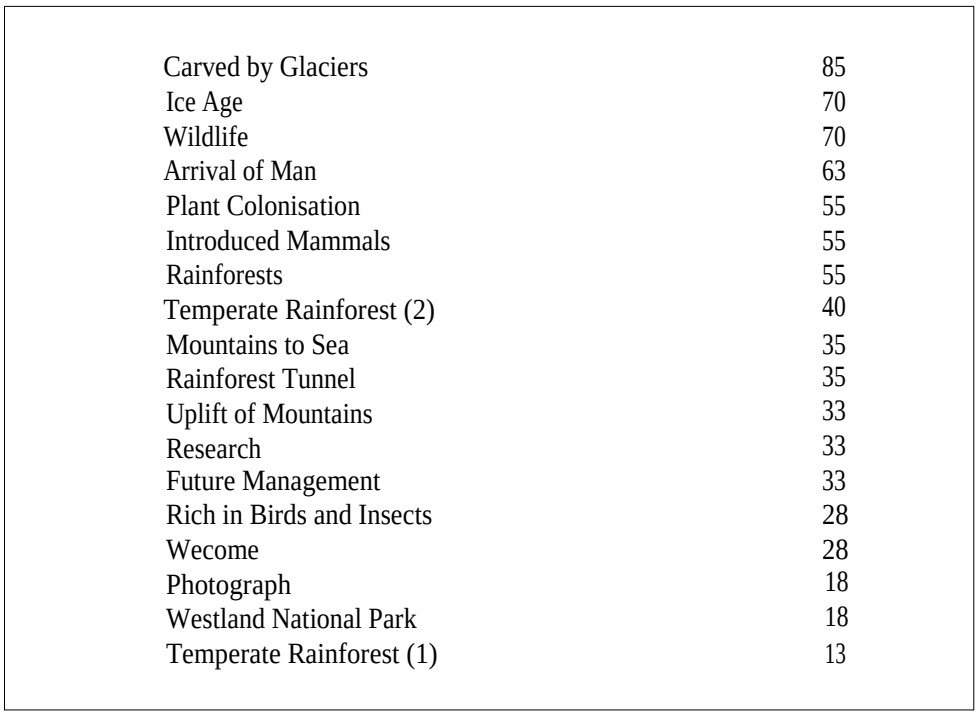
3.3 FORMAL INTERVIEWS OF VISITORS TO THE DISPLAY AREA

Introduction

As the basis of this research is to understand the visitor's experience of the display area, it can be presumed that this will have changed between the first and second research periods. It would have been interesting to make a comparison across the two periods to evaluate the effect of the **Marine Reserves** display. However, the sample size was too small to enable this to be done.

The decision was made to include all the interview data from both research periods in this analysis. However, this means that any conclusions drawn from the data must take cognisance of, and acknowledge this.

FIGURE I % OF ALL THE VISITORS TO THE FOX GLACIER VISITOR CENTRE I NTERPRETATION DISPLAY AREA, WHO STOPPED AT EACH DISPLAY (SAMPLE SIZE 40).



Findings

One-on-one structured interviews were carried out with 59 visitors. Half the visitors were from overseas. Figure 2 provides a summary of visitor responses.

Nearly two thirds of the visitors came to the centre to get information, with a smaller group coming to visit the displays. Of the latter group, most were visiting because they "like visiting visitor centres", rather than especially for displays at Fox Glacier.

Nearly all visitors thought that the centre met their needs, though a number mentioned they would have liked "more information on the glacier".

In responding to the question about what they liked best, visitors often gave quite long answers which included a variety of ideas. The display topics were frequently commented on, 'the glacier [**Carved by Glaciers]** one was interesting". This display was also mentioned as a way of seeing the glacier if time or weather conditions meant visitors could not get to it. Other displays mentioned included the **Rainforest, Wildlife** and **Arrival of Man**, with a number stating they liked all the displays on the left hand side of the display area.

The photographs, "real scope of what the country is like", were the presentation style most liked by visitors. A number also mentioned that they liked the "colour scheme, it fits in well". Positive comments were received that there was "not too much writing", "not too wordy", and that what was there "assumes you have some intelligence", and the "information is at a good level", but was "easy to read and understand". The flip game on the **Marine Reserve**

display was commented on favourably by six of the sample in the second period.

That the displays were "step by step so you were led through simply and easily" was the most liked overall feature, although a number of general positive comments, "presentation is good" were also offered.

In describing what they liked least, most visitors (60%) mentioned nothing. However, the management displays (now removed) were mentioned. Concerns were also raised about the style, "not that excited by these type of displays", "with a lot of people it would be hard to browse", and "inclined to move through quickly because of the design".

Sixty percent of visitors thought there was nothing confusing. However, a number of particular concerns were raised about individual displays (see Appendix 2), e.g., "earthquake faults a little confusing". There was also some confusion and comment over where the Fox Glacier is today, and how up-to-date this information was. Some scientific words were a problem for visitors, particularly those with English as a second language. The most mentioned concern was the left to right sequence "flow is good but I'm used to going right to left" (North American).

Two thirds of the visitors sampled had suggestions for how they would improve the displays (see Figure 3). The most common theme was more on glaciers. Suggestions included an audio-visual, photos, a model including one to show how the Fox Glacier has moved over the years, and "hands-on displays things that you might find at the glacier".

Information on "people history of the glaciers", and "something on the conservation of resources", and "the importance of National Parks" were also mentioned.

Those confused over the direction to proceed around the displays suggested "carpet footprints on the floor", or a "start here sign". The space in the middle of the display area was also seen as needing to be used, and that they would do something about the flow which pushes people along. One suggestion was to compartmentalise the displays more. The addition of interactives was mentioned by a number of visitors. One comment was that the display area "seems a wee bit old"

3.4 SUMMARY

The purpose of this research is to give an understanding of the reaction of visitors to the interpretation display area at the Fox Glacier Visitor Centre. The visitors' perspectives and subsequent suggestions are the basis for the interpretation of results. This has involved determining whether the displays have met the expectations of the visitors, according to their criteria.

The most significant result of this research on the Fox Glacier Visitor Centre display area was that nearly 70%" of the visitors came to get information. As this research only included those visitors who came into the display area, conclusions cannot be drawn on whether the visitors' needs for information were met by the displays and/or from the information desk and retail section.

FIGURE 2 SUMMARY OF RESPONSES FOR FOX GLACIER VISITOR CENTRE

What is the main reason you came into the visitor centre today?

Information	40
To Visit Displays	10
Dropped In/Passing	7
Other	

Did the centre meet your needs?

Yes	50
No	0
Partially	3
Not Appropriate to Ask Question	8

What did you like the best about the displays in the centre?

DISPLAY TOPICS

- Carved By Glaciers	20
- Rainforest	12
- Arrival Of Man	4
- Wildlife	3

SPECIFIC PRESENTATION STYLE

- Photographs	12
- Colours	5
- Not Too Much Writing	3
- Three Dimensional	3
- Flick Games On Marine Reserves	G

OVERALL PRESENTATION

- Whole Story Approach	3
- Informative	2
- Clear and Concise	2
- Good Balance	1

What do you like the least?

Specific Display	15
Design Feature	5
Other	4
Nothing	29
No Answer	G

A more effective understanding of this would have been gained if the tracking and timing had been for the whole visitor centre rather than just the display area.

Visitors mentioned that they liked this display centre because it was short, to the point and that they could get on with their day's activities. This may account for how consistently around the mean of six minutes the visits were.

The displays at Fox Glacier Visitor Centre follow what appears to be a logical progression clockwise around the room, and most visitors followed this pattern, stopping or glancing at each display and choosing those they wished to stop at. Those overseas visitors who are used to the American convention of starting on the right did find this confusing, a concern easily overcome through appropriate signage. Otherwise, visitors appeared quite happy with the "logical sequence" although some felt this tended to hurry people through and put pressure on visitors to keep moving.

The individual display boards are quite small but visitors appeared to find this acceptable. Some visitors even suggested more compartmentalising. This reflects a positive visitor response to presentation in discrete blocks of information. Visitors made their own order for the information, a pattern which has been observed in research on museums.

Visitors also commented on the fact that the information in the centre was clear, concise and logical and that there was not too much reading, with the clarity of the graphics being an effective display presentation style. The researchers observed a lot of reading of the text which was supported by positive comments on the explanations. However, some of the longer stay visitors did feel the need for more detailed information, reflecting a need for producing displays which have information at different levels of complexity.

The sampled visitors spent quite short periods of time in the centre, the maximum being I I minutes. This may reflect the number who are coming for information rather than to "browse" the displays, and the small size of the centre; but it also reflects a lack of "holding" of some displays and a lack of information on some topics. For example, a significant number of visitors felt that more information was needed on the glaciers. This was supported by the tracking and timing and observation, where the glacier orientated displays were the most visited, and were stopped at the longest, especially **Carved by Glaciers**. In particular, visitors were interested in the movement of the glacier, and the display would seem to be rather out-of-date on recent movements in particular.

The removal of the displays **Research, Future Management** and **Westland National Park**, was supported by the results of the December research with these displays having little attracting or holding influence on visitors. That the staff chose these to be removed demonstrates the knowledge that those working in the visitor centres have about the displays, and the importance of them being included in the evaluation process.

The research does not, however, support the removing of the **Arrival of Man** display. This display was one of the most popular in the centre. Observation showed that this display, along with the adjacent one on **Introduced Mammals** were the catalyst for considerable discussion, especially for the

Zealand's natural environment, and this highlights an interest in conservation issues that is not reflected in displays at this or any of the other visitor centres studied during

this research. The popularity of this display also provides evidence of the usefulness of evaluation research in helping make decisions on changes to present display areas.

Interest in the **Introduced Mammals** display was prompted by the number of dead possums that overseas visitors in particular had observed along the road. They did not realise the effect of possums on New Zealand's natural environment. Such an interest supports the need for asking visitors about the information they want, and taking into account the needs of different visitor groups.

The interest in these two displays also raises the broader issue of the role of displays and display techniques in creating an affective experience for those visiting displays, particularly when this applies to influencing environmental sensitivity. It would appear there is a need for research into this role.

The age of displays drew some negative comment. In particular the recent movements of the Fox Glacier meant the photograph in **Carved by Glaciers** was out of date, causing problems for those trying to orientate themselves after visiting the glacier.

Despite the researcher's feelings that the colour scheme was rather dated, few visitors commented on this and some even supported it!

There was a desire for more variation in the presentation style reflected in the number of suggestions about having interactives and 'more movement'.

The number of overseas visitors, and the relatively small amounts of writing, supports the suggestion by visitors that laminated sheets with translations into the main visiting languages be supplied.

FIGURE 3 - RESPONSES TO QUESTION FIVE

Q5 If you were the developer of these displays, how would you improve them?

INFORMATION

A4 Maybe something larger on glaciers - bigger photos with back lighting. Glacier at same dimension as forest displays. Photos labelled.
A51 More about glacier - historic photos of glacier where it used to be - people history - correlate writing with pictures better.
A16 A "series" shot of how the glacier has progressed maybe from the "40s".
A58 More in depth of the glaciers because that's the focal point at Fox.
A59 More explanation on some stuff - would have been nice to see the difference in movement of ice over - say last 50 years in the glacier display.
49 More on glaciers - make glaciers a main theme especially as most people come for that. Scale model of glacier different shading showing progression of glacier.
A66 Show where the glaciers have moved over the years or how they have changed.
A70 More on glaciers (there is a town here because of glaciers), e.g ., facts like how steep compared with Franz and Fox, how long etc. Bird display - push button, make it light up a photo and give the bird call at same time. Utilise space in middle, e.g., photo display. Music might be nice.
A45 People history of the glacier and settlement and climbing etc.

A69 More geology.
A50 Examples of native plants (live).
A10 Bird identification charts would be good.
A71 More stuff on insects.
A25 Like more on the identification of birds and ferns.
A57 Make the vegetation display taller - enlarge whole display, bigger and higher ceiling - flow.
A3S omething on the seals - with beach. Slide presentation.
All Maybe a display to be aware of kea damage to cars at the glacier.
A14 More information on logging and the importance of national parks.
A46 Add something on the conservation of resources, gold mining - human history displays.
A55 More information - this just whets the appetite especially on continental drift etc. (how things ended up as they are).

PRESENTATION

A5 Audio visual of flying over glacier. Audio tape. Press buttons.
A13 Bit of audio - doesn't like reading a lot - variety in presentation - touch things.
A52 Audio visual but should still have a message not just special affects. Pictures of glacier for when the weather is bad (loved the Whakapapa audio visual).
A56 Slide carousel show with sound track (15 minutes).

A53 Computer questions/animation for people with computer interest. A model that you can go into of the glacier (compared with the rainforest tunnel). Translation into German, e.g., paper.

A21 Arrow "to start here". Carpet footprints on floor. Children like footprints. Add in video every half hour - 15 minutes on background.

A17 More movement - more interactive things.

A68 More movement - for example audio visual.

A54 Compartmentalise the displays so you are not distracted. Add hands-on displays - things that you might find at the glacier, e.g., bits of rocks labelled, trees etc. Make up of forest.

A61 Hands on stuff seems fashionable - pressing buttons, flipping things over etc.

A27 Reproduce the text of the displays in German etc.

A30 Use space in middle. Number exhibits from start to finish.

A31 Maybe a few tramping maps on wall. Topographical maps joined up.

A43 Add a map of whole area so you can see where you are from sea to main divide.

A62 Seems a wee bit old, 3D table of mountains and glaciers etc. puts everything in perspective. Also would be good to have more on what you will see in different places, e.g., drive south, north or on walking tracks in the area. What best to do if limited in time depending on interests.

A63 Like to have big 3D model - helps people to see distances, get perspective, see where attractions are.

A48 Improve the graphics - update them - new photos.

A60 More back lit photos especially of glacier - especially as we can't get up today. Slides/videos of places in area for people here in wet weather.

A42 A "start here" sign to indicate flow.

A47 Do something about flow - difficult to take it in. If others following they push you on. Have identifying words on Gillespies Beach photo, e.g., Mount Cook, where you are (just the big things).

A67 Dislike wall in middle of room - would be good to use it for displays or to set off the picture better.

A28 Seat to sit and take it in.

4. Evaluation of the interpretation displays at the Haast Visitor Centre

4.1 INTRODUCTION

Haast Visitor Centre is situated on the Haast Highway (State Highway Six), near the township of Haast on the West Coast of the South Island.

The Haast Visitor Centre interpretation display area is entered through a large entrance foyer which includes the retail section and the information desk. The display area begins on a sloping ramp which leads up to the left of the information desk. The display area includes a number of different spaces (see Figure 8). The display area has four large windows, three of which are used to interpret the views from the visitor centre. From the display area visitors can look down into the entrance foyer.

The Haast Visitor Centre was commissioned in 1990. A Haast Visitor Centre Display Galleries Brief (DoC West Coast Conservancy 1990) was prepared, and this stated that:

"Where budget and subject matter allow, interactive displays are required. Throughout the display galleries there is to be an interesting mix of techniques from passive to interactive, including some displays designed for young children.

The general impact of the displays is to be an "ordered yet organic" effect, which will be created with colour, texture and lighting playing key roles.

High quality graphics, clear messages, well chosen images and low maintenance construction detail will be combined with creative lighting effects and rich highlight colours. Anticipated visitor stay at the centre will be up to one hour, time spent in the display galleries 20-30 minutes (auditorium 15 minutes, foyer and retail 10-15 minutes, outdoors 10 minutes). Visitors are mostly international."

Positive Reactions

- High levels of visitations to displays.
- Effective at holding visitors.
- Long visitation times.
- Human history displays.
- The visits are enjoyed.
- Writing is read.

Negative Reactions

- Rainforest Walk not always understood.
- Children's displays (tunnel).

4.2 VISITOR TRACKING

The tracking of visitors was carried out on two occasions, 13 and 14 December 1993, and 3 and 4 April 1994 (which was Easter Sunday and Monday).

The display area at the Haast Visitor Centre was identified as having 35 different displays (see Figure 8).

Included in the Haast Visitor Centre is an auditorium for showing audio-visual displays. This was not included in the tracking and timing. There appeared to be few people using it - a pattern confirmed by staff.

Fifty two visitors were randomly chosen as they crossed an imaginary line at the entrance to the ramp where the displays begin. The length of their visits ranged from 1.5 minutes to 44 minutes, with seven visits being longer than 30 minutes. Therefore the tracking proceeded at uneven rates. The tracking was relatively easy as the open nature of the building allowed visitors to be easily viewed from a distance. However, a small number of visitors did realise they were being tracked, especially when the centre had few visitors.

The pre-Christmas time research period saw approximately 40% of the sample from New Zealand, whereas over the Easter period approximately 65% of the sample came from New Zealand. The number of teenager visitors was small though more families were in evidence over Easter.

Findings

The mean time spent in the Haast Visitor Centre display area was 12 minutes, 30 seconds. (The average time spent by visitors was 15 minutes, 30 seconds). Figure 5 shows the display visitation pattern.

From observation, the number of visitors who came into the centre but did not visit the displays was quite small. The exception was those on buses where the length of stop was short, with people using the toilets, and staying in the retail area.

Nearly all the visitors started at the bottom of the ramp and worked their way upwards, usually zig-zagging from one side of the corridor to the other. Twenty percent of the visitors did not proceed into the Rainforest Walk display.

Figure 5 shows the visitation pattern; the most popular being The West Coast (with nearly 80% of the visitors stopping), Horse Track to Highway, Ways Through the Barrier, and the Mountain Wilderness interactive. However, more than 50% of the visitors stopped at nearly half of the displays, and even some of the least visited displays such as Aerial Photo and Pacing the Cat Walk had rates of over 30%.

The tracking and timing showed a distinct pattern with those displays at the start of the display ramp getting more visits than those at the end, although the Storms and Rainbows display at the start (23% of visitors) and the Haast River (65% of visitors) were exceptions to this.

The time spent at displays followed much the same pattern as that for the number of visits, a notable exception being the Children's Table where those who stopped spent an average time of over two minutes.

FIGURE 5 % OF ALL THE VISITORS TO THE HAAST VISITOR CENTRE INTERPRETATION DISPLAY AREA WHO STOPPED AT EACH DISPLAY.

The West Coast	79
Horse Track to Highway	73
Ways through the Barrier	71
Mountain Wilderness (interactive)	67
World Heritage	65
Wilderness Highways	65
Haast River	65
Inanga	62
The Coastline	62
Tukutuku/Pouwhata	58
3D Map (top)	58
European Pioneers	56
Inanga Life Cycle	54
Window (bottom)	54
Mountain Wilderness	52
Fish Tank	50
Panorama Window (top)	48
Te Wahl Pounamu (Maori)	46
Mere, Spear, Adze	46
3D Map (middle)	46
Shoreline Struggle	46
Mountain Forest	42
Children's Table	42
Coastal Forest	38
Window (middle)	36
Floating Forest	35
Pacing the Catwork	35
Fertile Forest	33
Aerial Photo	30
Rocks	30
Breaking Barriers	25
Storms and Rainbows	23
Forest Journey	14
Maori Figure	4

4.3 FORMAL INTERVIEW OF VISITORS TO THE DISPLAY AREA

Introduction

The one-on-one semi-structured interviews were carried out with a random sample of 47 visitors. Of these, 25 were from New Zealand and 22 were visitors from overseas. The sample group including those who contributed to the interviews was 50.

Findings

To visit the centre and the displays was the predominant reason why people came to the visitor centre. Significantly, seven of the sample had the centre recommended to them by others. A number of visitors also dropped in while passing, but only ten came in for information. Figure 6 provides a summary of visitor responses.

Visitors felt the centre met their needs, "tremendous access to knowledge", "more information than expected". A number mentioned the affective aspect of their visit, "always enjoy a visit here", "impressed".

The responses to the question about what visitors liked best in the display centre were effusive, "its wonderful - great for overseas visitors". Answers were often long and covering actual displays, display techniques and the overall experience, "awe inspiring", "not oppressive", "gives a good feeling of South Westland".

The displays that were most liked were those related to the "early history stuff', especially **Ways Through the Barrier** and **Horse Track to Highway**. **The Rainforest Walk** was mentioned, along with the **Panoramas** - "loved the big windows", "paintings below the windows which show, even in bad weather what it's like".

"Photos excellent" was a sentiment mentioned by nearly half of the sample and, more specifically, the "historical photography because of their educational nature", was praised. The interactives were also popular - "pictures light up - effective". Interestingly, the writing was commented on favourably by a number of visitors - "easy to read and follow", "don't have to read lots to get something from it", "clear, concise ...", and "good writing, not too much, not too little".

The overall presentation was mentioned by some visitors, in particular the brightness and that it was easy to follow.

In describing what they liked the least, most visitors (60%) found it difficult to identify anything. No display was mentioned more than once so no pattern was evident, neither was there a pattern for design features.

Confusion over whether the rainforest display was open or not, was mentioned by three visitors (and a number more were observed in a quandary over this). Most (nearly 90%) of the visitors thought there was nothing confusing. In response to this question, a number elaborated on their answers by pointing out the "text is easy to follow".

In suggesting ways displays could be improved ideas ranged across a variety of different areas with no significant pattern (see Figure 7). Topics that could be added included conservation information, and more local information such as on Jackson Bay.

There were also a number of requests for "real things", including actual rocks, "real plants associated with the forest display", and "fish in the lake".

The only display which drew comment was the **Rainforest Walk**. Here visitors felt that the cases and pictures could have been made bigger, and that it could have been made clearer that "trees were trees". It was also suggested that it needed a "sign to say it was OK to enter".

FIGURE 6 SUMMARY OF RESPONSES FOR HAAST VISITOR CENTRE

What is the main reason you came into the visitor centre today?

Information	10
To visit displays	20
Dropped in/passing	14
Other	3

Did the centre meet your needs?

Yes	32
No	1
Partially	3
Not appropriate to ask question	10
Other	1

What did you like the best about the display in the centre?

DISPLAY TOPICS

- Ways Through The Barrier	12
- Horse Track To Highway	12
- Rainforest Walk	9
- Panoramas/Windows	G
- Inanga	3
- Children's Table	2
- Fish Tank	2

SPECIFIC PRESENTATION STYLES

- Photos	14
- Interactive	G
- Historical photographs	G
- Writing effective	G
- 3D models	G

OVERALL PRESENTATION

- Easy to follow	3
- Variety of media	3
- Bright	2
- Tells a good story	
- Good feeling of South Westland	

What do you like the least?

Nothing	27
No answer	3
Specific display	8
Design feature	5
Other	4

Only one person mentioned the need for "more hands on stuff', while another felt the three dimensional models could be more realistic, and two requested an audio-visual.

From an organisational perspective, comments were made about the lack of signs outside, the short opening times, and the inability to buy cups of tea and food.

4.4 SUMMARY

The purpose of this research is to give an understanding of the reaction of visitors to the interpretation display area of the Haast Visitor Centre. The visitors' perspectives and subsequent suggestions are the basis for the interpretation of the results. This has involved determining whether the displays have met the expectations of the visitors according to their criteria.

The results of this research show that the Haast Visitor Centre is achieving a number of its objectives. The Haast Visitor Centre Architectural Brief (DoC Hokitika 1990) states "The client expects a strong brave design statement ..." A number of visitors in the research sample commented on the building, but more particularly the visitor's book includes many comments about it, both positive, "Impressively presented, excellently sited", and negative "... sack your architect". Visitors also commented in the visitor's book about the displays, "Excellent interpretation ...", "Well displayed". Comments about the centre itself were not found in other centres' visitor books, where comments tended to relate more to the local area or the National Park itself.

The Haast Visitor Centre architectural brief also goes on to say "The client requires a form which will provide for vertical development within and for views out to significant natural features". The creative director for the exhibits was requested to accommodate natural light at the level viewing areas. These two requests have been met by the panorama windows. These windows were well used and were commented on favourably by a number of visitors. The brightness and openness of the display area which was achieved by this design was also liked by visitors.

This research has shown that the anticipated visitor's stay at the display galleries of 20 to 30 minutes was realistic. From observation, it would appear that the display galleries are in fact attracting proportionally more of the visitor's time than was anticipated.

Though not directly referred to in the display galleries brief, a number of the comments received during the research related to the enjoyment gained from visiting the displays. If this was an objective of the display galleries, then they would appear to be achieving it.

That the entrance to the displays was unclear to some visitors was observed by the researchers and mentioned by staff, with one family not proceeding until persuaded by their daughter that there was "something up there". Some form of signage or welcoming image would overcome this.

Nearly all visitors started at the bottom of the ramp and proceeded through the displays zig-tagging from one side to the other, then usually quickly exiting

from the point where they had got to. Interestingly, the two displays immediately on the left of the entrance (which could not be seen until the visitor was actually on the ramp) were two of the least visited displays. This appeared to be because they were behind the visitors as they entered the ramp, meaning that they were missed, rather than reflecting a lack of interest in their topics. Visitors were selective in their viewing, choosing the displays they wanted to look at and ignoring others.

Although 20% of the visitors did not proceed into the last ramp, the Haast River display on the top level area was popular with 65% of the visitors stopping there, indicating the number of visitors who worked their way from one end of the display corridor to the other.

The social history displays were very popular. With visitors spending on average more than one minute at each display, the observation that many visitors were looking at all the photos, and reading all the text was confirmed.

The **Rainforest Walk** was mentioned as being "liked" by visitors. However, the tracking and timing showed a low level of use. Even if the whole display is included as one, then only 58% of the visitors stopped in the display (this is less than **Haast River** and **The Coastline** which are on the top level). Both times the research was done, the **Rainforest Walk** soundtrack was not working and the lighting was only partially operating. This may have contributed to the number of visitors who passed quickly through or appeared to be unaware of the significance of the hanging netting. However, this does not account for those who did not enter because they felt it was "closed". A brief survey asking visitors what the **Rainforest Walk** display was about was carried out during the Easter research period. This showed considerable confusion over what it represented - "whitebait nets", "sand dunes", "follows from Inanga display", "rainforest with dripping water" (the sound actually being the light turning), and "hard to say really". An individual display evaluation is needed on this display.

The lack of holding power of the **Rainforest Walk** can be partly attributed to it being at the end of the displays with, as one staff member stated, people "passing through in cruise mode by this stage". It may also be because the light and sound aspects of the display were not operating. Staff said that there was an ongoing difficulty with the operation of the display, with it not appearing to fit the objective of "low maintenance construction".

The series of ramps and level areas may also have contributed to the times spent in this display. The tracking and timing shows that the displays on the ramps (with the exception of those at the start) had less stops, and less time spent at them than those on the level areas. The windows, wider area, and level floor appears responsible for influencing the visitor behaviour, a factor which may or may not have been intended.

The overall affect of the presentation of the displays at Haast was praised by a number of visitors - "nice and bright" and an "impressive layout", and criticised by none. The author is unsure whether this reflects a successful "ordered yet organic" effect; but it does show a high level of visitor satisfaction with the presentation methods used. Interestingly, only one visitor suggested the need

for more interactives. This was quite different to other display areas where these were often suggested.

The display area includes two displays particularly aimed at children. The Children's Table, which includes a jigsaw and a book of old photographs, was used occasionally by children but mostly by adults (this was the display those in the sample who stopped at it spent the longest average time). A small tunnel of netting in the Rainforest Walk appeared to be obscure and only one child was observed using it - after being told to by parents!

The interactives on the Mountain Wilderness display were popular with all visitors. However, the sliding doors on the Inanga display were used by only a few visitors. Most seemed unaware they were there.

In discussion with staff, a number of relevant comments were received. Some concern was expressed over the polystyrene labels which were being "picked" and that the rainfall figures were unclear. Concerns were also expressed that the area set aside for displays relating to Maori was too small and some exhibits had to be put in the corridor area. That few visitors used the audio-visual theatre was also confirmed.

The Haast Visitor Centre interpretative display area received very positive reactions from the visitors. The display both attracted and held the visitors, and they enjoyed the experience.

FIGURE 7 RESPONSES TO QUESTION 5 (HAAST)

Q5 If you were the developer of these displays, how would you improve them?

INFORMATION

Al Would like more of nature - extinction information - conservation education for children - issues re invading species versus local fauna - why we do what we do.

A48 More examples of native birds etc and animals in section on mountain wilderness.

A5 More information on Jacksons Bay - early history - better.

A46 Add something on why Jacksons Bay was so important in the first place.

A27 More about the families (local) they paid to put the roads in - bit more on early European settlement - don't overdo Maori information - its good as it is now.

A2 Information on the proposed new road.

A39 More Maori culture displays - perhaps more detail.

PRESENTATION

A3 An overview of what is in the display.

Al 5 You could see that the rocks weren't real at the base! An orientation display (had trouble locating interesting spots they've heard about.

A6 Cup of tea available.

A36 Put tearooms in - would like to see a rock collection from the area - actual rocks - where are the mosquitos?!

A41 If food available - might stay longer.

A9 Bring in some real life things.

Al l Twenty minute video - fish outside - past centre without seeing it - needs more impact on road. Only found out through the book.

A33 Possibly video - interactive video - someone to show people around, ask questions - person to speak and talk about display area.

A12 Opening times.

A13 Arrangement of rainforest displays - explanations with bigger display cases and bigger pictures etc.

A24 Make clearer that the trees in forest area are trees.

A37 Have real plants associated with forest displays - realised that the forest walkway supposed to be a rainforest.

A44 Forest walk - maybe sign or arrow to indicate "OK" or maybe a display to draw people in.

A14 Many words unknown - have tapes with translations into German.

A10 Pretty self-explanatory - not too much more - bogged down.

A16 Why not make use of high shed to put in more impressions of forest - draw people's eyes up. To give impressions of forest/mountains - walls above and around displays just white and sterile.

A26 Put in more stuff - fill in the blank spaces on the walls - no particular thoughts on what to put in.

A35 Design still a "jumble of squares" - needs to blend together more - make stories more clearly defined - there is nothing on the alpine fault - that's what made this place.

A40 Keep things together more - start off with a bit about Fox then move onto a new area - currently the information on a single place is spread throughout - put fish in the lake and feed them (pay feed system and more shelter for them).

A29 Make three models more realistic - maybe through use of colour.

A30 More hands on stuff - things you can move and touch - real bush - real plants. Needs signposting as many people drive past without realising it is an information centre.

A31 Have someone showing people around.

5. Evaluation of the Interpretation Displays at the North Egmont Visitor Centre

5.1 INTRODUCTION

The North Egmont Visitor Centre is situated on the flanks of Mount Taranaki, at the end of the North Egmont access road.

The visitor centre is on four levels. The first level is an entrance area from which stairs go up to a cafeteria and toilets. From there stairs go up to the next level which is the start of the display area (see Figure 12). Included in the display area is a ramp which leads up to the final display which includes a view of Mount Taranaki. The display area also includes views to the north and west. The displays themselves are presented on the walls of what is, in affect, a wide corridor.

The research at the North Egmont Visitor Centre was carried out on two occasions, 20 and 21 January 1994, and 24 and 25 March 1994 (this was a long weekend which included ANZAC day). Although the first period was at the end of the school holidays, it was comparatively quiet compared with the ANZAC period.

Positive Reactions

- Long visitation times.
- High levels of visitation to displays.
- Number of repeat visitors.
- Range of displays.
- Popular with local visitors.
- Educational.

Negative Reactions

- Language confusing.
- Little for children.
- Audio-visual not working.
- Confusion over messages.

5.2 VISITOR TRACKING

The display area was identified was having 21 different displays (see Figure 12).

Fifty two visitors were randomly chosen as they crossed an imaginary line at the top of the steps. The length of the visits ranged from one minute to 32 minutes, with seven visits being longer than 20 minutes. Therefore, tracking proceeded at uneven rates. The design of the visitor centre made tracking relatively easy, although some visitors did realise the research was being carried out.

During the first period the number of children was small. However, during the second period a number of families were in evidence.

Findings

The mean time spent in the North Egmont Visitor Centre display area was 13 minutes (the average time spent by visitors was 14 minutes).

Nearly all the visitors started at the first displays at the top of the stairs and worked their way through the display until they reached the Summit display. All but four of the visitors went to this display. However, very few stopped at all the exhibits. The least popular displays were those on the final ramp.

Figures 9 shows the visitation pattern; the most popular displays being **Summit** (with 92% of the visitors stopping), **Man and Mountain** (90%), and **Mountain Boundary.** These three displays also had the longest average time spent by visitors (all over one and a half minutes).

The results of the tracking and timing showed no distinct pattern between the number of visits to displays at the start of the display area and those at the end, except for displays on the last ramp which had fewer visits.

5.3 FORMAL INTERVIEWS OF VISITORS TO THE DISPLAY AREA

Findings

The one-on-one semi-structured interviews were carried out with a random sample of 42 visitors. Of these, 33 were from New Zealand and 10 from overseas. The sample group, including those who contributed to interviews, was 53. Figure 10 provides a summary of visitor responses.

Over half of the sample who came into the display area came to "visit the displays", with another quarter "just dropping in". This group included those who came into the centre bringing overseas tourists or visitors from "out of town", and local people who came to "take grandparents up the mountain", and "show the kids about the mountain". Of those who were visiting for information there was a number who had "just been round the mountain and had been in before they left but were not so motivated then. Now came in to get explanations for what they'd seen".

The North Egmont Visitor Centre sample of visitors included a significant group of visitors who were repeat visitors.

Of the visitors who came to the centre with a purpose, nearly all felt the centre met their needs. However, this questions was not appropriate to a significant group of the visitors who came "just for a look".

The displays that were most liked were those relating to the geology of the area, "volcanic stuff', "the basic geology was well explained". The social history

Summit	92
Man and Mountain	90
Mpuntain Boundary	80
The Taranaki Graben	75
Mountains aren't Forever (Aerial Photo)	70
Iron Sands	70
Walks	70
Egmont - a Climate Maker	67
Eroded Pouaki Volcano	67
Features of Flora	58
Mountains aren't Forever (Interactive)	50
Tephra	50
Some Distinct Features	45
The Living Mantle	38
Plant Zones	35
3D Model of Mt Taranaki	33
Adapting and Responding	30
Kaiwaka	20
Goblin Forest	20

display was the most liked individual display. The "view with the picture below" was also mentioned by six of the visitors, the last window and its view of the mountain is seen as being particularly effective.

Specific presentation styles were mentioned as being effective by 14 of the sample. In particular, the photographs and the coding system used to identify photographs with the text were popular.

The most prevalent comment relating to overall presentation was that the displays were "educational - not something that was learnt about at school", and "informative". The overall layout was also seen as effective, "you wander around until you finally get to the window at the top - a climax".

In describing what they liked the least, 35% of the sample found it difficult to identify anything. However, a number of comments were made suggesting that "things are getting pretty worn", and the displays were "kind of dated". Some comments were also made over the text size, especially on the Taranaki Graben display. No display was mentioned more than once, except for the Man and Mountain, "same as everywhere else".

In responding to the question of what was confusing, a significant number of comments related to the language level and the amount, and size, of the text. There was also confusion over some individual displays, including the climate display, and the Mount Ngauruhoe photograph's relevance. A number felt that "kids might find it confusing" with the suggestion that the displays may be, "too educational for your average Sunday visitor".

FIGURE 9 % OF ALL THE VISITORS TO THE NORTH EGMONT VISITOR CENTRE INTERPRETATION DISPLAY AREA WHO STOPPED AT EACH DISPLAY.

Summit	92
Man and Mountain	90
Mpuntain Boundary	80
The Taranaki Graben	75
Mountains aren't Forever (Aerial Photo)	70
Iron Sands	70
Walks	70
Egmont - a Climate Maker	67
Eroded Pouaki Volcano	67
Features of Flora	58
Mountains aren't Forever (Interactive)	50
Tephra	50
Some Distinct Features	45
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Goblin Forest	20

display was the most liked individual display. The "view with the picture below" was also mentioned by six of the visitors, the last window and its view of the mountain is seen as being particularly effective.

Specific presentation styles were mentioned as being effective by 14 of the sample. In particular, the photographs and the coding system used to identify photographs with the text were popular.

The most prevalent comment relating to overall presentation was that the displays were "educational - not something that was learnt about at school", and "informative". The overall layout was also seen as effective, "you wander around until you finally get to the window at the top - a climax".

In describing what they liked the least, 35% of the sample found it difficult to identify anything. However, a number of comments were made suggesting that "things are getting pretty worn", and the displays were "kind of dated". Some comments were also made over the text size, especially on the Taranaki Graben display. No display was mentioned more than once, except for the Man and Mountain, "same as everywhere else".

In responding to the question of what was confusing, a significant number of comments related to the language level and the amount, and size, of the text. There was also confusion over some individual displays, including the climate display, and the Mount Ngauruhoe photograph's relevance. A number felt that "kids might find it confusing" with the suggestion that the displays may be, "too educational for your average Sunday visitor".

FIGURE 11 - SUMMARY OF RESPONSES FOR NORTH EGMONT VISITOR CENTRE

What is the main reason you came into the visitor centre today?

Information	8
To Visit Displays	24
Dropped In/Passing	10
Other	2

Did the centre meet your needs?

Yes	26
No	2
Partially	0
Not Appropriate to Ask Question	16
Other	0

What did you like the best about the displays in the centre?

DISPLAY TOPICS

- Geology Displays	16
- Social History	8
- Window Panoramas	6
- Mountains Aren't Forever	4
- Summit	4
- Plant Display	3
- The Living Mantle	3
- 1,000 Year Old Wood	2

SPECIFIC PRESENTATION STYLE

- Photographs	4
- Models	3
- Photographs Coding To The Numbers Clear	3
- Very Visual	2
- Text Helpful	2

OVERALL PRESENTATION

- Educational	5
- Visually Attractive	4
- Layout Excellent	3
- Flow To The Top Window	3
- Music	2

What do you like the least?

Nothing	15
No Answer	8
Specific Display	11
Design Feature	8
Other	2

All but 11 of the visitors suggested improvements they would make (see Figure 11). There was some desire for more information on volcanism and geology, but most suggestions related to the presentation of the information. In particular, a number of visitors were keen to see an audio-visual display (there is normally one here but it was not operating during the research), and "multi-media displays". This may also be a reflection that the displays needed to be made more up-to-date. A number of visitors also felt that the setting of the visitor centre would have made it very appropriate to have an outdoor viewing area on top of the building. On a more specific level, suggestions were made about having one large window at the end, that the glass was dirty, there was a need for German text, and for signs to the toilet.

5.4 SUMMARY

The purpose of this research is to give an understanding of the reaction of visitors to the interpretation display area at North Egmont Visitor Centre. The visitors' perspective and subsequent suggestions are the basis for the interpretation of the results. This has involved determining whether the displays have met the expectations of the visitors according to their criteria.

The significant number of local visitors suggests that the displays at the North Egmont Visitor Centre are an important part of the local tourism circuit in Taranaki. From observation, a number of the visitors appeared to come only to the visitor centre spending little time outside in the National Park. Further quantitative research would confirm this but if it is the case it will need to be taken into account in designing new displays. It would have implications in two areas, firstly a need for displays which explain the significance of the mountain and its impact on the Taranaki region, both geologically and culturally, and secondly, to have displays which allow local people to orientate visitors, and which create a basis for dialogue rather than more passive reception.

Explanations for the number of local visitors include the centre's comparatively close proximity to a city - New Plymouth, that the centre is at the end of the road, that the centre is a good place to view the most significant natural feature in the area - Mount Egmont/Taranaki, and that the centre has a cafeteria. (It should also be noted that the research did include two days of a long weekend which may have attracted more local visitors.)

That so many visitors came to "visit the displays" would also have been a factor in the comparatively long mean time of 13 minutes spent in the display area.

Visitors did not work their way around sequentially (although the "flow" was from the stairs to the top window). There was a lot of selective viewing, with visitors passing some displays and spending considerable time at others. This pattern is consistent with research on museums, suggesting visitors give their visits their own order and meaning.

The least popular displays were those on the final ramp and this may reflect the proximity to the summit view, and that for nearly all visitors this was near the end of their visit. It is interesting to note a similar pattern of display use at the

Haast Visitor Centre where the design of the corridor is similar. However, a number of visitors liked the way these centres are set out.

When visitors stopped at the displays many spent time going through all the data presented, including reading all the information (except on the **Taranaki Graben** display). This is consistent with the number of visitors who commented that the displays were interesting and informative. These concepts, along with specific mention of how educational the displays were, supported the observation that many of the visitors came to the displays with the intention to "learn" something, and felt that the displays at North Egmont Visitor Centre had enabled them to achieve this.

The researchers also observed a lot of "teaching" and discussion based on those displays such as **Mountain Boundary**. Unfortunately, this was often incorrect interpretation highlighting the need for research on whether the educational messages in the displays are being correctly received.

The emphasis on "being informed" and "learning something" is consistent with visitors who are coming only to visit the displays rather than as part of a visit to Egmont National Park, or to get information.

A number of families visited the displays, and the centre was seen by one visitor as a place where "all schools should bring in classes". However, few displays were oriented to children. In tracking and timing parents, it became obvious that their enjoyment was curtailed by the fact that the children were not captured by the displays, although one parent did say that the style of the centre meant she did not have to worry about the kids running around and damaging it! These factors would point to the need for some displays to be specifically oriented to children and for multi-layering of information on the other displays. The need for multi-layering is further supported by the range of times that visitors spent at displays, with some spending a long time and others quite short periods.

Few comments were made about the affective experience. Visitors appeared to view a visit to the centre as having an educational purpose and if they learnt something they were quite satisfied. There appeared to be little desire for an enjoyable or exciting experience beyond what is presently there. This goes some way to explaining the high level of satisfaction of those visiting the centre. However, it also reflects that those who visit are those who are already interested in learning and raises the possibility that those wanting alternative experiences are not coming.

The range of information covered by the displays seemed to satisfy most visitors, except for the need for some more effective information and presentation of the volcanic land forms.

Visitors had a considerable range of comments to make about the presentation. The three dimensional models, overlays, and lithographs all received positive comments. However, the writing, especially on the **Taranaki Graben** was seen as too small and detailed. This was confirmed by observation, where the three dimensional models in the display were viewed by many visitors, including children, who had little or no idea what they showed. They were, however, the source of considerable conjecture! A similar pattern of confusion and conjecture was observed at the **Egmont-A Climate Maker** display.

The age of the displays "very 70's", the wear and tear, and the dated styles of the displays, such as the volcano erupting, were commented on by visitors. There was a clear desire for more audio-visual and interactive displays. The audio-visual display in the centre had not been working for some time prior to the research, but has now been repaired.

The cafeteria and its noises and smells adds a dimension to the atmosphere at North Egmont which was not evident at other visitor centres. In particular, the music from the cafeteria was commented on by visitors as being very pleasant and with the music playing visitors appeared happier to talk at a normal level rather than the library like silence which pervaded some of the other visitor centres when the number of visitors was small.

The displays at North Egmont appear to be attracting a greater range of visitors than other centres, although further quantitative research is needed to confirm this. In particular, visitors came with a wide range of "previous knowledge". Displays at North Egmont will need to cater for this range if the educational messages that are intended by the displays are to be communicated successfully.

FIGURE 11 RESPONSES TO QUESTION FIVE (NORTH EGMONT)

Q5 If you were the developer of these displays, how would you improve them?

INFORMATION

A1 More on explanations of structures of volcanoes, terminology. Bigger model of mountain - rock forms. Needs improvement on windows.

A5 Northern Hemisphere comparisons. Information on Mt Egmont eruptions. Good to have something to look at and take away.

A10 Layman's description of volcanics/geology. Pictures/photos of geological features with explanations of how they occur, e.g., Humphries Castle.

A47 Need for information on different parts of the mountain - model - relations to distance.

T2 Would like more information on summit routes - a "you are here" and orientation of things like roads on the scale model shown more clearly (named).

A9 Information on danger of mountains.

A33 Clearer information on where walks are, e.g., an aerial map - more "working" things - a bit more dramatic action - more people, history, old photos.

A39 More information on walks - what you see and how you get there. Things you can pick up and use - good for grandchildren.

A43 More on bird life. Description of impact of introduced species.

A24 Something more on animal life. Encourage schools to use facilities - send invites (7-12 year olds).

PRESENTATION

A8 Use push buttons, lights to show where things were on a model of the mountain.

A6 Video - trip to top. Go outside - viewpoint. Lighting.

A12 Improve sequencing. Audio-visual. Ranger walks/talks.

A15 Get audio-visual working. A45

A17 Audio-visual/slides.

A18 Interactive - multimedia displays - pushing buttons for audio or video explanations.

A25 Audio-visual display - historical theme of volcanic formation and another on things to do in the park.

A19 More signs and distances (not really on displays) of how to get here - orientation to mountain from New Plymouth.

A20 Larger model of mountain showing huts and walks so you can walk around it and identify things.

A38 Some sort of audio-visual - use CD technology - good quality sound and picture - building of mountain and fauna and bird life - more on bird life.

A48 Volcanic processes more graphic (walk into something dark). Audio-visual show - 10 minutes or more. Handling of rocks etc., pick up and play. For children
lower some of the things or a step.

A27 Short captions - mythology and legend information - TV/video for children on volcanoes, earthquakes and wildlife and science and nature - something quick.

T1 More lights. Touch some of the rocks from the volcano.

A26 Open it up more - more access to the outdoors.

A30 Roof top look out - 360°C view.

A42 A big set of powerful binoculars (put a coin in) on the top and out to plain.

A33 Roof top conservatory - open - awesome view. A little mountain to demonstrate volcanism. What would be the effect on the surrounding region.

A36 Trim trees outside - so did tie in with outline. Where are the tracks - map or model of mountain.

A6 Improve end - glass dirty.

A9 One big window rather than three sections in upper viewing window.

A31 More up-to-date looking.

A49 Too much at present - no one person can see all the views. Make it more seasonal - have moving displays - coloured photos need reprinting.

All German text.

A40 Signs to toilets. Like to have a working audio-visual about the mountain.

6. Evaluation of the Interpretation Displays at the Punakaiki Visitor Centre

6.1 INTRODUCTION

Punakaiki Visitor Centre is situated on the main West Coast Road between Greymouth and Westport. Across the road from the entrance to the Visitor Centre is the entrance to the Pancake Rocks walk.

The Punakaiki Visitor Centre is entered through a double door. Straight ahead and to the left is the retail section and the information desk (see Figure 16). The display area itself consists of an "entrance area" which includes the displays **High Jagged Peaks, Beyond the Cliffs**, and **Edge of the Land**. This is the only part of the display area that can be seen from the main entrance, or for that matter from the retail section and information desk. After passing through the entrance area the rest of the displays are in an approximately square room. To get to the displays the visitor has to go either down the steps or a ramp, into the body of the display room. One display, **A Coastal Route**, is actually on a wall next to the ramp. The room receives no natural light, the one window that was put in on the architects plan has had to be covered up because too much light was affecting the showing of the audio-visual.

The research was carried out on two occasions, the 9th and 10th December, and 26th and 27th of December, 1993. The first period was described by staff as "quiet", the second as "very busy".

Positive Reactions

- Audio-visual.
- Interactive attracting visitors.
- Interactives popular with children.
- Geological displays popular.
- Photographs and their presentation liked.

Negative Reactions

- Failure of first displays to lead in visitors.
- Congestion at entrance.
- Amount of non-interpretive material.
- Language level difficult at times.
- Interactives failed to "hold" visitors.
- Room design appears to put off visitors.
- Short time spent in the display area.

6.2 VISITOR TRACKING

The display area at the Punakaiki Visitor Centre was identified as having 15 different displays (see Figure 16). However, three of these, **Attractions, Stand**, and **Brochures** (the researcher's terminology) were not interpretation displays. **Attractions** and **Stand** included information on activities in the local region. Some of the material was from the Department of Conservation but the rest was information and advertising from private operators in the area. **Brochures** is a stand of private operators' information brochures, particularly about the West Coast, but also including information from operators throughout New Zealand.

Visitors were randomly selected as they cross an imaginary line at the entrance to the displays. This caused some problems at Punakaiki. Firstly, a number of visitors crossed the "line", glanced around, and walked back out. Secondly, the **Attractions** display drew a significant number of visitors to it, a number of whom then left without going to any of the other displays. A decision was made not to include these visitors in the research.

The design of the Punakaiki Visitor Centre means that the audio-visual display is an integral part of the display room, with a screen that takes up 2.4 metres of one wall. Large steps run across in front of the screen and are used as seating. This design, coupled with a darkened room, meant the displays were not used when the audio-visual was playing and therefore tracking could not be carried out. It should be noted that no visitor was observed looking at the displays when the video was playing even when, at one stage, the lights would not go off. During the second research period, the initial sound of the audio-visual attracted a number of visitors from the retail section to watch it, but from observation most left at the end of the audio-visual.

The sample size was 43, including 39 adults, three teenagers and one child. The length of their visits ranged from 30 seconds to 17 minutes, therefore data collection proceeded at uneven rates. Seven visitors who were being tracked when the audio-visual started, were continued to be tracked through and after the audio-visual had finished.

Findings

The two different time periods of this research demonstrated different samples of visitors. The 9th and 10th December sample had a much higher proportion of overseas visitors. The 26th and 27th December saw more New Zealanders, and families with young children. The number of teenage visitors observed was small.

The mean time spent by visitors was four minutes 30 seconds. The average time was seven minutes, but this reduces to five minutes if the audio-visual is not included in the analysis.

Thirty five of the visitors looked at displays in the display entrance area. Twenty five percent of these visitors did not proceed into the displays in the main room, other than to the Brochures. Once inside, there was a slight preference for a clockwise movement around the room.

FIGURE 13 % OF ALL THE VISITORS TO THE PUNAKAIKI VISITOR CENTRE INTERPRETATION DISPLAY AREA, WHO STOPPED AT EACH DISPLAY.

Karst & Cave Processes	54
Life without Lights	50
Bush	50
Attractions	44
Beyond the Cliffs	44
Edge of the Land	38
The Coastal Route	36
Posters	35
Brochures	29
Petrel	27
High jagged Peaks	25
Video	15
Stand	11

Figures 13 shows the visitation pattern; the most frequently visited displays being **Karst and Cave Processes, Life Without Lights, Bush**, **Attractions**, and **Beyond the Cliffs**. When the data for times spent at the displays is considered, **Karst and Cave Processes**, and **Life Without Lights** were the most popular of the interpretation displays.

It should be noted that on average 25 percent of the visitors total time spent in the display area was at **Attractions, Stand**, and **Brochures**. Given that those who went just to the **Attractions** stand were not included in the sample, this display would have to be regarded as the most popular.

6.3 FORMAL INTERVIEW OF VISITORS TO THE DISPLAY AREA

Findings

The one-on-one semi-structured interviews were carried out with a random sample of 25 visitors. Of these, 13 were female and 12 male. Thirteen of the sample were from overseas. Figure 14 provides a summary of visitor responses.

The small sample size at Punakaiki reflects the number of mis-starts to the tracking and timing, the influence of the audio-visual in putting off visitors entering to look at the displays when it was operating, and that at times there were no visitors in the display area.

One third of the visitors interviewed explained their reason for visiting such as "happened to come in", "parked on this side of the road", and even "for a cup of coffee". A number commented that it was not as well advertised as could be. This, however, may have been rectified by the erection of a new sign on the outside wall the day after the research was completed.

FIGURE 14 SUMMARY OF RESPONSES FOR PUNAKAIKI VISITOR CENTRE

What is the main reason you came into the visitor centre today?

Information	8
To visit displays	9
Dropped in/passing	8
Other	6

Did the centre meet your needs?

Yes	18
No	1
Partially	1
Not appropriate to ask question	5

What did you like the best about the displays in the centre?

DISPLAY TOPICS

- Life Without Lights	4
- Geological Displays	6
- The Coastal Route	2

SPECIFIC PRESENTATION STYLE

- Photographs	10
- Interactives	5
- Video	2

OVERALL PRESENTATION

- Presentation effective	4
- Space effective	1
- Colour effective	1

What do you like the least?

Specific display	6
Design feature	1
Other	2
Nothing	16
No answer	0

Visitors felt the centre met their needs. Often these were addressed by the desk staff, but the displays were also commented on as being very useful, especially in answering questions visitors had about the geological structure of the region. The overseas visitors were particularly interested in the geology and geophysics of the region.

The **Karst and Cave Processes** and **Life without Lights** were the most liked displays. Visitors liked "pushing the buttons to see", "hands on stuff, the models", "flashing lights", "interactive section" as well as "the information about the geology", in that they were "educational for kids" and "lifelike". The **Coastal Route** display was enjoyed by the visitors from the West Coast in particular.

Considerable positive comment was made about the photos. These were seen as "important" and effective because "[you] can understand them". The three dimensional presentation style of the photographs was also liked. Visitors commented favourably on the overall layout of the display and that they were "spaced out and had plenty of room to move". Of the visitors who watched the audio-visual, a number mentioned it as being very interesting.

Concern was expressed over the difficulty in operating the **Karst and Cave Processes** interactive, with confusion over pushing the buttons and getting the lights to work. Concern was also expressed over the language level of a number of displays. In discussion about the displays in the entrance area, visitors said they "read half of it but was put off by the dialogue" and that there were "too many specialist words". This was also reflected in the praise of the photos - "can understand them". A number of the overseas visitors, who were speakers of other languages, found the specialist scientific words difficult, "don't want a translation just simpler words".

Six of the sample felt that they had "just zipped around" and therefore felt they couldn't comment on aspects they had found confusing.

All but six of the visitors suggested improvements they would make (see Figure 15). These related primarily to the present displays and, in particular, the need for more, and bigger, photographs. There was also a request for the labels of photographs to be on or near the actual photographs, rather than in the text. This comment was often made in relation to the fact that the text was not being read. Further interactives were also suggested, such as "being able to handle pieces of rock".

One comment suggested the need for a view. No visitors mentioned removing present displays but more information on the scientific explanations of rock formations, local walks and a map or aerial photograph for orientation were suggested.

6.4 SUMMARY

The purpose of this research is to provide an understanding of the reaction of visitors to the interpretation display area of the Punakaiki Visitor Centre. The visitors' perspective and subsequent suggestions are the basis for the interpretation of the results. This has involved determining whether the displays have met the expectations of the visitors according to their criteria.

The tracking and timing of the visitors to the Punakaiki Visitor Centre would have given a more effective understanding of visitor use if it had picked up visitors as they entered the centre rather than just the display area. This would have enabled a more comprehensive understanding of use of the visitor centre, including the influence of the entrance area, and the video. It would have also

have given a more useful analysis of visitors' experience in the centre, which would include their time in the retail section, information desk, toilets etc., as well as in the display area.

The entrance to the Punakaiki Visitor Centre is dominated by a wall of tee shirts. The staff desk and the rest of the retail section are to the left and are easily seen, and are well lit by natural light. In contrast, the entrance to the displays is dark, and many visitors appeared to be unsure what the entrance was to. As the **Attractions** stand is positioned at the entrance to the displays it at times created a feeling of congestion even though the rest of the display area was relatively empty. This appeared to put some people off entering. Better signage, improved lighting and a more "open" entrance area would help overcome this. It may also be worth exploring one visitor's suggestion that the display area should have a view. The original design included a long, thin window which gives a view to the Paparoa Ranges. Such a window would also let in natural light. This window was boarded up, as apparently it let in too much light during the showing of the audio-visual. However, it may be worth finding a way of automatically curtaining it off during the showing of the audio-visual.

Some visitors commented on the amount of non-interpretive information in the display area and how this detracted from the displays, something which is supported by this research.

Most visitors started by looking at the displays around the entrance. From observations and interviews, this mostly involved looking at the photographs. Few visitors read the text, although a number did start and said they were put off by the language level.

That 25 of the visitors went no further would appear to reflect a lack of response to the first displays which failed to "lead" visitors on. (In a three hour survey of the display **Edge of the Land,** which is about the **Pancake Rocks**, nine visitors glanced at it, six spent less than 30 seconds and three spent between 30 seconds and 60 seconds at the display). The popularity of the photographs, and the short times spent at these displays, the negative comments about the writing, and the lack of reading which was observed, suggests the need for displays with a high visual content.

The dark room, the large steps or ramp and that the front area is rather like a stage may also have acted as deterrents.

The audio-visual is an integral part of the display and was popular with visitors, with up to 18 people watching it at any one time. However, it was observed that visitors were confused as to how and when it would operate, some sat waiting for a considerable period of time. Evidence both from the tracking and timing, and from observation, indicated most visitors left after they had watched the audio-visual display.

Though only one child was included in the sample, a number of children were with families who were visiting the display area, especially on the 27th December. They were particularly attracted to the interactive but quickly lost interest and appeared to be confused over the lights. Those who spent some time were with adults who explained how the displays operated, and what it

was showing (see Individual Display Evaluation). Children often used the microscope on the **Life without Lights** display.

The geological displays were popular both in numbers of visitors and from the comments made. They were especially popular with the visitors who were looking for more information and explanation. Some link from this to why the area has been put aside as a National Park would be appropriate.

Staff commented on the quiet of the room. Later in the research they put on music and this did seem to relax visitors and create the atmosphere for discussion between them.

Time spent in the display area was quite short. The interactives in particular were very effective in attracting visitors but failed to hold them. This appeared to be partly because of problems with the operation of them, and partly because very few people were attracted to read through the amount of written material (see Individual Display Evalution).

The short times spent in the display area, that many people were happy to "zip" around, the attractions of the photographs, and observations that much of the text was not being used, implies that many of the visitors were looking for a brief overview of the topics covered by the displays. Displays would have been better with shorter captions and more photographs. However, as some visitors were looking for further explanation of the geology of the area there is a need for layered information on the topics in the displays.

FIGURE 15 RESPONSES TO QUESTION 5 (PUNAKAIKI)

Q5 If you were the developers of these displays, how would you improve them?

INFORMATION

A1 Include pit sawing mills - milling/axe/cross-cut sawing. Needs information on times of tree growth to get across the idea of conservation. Horses and wagons.

A4 Would like a display of the walks. Photos - captions would be useful. Indexing to a map.

A5 More scientific content and geological information.

A29 A little more scientific information and impressive photos.

PRESENTATION

A2 Group brochures together. Advertising - could easily miss centre. Didn't know it was a DoC centre. General message about who runs the centre.

A9 Put a map in, or aerial as an orientation to the pictures, geology etc.

A32 Big display showing where all of the walks are - a large map showing all the features of the area and where they are.

A27 Brighten colours and more pictures. Mentioned that other centres that really attracted their attention had better views from them.

A37 Good to have quiet area to read and enjoy.

A38 Pieces of rock - interactive.

A8 Needs something on wall by shop.

7. Evaluation of the Interpretation Displays at the Whakapapa Visitor Centre

7.1 INTRODUCTION

The Whakapapa Visitor Centre is situated in the Whakapapa Village on the flanks of Mount Ruapehu. It is alongside the access road to the Whakapapa Ski Fields.

The entrance to the Whakapapa Visitor Centre is a large room which includes the information desk, retail section and information/displays on the walks around the mountain. The display area is entered off this room (see Figure 21). The Whakapapa Visitor Centre includes two audio-visual displays which are separate to the other displays.

The display area receives no natural light. The displays themselves are presented on the outside walls of the room with the internal walls having seating, and a display of Malcolm Warr prints, which are for sale. To get to the toilets and one of the audio-visuals visitors must pass through the display area.

The research was carried out on two occasions, 22 January 1994 and 2, 3 and 4 April 1994 (this was the Easter period). Although the first period was at the end of the school holidays and was a Saturday, it was comparatively quiet compared with the Easter period.

Positive Reactions

- Photographs.
- Paintings.
- Skiing display.
- Writing easy to understand.

Negative Reactions

- Short visitation times.
- Some displays with a low level of use.
- Seismograph confusing.
- Congestion at entrance when busy.
- Little for children.

7.2 VISITOR TRACKING

The display area was identified as having 18 different displays (see Figure 21). Sixty four visitors were randomly chosen as they crossed an imaginary line at the entrance to the display area. This caused some difficulties at Whakapapa. Firstly, some visitors were just wanting to use the toilets. If the chosen visitor proceeded straight to the toilets, they were not included in the sample. Secondly, some visitors went straight into the audio-visual and were therefore

FIGURE 17 % OF ALL THE VISITORS TO THE WHAKAPAPA VISITOR CENTRE INTERPRETATION DISPLAY AREA WHO STOPPED AT EACH DISPLAY.

Seismograph	62
Taupo	58
Change	53
Zonation	49
Skiing	47
Tourism	41
Problems	38
Later History	36
New Arrivals	36
Climate	36
Tongariro	35
Gift	32
Exploration	30
People	30
1987	21
Eruptive Activity	19
Paintings	13

not included in the sample either. This may have had an effect on the results, but from observation many of these visitors did not proceed into the display area after they had seen the audio-visual. If visitors in the sample went to the audio-visual after visiting displays, tracking continued while they were at and after they left the audio-visual.

The length of the visits ranged from one minute to 49 minutes, therefore tracking proceeded at uneven rates. The design of the visitor centre did not make tracking easy, but because of the large numbers of visitors, few of the sample realised they had been tracked.

Findings

The mean time spent in the display area was five and a half minutes (the average time spent by visitors was seven and a half minutes).

Nearly all the visitors started their movements through the displays from the entrance end. However, few (19%) stopped at the first display, **Eruptive Activity**, with most going to the subsequent displays.

Figure 17 shows the visitation pattern; the most popular displays being **Seismograph**, **Taupo,** and **Change**. The **Seismograph** display had the second to longest average visiting time of one minute, 20 seconds. It should be noted that the two displays - **Seismograph** and **Taupo** - are alongside each other and could be analysed as one display (see Individual Display Evaluation). If this is done, the popularity of these displays is even greater.

The **Skiing** display had a different pattern of usage to the other displays. A number of visitors seemed to have come into the display area to see it in particular. It also held visitors for the longest average time, over three minutes.

The least popular displays were **Eruptive Activity, 1987, People, Exploration**.

7.3 BEHAVIOURAL MAPPING

Behavioural mapping was used at Whakapapa because the high number of visitors enabled an understanding of the use of the whole centre to be developed. The mapping was carried out at approximately 30 minute intervals over the two days of Easter Sunday and Monday. This was a busy time and the public holiday would have resulted in many New Zealanders in particular coming to the Whakapapa area for recreation purposes. Results of the behavioural mapping are shown in Figure 18.

FIGURE 18 RESULTS OF BEHAVIOURAL MAPPING FOR WHAKAPAPA VISITOR CENTRE

Entrance Foyer	22	
Walk Displays	84	
3D Model	77	
Retail Section	110	
Desk	85	
Change	25	
A Place to Live	47	(32 at Seismograph)
Zonation	7	
History (1)	38	
History (2)	9	
Skiing	34	
Seating	5	

7.4 FORMAL INTERVIEWS OF VISITORS TO THE DISPLAY AREA

The one-on-one structured interviews were carried out with 49 visitors across both time periods. Of these, 35% were from overseas. However, this will have been influenced by the number of New Zealanders visiting over the Easter research period. The sample group, including those who contributed to the interviews, was 60. Figure 19 provides a summary of visitor responses.

The main reasons why visitors came to the centre was for information, and to visit the displays (including the audio-visuals). A number of visitors mentioned that they had come in for both information, and to look at the displays. Often the comments were quite general, "An experience, to get information on the area", "General interest, and knew the visitor centres have information".

The general comments meant the question on whether the centre met their needs was not so relevant. However, of those who were asked, all but two felt it had.

In responding to the question about what they liked the best, visitors mentioned the history displays, volcanic displays and the **Skiing** display.

The photographs were the most liked presentation style. However, the three dimensional model was the second most mentioned (this model is situated in the entrance foyer and was not included in the analysis, however from observation it was used by large numbers of visitors, especially children). A number of comments were also made about the effectiveness of the paintings and the colours used and that the visual presentation was very good, "photos and painting mix, uses a variety of media".

The most commented on overall feature was "not too much heavy reading" with visitors feeling you "don't have to read much, short, simple and to the point explanations".

In describing what they liked least about the displays, 55% mentioned nothing. Others mentioned various displays and styles but no pattern was evident except for the **Seismograph**, and concern over too much writing.

Sixty percent of visitors found nothing confusing. However, visitors did mention problems with "some sentences and words hard to understand. The **Seismograph** was the only display that was mentioned.

Nearly 70% of visitors had suggestions for improvements (see Figure 20). The most common theme related to the presentation of the displays, with "moving displays", "more interaction", and "hands-on" as the methods that visitors would use. Ideas from other commercial displays, "Lyttelton Time Tunnel", and the "Sydney display" were suggested.

The only displays which received suggestions for improvement on more than one occasion were the volcanic ones including one child's idea of "focus on one event in volcanic history like you have with human history, for example an eruption".

7.5 SUMMARY

The purpose of this research is to give an understanding of the reaction of visitors to the interpretation display area of the Whakapapa Visitor Centre. The visitors' perspections and subsequent suggestions are the basis for the interpretation of the results. This has involved determining whether the displays have met the expectations of the visitors according to their criteria.

The results of the tracking and timing of the display area at the Whakapapa Visitor Centre must be tempered by the influence of the centre's two audio-visual displays - **Sacred Gift** and **Ring of Fire**. **Ring of Fire** gives a 20 minute coverage of the volcanic processes operating in the North Island. It attracts a significant number of visitors, many of whom do not go to the displays after seeing the audio-visual. The relationship between the audio-visuals and the use of the displays needs further research. The tracking and timing would give this data if it was carried out for the whole centre rather than just the display area.

FIGURE 19 SUMMARY OF RESPONSES FOR WHAKAPAPA VISITOR CENTRE

What is the main reason you came into the visitor centre today?

Information	25
To visit displays	19
Dropped in/passing	10
Other	3

Did the centre meet your needs?

Yes	26
No	0
Partially	2
Not appropriate to ask question	19
Other	0

What did you like the best about the displays in the centre?

DISPLAY TOPICS

- Volcanic Activity	10
- History	9
- Skiing	6

SPECIFIC PRESENTATION STYLE

- Three dimensional model	10
- Photographs	16
- Paintings	4
- Colour	3

OVERALL PRESENTATION

- Writing appropriate	9
- Easy to follow	6
- Mix of diagrams and photos	
- Visually effective	3
- Layout simple	1

What do you like the least?

Specific display	11
Design feature	9
Other	4
Nothing	16
No answer	9

The Whakapapa Visitor Centre was busy for both research periods, but particularly during the Easter period. From observation, the number of visitors who came into the display was considerably less than those who came in the entrance area. At times there would be few visitors in the displays but the retail area and desk would be very busy. The three dimensional model of the mountains and information on walks in the foyer were well used.

When the centre is busy, the present design creates congestion around the desk and retail area. This is evidenced by the behavioural mapping results (see Figure 18) which reflect the popularity of the retail section in particular. However, this area has not only the retail and desk visitors, but also is the area all visitors entering and leaving the audio-visual **Ring of Fire**, and entering and leaving the displays must pass through. The entrance to the staff area by the retail section also adds to the feeling of congestion.

The retail area is also a source of considerable information, one visitor suggesting it was better than the displays for interpretation! There is a need to create a more welcoming entrance into the display area and to explore alternative uses of the foyer space.

The length of time spent in the displays was comparatively short. However, this will have been influenced by the audio-visuals. A number of the "longer stay" visitors appeared to go to the **Ring of Fire** audio-visual as an alternative to the displays.

The tracking and timing, and behavioural mapping, showed that the displays on the far side of the display area were not popular. Their position, tucked around the corner, that they follow the historic displays, and that the **Skiing** display entrance goes off this side, all appear to contribute to this. This "dead end" area would benefit from further development to attract visitors to it. It would be an area suitable for more in-depth explanations of volcanism, or an area for child orientated displays.

The tracking and timing, and observation, showed a lot of selective viewing, with visitors quickly glancing at some displays and spending considerable time at others. Some visitors commented that sections of the display need to be even more discrete and digestible. Some of the displays, for example **Change**, appear to present the information sequentially, but few visitors viewed it that way, choosing to order information on their own terms.

Some of the longer stay visitors did, however, appreciate the logical sequence, highlighting the need to cater to both types of visit in the design process. Headings on the displays which give a hint towards their educational objective, would be beneficial.

The behavioural mapping, and observation, showed few people using the seating in the display area. Though some visitors commented on the need for it, there appears to be the potential to use some of the internal walls for interpretation displays.

The **Succession** display, which is well situated to attract visitors (see Figure 21), was not successful in either attracting or holding visitors. Only six stopped and of these only two spent more than 35 seconds at the display. The large amount of information that had to be got through to understand the display appeared to put people off. The size of the display meant that it was difficult for

visitors to understand the painting without standing back and few visitors did this. An individual display evaluation would further help explain the lack of holding power of this display.

The displays at Whakapapa Visitor Centre were seen as being easy to understand and to use. Few negative comments were made about the writing, and the positive comments made suggested it was at an appropriate level. The presentation style of the use of both photographs and paintings was popular and regarded as effective.

The **Skiing** display had a quite different pattern of visitation from the other displays. Just under half the visitors went to this display, but their visits were longer, averaging over three minutes (which was longer than any other display in the five visitor centres in this research). Visitors commented that they liked having the "real thing" presumably referring to the models dressed in different ski fashions. This did attract visitors, however a lot of reading was observed which accounted for the long times spent at the display. Interestingly the writing was quite detailed and small, but those who chose to do it were prepared to spend the time going through it. This display was successful in presenting information on two different levels for two different groups of visitors. The tracking and timing showed that a number of visitors came just to this display, so it may be attracting new visitors to the centre.

Visitors' suggestions on how they would improve displays concentrated on the presentation style. Although the photographs were popular as a presentation style, the support for interactives, three dimensional, and hands-on displays suggests more variety is appropriate. This was supported by observation, tracking and timing, and behavioural mapping where the one "moving" display - the Seismograph - was popular (see Individual Display Evaluation). Interestingly, a number of visitors made comparisons between the Whakapapa Visitor Centre displays and commercial presentations. This centre appears to be attracting a greater range of visitors than other centres. Though further quantitative research is needed to confirm this, it points to the need for this range to be catered for in the displays, and the need for displays which appeal to more than just the information and educational needs of visitors.

Whilst at Whakapapa, the researchers were often asked questions about the volcanism displays in particular (the desk staff confirmed they also often received such questions). There was a genuine interest and need for more information from some visitors. This, coupled with the amount of mis-information and incorrect messages that were being received, highlights the need for individual displays to be evaluated. It also raises the possibility of having interpreters at Whakapapa during the busy times, as the desk staff in particular were often too busy to address such questions.

Over the time of the research, a number of families visited. There was little in the display area to attract children, though the three dimensional model in the entrance foyer was popular. Some visitors commented on the need for educational type displays for school groups. Staff confirmed that Whakapapa receives a number of these groups and information at this level would be a useful addition to the display area.

FIGURE 20 RESPONSES TO QUESTION 5 (WHAKAPAPA).

Q5 If you were the developer of these displays, how would you improve them?

INFORMATION

A10 More about volcanic activity. More about plants. More identification of plants - had seen them and wanted to know what they were.

A39 Information on line of volcanoes - how one affects the other. Educational thing for New Zealanders - fine as it is. Continuous showing of video - shy about asking.

Cl Focus on one event in volcanic history like you have with human history, for example an eruption.

A2 More "live" things, e.g., samples of plants, more hands-on especially for children.

A8 More posters. Identifications of flowers in pictures, captions with names of plants.

A16 Names of flowers - not mentioned on photos. Fraction more information would be good, e.g., climate display, big picture but sketchy information. More eye catching. It's quite "flat" - bring things out to the public more. Better flow, but good really.

A31 Historical theme - from start to human use. Idea of how came about.

A33 Perhaps translations, instruments to watch volcanic activity.

A34 German words for plants and flowers.

PRESENTATION

All 3D display - would like the pictures lit up all the time - distracting to have to push buttons to see pictures. Samples of things, e.g., rocks.

A61 More interactive. Audio stuff. More sensory things. Ongoing lava flow and with plate moving. Samples of volcanic materials people can handle. Guided tours.

A50 Feel the ash - interactive, 3D.

A12 Have "events" "sights/sounds/smell etc" - refer Lyttelton time tunnel.

A13 More of the same - like Waitomo Museum. More information - choice of information levels.

A15 Use a variety of colour/lighting - all the same toning and lighting is a bit wearing.

A36 Make parts for more sophisticated audience - bit like being on "a school trip". More explanation and more social history. Liked the social history - like more about people - needed to be extended in some way.

A41 Display with chronological time - which followed the same wall.

A42 Model of one mountain - photos behind where fitted in in relation to each other. Photos with lights.

A46 Computer reconstruction - lava flowing, volcanoes erupting. A little high tech.

A47 Put a film together to back up static displays - may even be a market for this. To see progression how its developed over years. Add a depth. In ski display - bit more background on the different eras, e.g., events at that time. Develop idea of technology and change.

A51 Moving displays, more interaction, as per video, on displays (as per hands on museum).

A57 Tunnel - moving escalator, visual graphics, themes, e.g., past, present, future. Displays light up. Enlarging area.

A53 Hands on interaction, especially for children.

A54 Hands on - for all ages - rocks, pumice to touch. Realistic simulations like the ski display.

A55 More touch/interactive displays. Variety of display techniques rather than just photos/writing.

A52 Compared with Sydney display - need audio visual to show processes and features. Writing too much. Sections need to be discrete and digestible. Information okay. Presentation needs to be developed.

A58 Lot more photos. Button pushing - this would have kept one here and reading.

A60 Logical sequence. More models.

A4 Add something for little kids. Something that's fun to look at but still educational.

A32 Incorporate children's section - how a volcano works in childrens' terms. More information. Summary of history - both natural and human history.

A5 Summer lectures. More things to touch, e.g., rocks, plants. Touchy/feely things especially for school groups.

A56 Generally okay but would appreciate German interpretation of some text.

T2 More details on walks, grade of difficulty.

8. Individual display evaluation

8.1 I NTRODUCTION

This research was applied to two individual displays to trial the evaluation methodology, and to demonstrate its usefulness. Such evaluation would usually be carried out if the display appeared to not be working as well as was hoped, if up-dating or improvements were to be carried out, or to ascertain the effectiveness of the techniques used in the display to communicate their message.

8.2 " TAUPO" AND "SEISMOGRAPH" DISPLAYS AT WHAKAPAPA VISITOR CENTRE

These displays include information about the Taupo eruption, previous eruptions in the area, eruption styles, and the monitoring of present eruptions. The researchers felt the two panels related to each other so they were evaluated together. Presentation styles include photographs with captions, two dimensional model of the comparative size of the Taupo eruption, and a seismograph which is recording information from the Dome Shelter and Whakamaru.

Observation

Twenty three randomly selected visitors were observed as they interacted with the display. The main behaviours observed were:

Looking at seismograph - 8
Looking at the whole display - 7
Looking at models of eruptions - 5
Looking at photographs - 3
Reading captions - 3

What did you like best about the display?
The models - 14
Seismograph - 9
Photographs - 4
Paintings - 2

What did you like the least?
Seismograph - 3
Text hard to read - 3
Other - 4
Nothing - 11

Do you find anything confusing?
Technical language - 2
Seismograph - 2
Nothing - 19

What do you think the designer was trying to show with this display?
Power of volcanoes.
Power of volcano and unpredictability.
Working of volcano, understanding of magnitude of volcano and what happens on eruption.
Size of volcanic activity enormous in past - through to present features.
Size of eruption and that it still might happen. Seismograph.
Volcanic activity.
Volcanic activity in the area.
What has happened in this area compared with other areas in the world. Volcanic activity.
Size of eruptions.
Effect and size of earthquakes and volcanoes.
Size of eruptions.
Visual difference in size and power of eruptions.
Changes (in landscape).
How powerful activity is. Don't take "it" for granted as "it" will happen.
Volcanic action, past and present.
Eruptions.
How mountains were built.
How dangerous volcanoes are.
Violent area and still active.
Eruptions versus sizes.
Eruptions, what can happen and how it happens.
Show volcanic activity.

What do you think about the words and the pictures in this display?
Well balanced - 4
Good - 4
Too many words - 3
Technical words need explaining - 3
Needs bigger pictures - 2
Words too small - 2
No sequencing - 1

Q6 If you were the designer of this exhibit, how would you improve it?

Information on past eruptions, examples of pin movement in proportion to earth movement, more explanation of seismograph. Laser measurements and information on monitoring and how the alarm system works.
Make it into a story instead of independent facts.
Scale of seismograph - to see extent of movement. More explanation of seismograph, why two readings - location of them. Times of eruptions in past leading to a sequence of eruptions.
Visual - erupting mountain.
Enlarge pictures for more impact.
Sequence numbering as all information is mixed. Aerial photographs to show eruptions. seismograph information up higher as cannot see it. Places where seismograph readings are should be made clear.
Clarify what the display is about. More information on seismograph. Didn't know what two readings were or why they are important.
More explanation for seismograph and its function. More impressive photos to look at.
Emphasis after 1975 would be of assistance.
Words and pictures larger. The Taupo section much more prominent as people relate to it. Colour needs to be brighter.
More interesting layout and space. Record of active movements on the seismograph.
Size of pictures and model increased for impact. Video.
Colourful. Easier to browse. More of stages/sequences.
Make it bigger.
Photos bigger.
Bigger because most active thing in whole park therefore needs to be a focus.
Model to how extent of Taupo lava flow.
More detail and pictures.
More explanation. Seismograph needs explaining and data showing big movements. Explanations better placed.
Working seismograph and explanation of it.

Summary

These displays were chosen for individual display evaluation because they were successful at attracting visitors, but the display was not being mentioned as being liked by visitors (see Evaluation of displays at Whakapapa Visitor Centre).

Visitors observed at the display showed considerable confusion over the purpose of the seismograph in particular. Visitors were interested in its purpose, and it was the source of many discussions. However, some felt it was not working, others were confused over the two needles, and most did not understand the significance of these. A number of questions were asked at the information desk about its purpose, and staff confirmed that this was a regular occurence.

The models comparing the size of eruptions was popular with visitors and seen as a very effective way of presenting this information.

A number of the sample read all the writing. Although there is not a lot of writing there was some confusion over technical words and the physical size of it. Some, which is up high on the display, is very difficult to read for short people. At the other extreme, the label for the seismograph is very low down and was missed by most visitors.

These displays were different to others in the centre as they appeared to have information about the past and potential effects of an eruption of the volcanoes. This idea, along with the physical presence of the seismograph, created interest but few visitors appeared to grasp the significance of the seismograph in the monitoring of eruptions.

The research highlights a number of ways the display could be made more effective for visitors.

These include:

- Explanation that the seismograph is working, what it is doing, and why it is there.
- Clear explanation of the relevance of the seismograph to the monitoring of Mount Ruapehu's eruptions.
- An indication of what the display is about as a frame of reference for visitors.
- Lowering of the top labels.
- Simplification or explanation of technical terms.

8.3 " KAAST AND CAVE" DISPLAY AT THE PUNAKAIKI VISITOR CENTRE

Introduction

This display is situated in the corner of the display area with nearly all the display on one wall, but some writing and diagrams on the right angled wall. See fidure 15. The display includes a model of a Kaast landscape, with a series of photographs above and below it to demonstrate the various characteristics of such a landscape. The model has a series of push buttons which result in a light going on in the model, and the appropriate photographs being lit up when it is pushed. Explanations of the landscape are written around the display.

Observation

Sixteen randomly selected visitors were observed as they interacted with the display. The main behaviours observed those using the display were:

Pushing the buttons - 9
Reading - 4

One-on-One Interviews

What do you like best?
Cross-section - 9
Interactive - 6
Photographs - 6
Lights - 5
Showed location of things - 3

What do you like the least?
Hard to see top photos - 8
Too crammed - I
No indication of where cross-section was - 1
Nothing - 6

Did you find anything confusing?
Relationship between lights and buttons - 8
Nothing - 7
Didn't see top box - 1

What do you think the designer was trying to show with this display?
Different landscapes which make up this area.
The various landscape features of this area - "The Caves".
To show landscape of the area and what is below it.
Confused.
Landscape of West Coast and underground features.
Cave formation, Kaast features.
Process of creation of the area's landscape.
Caving system, formations.
Structure, cross-section, formative processes.
Evolving and creating of the local area.
Cross-section of area "what is happening below the ground?"
Beauty, knowledge, creation, explanations of what is in this area.
Look after the environment as people out to destroy it. View of cross-section underland.
Caves, the processes going on, where parts are to be found.

Did you read the writing?
Yes-6
No-5
Some - 5

Was it clear the way the buttons worked?
Yes - 3
No-3
Took at while to work out - 10

If you were the designer of this exhibit, how would you improve it?
Tell them about things - audio. Words hard to understand. Make it larger. Buttons higher.
Make it bigger. Raise the bottom boxes.
More space. Sequence clearer.
Labelling buttons to indicate which processes they are connected with.
Writing bigger. Water flowing through. Display larger.
Top boxes down to eye level. Show location of cross-section on a map.
Lower top photos.
Instructions on how the buttons, lights, photos are all coordinated.
Buttons marked with instructions.
Make it easier to see which lights are going on when you push the button.
Move buttons out - too close.
Put the button below the picture.
Pamphlet in German.

8.4 SUMMARY

As shown by the tracking and timing results for the Punakaiki Visitor Centre, this display was effective in attracting visitors; however, the average holding time was only just over one minute.

Visitors were attracted to this display because of its interactive style, but also because it had photographs that lit up and a cross-section - the "real thing". A number of the overseas visitors in particular were interested in an explanation of the 'Kaast' landscape and saw this display as able to offer this. A number of families were also observed using the display with adults using it to explain landforms to children.

With families or other groups at the display, its situation in a corner meant it was both cramped and appeared to be intimidating to other users. On a number of occasions visitors were waiting for others to finish at the display.

Nearly all the visitors pushed the buttons, but as confirmed by both observations and responses to the one-on-one interviews, there was confusion over this. Firstly, if visitors stood close enough to the display to push the buttons, the top photographs were out of their line of sight. Secondly, the relationship between the order of the buttons, the lights and the photographs was not logical and caused confusion.

The purpose of the display seemed to be understood by most visitors, although the concept of a "Kaast landscape" was not mentioned. (If the intention of the display was to give an understanding of a Kaast landscape, this question could have been asked as part of Question five.)

Not surprisingly, the suggestions for how visitors would improve the display mostly related to the aspects they had found confusing. These included:

Making the top photographs more obvious by lowering them or moving the buttons out.

Instructions, or re-ordering of the sequence of buttons, lights and photographs.

Make the writing bigger and simpler.

Make the display larger.

9. Summary of the Research

9.1 OVERVIEW

The results of this research showed that those who presently visit Department of Conservation Visitor Centre display areas view them in a positive light, and are very supportive of them. Negative comments received during the research were often prefaced, or followed with statements supporting visitor centres and their displays.

This support caused some difficulties at the start of the one-on-one interviews in particular, in that people were reluctant to be critical. However, when it was explained that the research was asking for their thoughts to contribute to further development of displays, visitors were keen to contribute. The idea of the visitors being consulted appeared to be appreciated by many of those interviewed. This was an unintended benefit of this research.

The research also demonstrated that there are different groupings of visitors at the different centres. The number of local and repeat visitors to North Egmont, and the wide variety of visitors to Whakapapa highlight the need to know about the visitor make up before displays are developed. This points to the need for further research on the present users of display areas, and the need to decide on who the target client groups are - and is it to be wider than the present visitors.

9.2 THE RESEARCH METHODOLOGY

Strengths

The methodology used in this research attempted to give an understanding of the visitor reactions to displays and display areas. The strength of the methodology is the use of a variety of research methods to assess these reactions. This enabled a more holistic view of the display and display areas' performance to be presented. The use of a number of research methods also meant that there was a check against any one method. This enabled conflicting or different responses to be identified and acknowledged so the evaluation could take them into account. For example, at Whakapapa Visitor Centre the Seismograph display was the most visited according to the tracking and timing. This was also supported by the behavioural mapping, and the researcher's observations. However, the display was not mentioned as one which visitors "liked". By using individual display analysis, the reasons became clearer: while the display was seen as interesting, and therefore attractive to visitors, the visitors were confused over what it showed so the experience of visiting it was not satisfying. Other displays showed up as being "liked", for example the Rainforest Walk at Haast Visitor Centre, but the tracking and timing showed short periods of time in the display.

Where the research showed a discrepancy which could not be further explained by referring to the other research methods, conclusions based on the existing information have to be acknowledged as being very tentative.

The research methodology gave a good understanding of how visitors used the display area including the way the visitors used the space, the time they spent there, and which displays were popular.

Both questionnaires gave a good understanding of what visitors enjoyed about the displays and what presentation styles they felt were effective and ineffective.

The specific display evaluation methodologies gave an effective insight into the messages that were being transmitted from the displays, and into the way people interact and use the displays.

Weaknesses

The research did not achieve a very good understanding of the influence of factors other than those in the display area. For example, the influence of the position of the display area in the building, the influence of other displays such as those in the retail section, influence of audio visuals, and toilets etc. was difficult to ascertain. This information would have enabled a more satisfactory analysis of the visitor experience to be made. Such data would have been obtained if the tracking and timing had been for the whole centre rather than just the displays.

In interpreting the data, this research has relied on the presentation of the information received from the visitors. Because there was little information on the aims of the visitor centre or the objectives of the displays themselves, comments on whether the displays had realised their intentions or not were based on the researcher's perception of the intention rather than the developers. Although a basis of this research is that unintended reactions can be accepted as appropriate, the evaluation would have been more useful if it had been able to ascertain whether the educational, behavioural, and affective/experiential objectives of the display areas and displays were being achieved.

The methodology did not elicit a lot of response to the way the displays made visitors feel (the affective reaction). This would appear to be because; the questions did not directly ask for this; the one-on-one interview situation results in respondents keeping to "concrete" issues; many respondents viewed the intention of Department of Conservation visitor centres as "educational", and had no expectations of them being "fun" or "exciting". However, when asked how they would improve the display areas, many of the suggestions included reference to an affective experience. Interestingly, this was often still couched within learning terms, such as interactives being seen as making the "learning more enjoyable".

9.4 SUMMARY OF THE INDIVIDUAL RESEARCH METHODS

Tracking and Timing

- Successful at revealing attraction and holding power of displays.
- Able to make inferences on why visitors are/are not attracted to particular displays.
- Enabled a check against questionnaire answers.
- Minimised researcher influence.
- Relatively time intensive.
- Does not require high visitation to get useful results.
- Easy to train observers.

Bebavioural Mapping

- Not successful when the centres were not busy.
- Useful check on tracking and timing.
- Unobtrusive.
- Time efficient.
- Easy to train observers.
- Useful for collecting data over time.

One-on-One Exit Interviews

- Useful for identifying popular presentational techniques and popular displays.
- Poor technique for eliciting negative visitor reactions.
- Time effective.
- Interviewers require relatively extensive training.
- Useful for collecting suggestions for future displays.
- On a number of occasions more than one person contributed to the answers. This led to good quality answers as visitors' ideas appeared to be clarified in discussion with others, and the one-on-one interview evaluation was less daunting to the visitor.

Questionnaires - Interview Guide For All Displays

Question 1 - What is the main reason you came to the visitor centre today.

This question was effective in giving information for the whole visitor centre, and enabled the reasons for visits to be analysed.

Question 2 - What did you like best about the displays in the centre?

The researchers used the prompt of "this includes presentation styles and actual displays" when asking this question. Effective results were gained with many answers including four or five examples.

Question 3 - What did you like the least?

This question was not very effective. Most people did not answer it although they nearly all gave examples of improvements they would make. Reasons for this include: that the question was interpreted as "what do you not like

about the displays"; that the visitors were unhappy about the negative criticism of the Department of Conservation visitor centres which, as this research demonstrates, are seen by nearly all as being a 'good thing". It may also reflect a cultural reluctance by visitors from New Zealand in particular to knock a concept such as national parks.

Question 4 - Did you find any, of the displays confusing?

-This question was limited in its effectiveness. It appeared to be interpreted as a "test" of the interviewee, rather than the displays. It was also difficult to answer for those who had only a cursory glance around the centre as for example they may not have anything.

Question S - If you had the time, the money and the job of developer of these displays, how would you improve them?

-This question provoked a lot of discussion and resulted in a considerable number of ideas.

Questionnaire - Interview For Specific Display

Question 1 - What did you like best about this display?

This question was very successful in getting responses.

Question 2 - What did you like the least?

Interviewees sometimes found this question difficult to answer for the reasons outlined for question three above. However, because it was focused on a particular display, it was answered more often than in the All Displays Questionnaire.

Question 3 -Did you find anything confusing?

This question elicited some useful data. Some visitors were quite happy to answer this while others appeared to interpret it as a "test" of them rather than the display. They were therefore reticent to answer in the affirmative.

Question 4 - What do you think the designer was trying to show with this display?

This was a successful question for testing the educational intention.

Question 5 (This question differed between each display.)

Question 6 - If you were the designer of this display, how would you improve it?

This question elicited considerable response and ideas.

9.5 ANALYSIS AND INTERPRETATION OF DATA

The analysis of the data using the methods outlined in the research methodology was effective for organising and presenting the data.

The method of interpretation of this data was appropriate. It would have been more effective if it could have been compared with the intentions of the displays if these were available. However, the research has resulted in information which gives a greater understanding of how visitors perceive the displays and can be the basis for future planning.

10. Recommendations for Evaluation of Displays in Department of Conservation Visitor Centres

10.1 l NTRODUCTION

Evaluation research is about understanding the experience of visiting a display, and determining the displays impact on the visitor. The evaluation process uses this information to answer the question of whether the display or display area is doing what the developers intended it to do, and/or is it successful?

Nearly all those involved in the creation of displays would support the view that the needs of visitors should be taken into account. The visitors are the "clients" and if their responses are not sought, then it is more difficult to meet their needs and therefore the displays will not be as effective as they could be. "If we do not evaluate how visitors respond what we provide is likely to be ineffectual: we are ignoring a source of free consultancy" (Prentice 1993).

To get the visitor perspective involves using a visitor friendly methodology, a variety of techniques, and attempting to understand the whole experience of the visitor rather than just the educational objectives which are often the basis for evaluation.

These recommendations for an evaluation strategy and subsequent suggestions for carrying this out are based on measuring the success of a display and/or display area from the visitors' reaction to it. This means that the success is not based just on whether the display or displays achieve their objectives but also on the ability of the display to meet visitors' needs and expectations - according to the visitors' criteria. This means that an unintended outcome, that is regarded as positive by visitors, will need to be accepted as such by the creators of the display or display area.

The evaluation trials on displays at Department of Conservation Visitor Centres explored a number of ways to allow the voice of the visitor to be heard by those developing displays. From this research, the following recommendations have been developed:

10.2 SET THE OBJECTIVES FOR THE DISPLAY OR DISPLAY AREA

For the visitor responses to be most effective in enhancing the development of displays, the design process must have clear objectives:

- Who are the displays for and which of their needs can/cannot be met by the display/display area.

- What are the messages that the visitors are to receive (educational objectives).
- The expected behaviour of the visitors needs to be identified. For example, are they expected to read, touch, look at photographs etc.
- The affect of the display on the visitor, and the experience to be gained by the visitor needs to be defined. Are they expected to leave the display in awe, be concerned, or to be delighted by it? What did they enjoy about the experience.

When these objectives are known, then the effectiveness of the display can be ascertained both from the visitor and the developer's perspective. With these objectives outlined, the question can be asked who uses the display and do they get the message?

Identifying the objectives of a display and/or display area at the beginning of the design process means that inappropriate and unrealistic intentions can be identified by those involved in the development team and can be resolved. It also means that contradictory and conflicting intentions can be recognised and addressed, so that their effect on the design process can be minimised.

The identification of the educational, behavioural, and affective/experiential objectives also means that the different skills of those involved in creating of the display would be recognised. In particular, it would mean the important role of the designer especially in areas related to the experiential and aesthetic display intentions would need to be acknowledged. Such a recognition would reinforce the need for effective communication between all those involved in creating the display, and at all stages of the design process.

As reflected in this research, there are no average visitors, they come with a wide variety of motives, skills and experience. Evaluation research has the potential to allow developers of displays to find out about some of the "market segments", such as overseas visitors, local visitors, children and teenagers, those who have used the national parks before visiting the centres, and those who have not. Such information should help in the process of developing displays which can cater for the range of visitors to visitor centres.

10.3 IMPLEMENTATION OF EVALUATION AT ALL STAGES OF THE DESIGN PROCESS

The evaluating of visitor perceptions of displays can take place at all stages of the design process, and of the finished product.

	DISPLAY AREA	INDIVIDUAL DISPLAY OR ON-SITE PANEL
Looking for ideas	Front-end evaluation	Front-end evaluation
Will what has been planned work?	Formative evaluation	Formative evaluation
What changes can be made to improve an existing display/ display area?	Summative evaluation	Summative evaluation
How effective is the display/display area?	Summative evaluation	Summative evaluation

During the concept development stage, the visitors can be consulted as to the presentation styles and topics they would like in a display or display area. Research at this point can include the non-visitor and other specialist audiences, for example overseas visitors and their perceptions. Such evaluation is referred to in museum circles as front-end, and it does give useful information at an early stage in the design process, complementing consultation with local iwi, tourism operators, and local communities, such as that done for the Haast Visitor Centre in 1990. Such evaluation is, however, difficult to do in house because it needs specialist experience.

Evaluation of the initial designs of display areas and displays is referred to as formative evaluation. This involves examining the reaction of visitors to the displays or display areas early on in the designing process so this information can be fed back into the remainder of the design process. Formative evaluation techniques as used by organisations such as the British Museum of Natural History (Griggs and Manning 1983, McNamara 1990) have been found to be quite accurate in predicting whether the display's components are communicating successfully. Such techniques use "rough and ready" mock-ups and require only small samples of visitors.

To carry out formative evaluation for a new display area would need some specialist experience. However, this method is ideally suited for getting feedback on a new visitor centre or where an old one has been gutted. If designers are prepared to act on this information, it can go a long way to eliminating areas of communication breakdown.

For an individual display or on-site panel, formative evaluation is equally valuable. Again, "rough and ready" mock-ups can be used to get feedback, particularly on whether visitors understand the intended messages. Such formative evaluation can be carried out by Department of Conservation staff.

Displays can be set up in-situ, or wherever there is an appropriate group of visitors to use as a sample.

Evaluation of existing display areas (summative evaluation) can also be carried out in-house by Department of Conservation staff. This evaluation contributes to the ongoing development of effective visitor centres in a number of ways:

It enables an understanding of how visitors perceive, and are attracted to use the visitor centres and their display areas, and to identify features attracting and deterring visitors.

- It enables decisions about remedial action, or display by display replacement, to be made based on the visitors' perception of the presentation style and the topics chosen.
- It gives an understanding of visitor needs and wants, and gives a pool of ideas which provide a basis for the direction for future development of new displays in the centre.

Evaluation of completed individual displays for on-site panels enables the effectiveness of presentation techniques and messages to be assessed so remedial action can be taken. It also gives an understanding of how visitors perceive display techniques and topics which can then be the basis for future development of effective displays.

Explanations of how Department of Conservation staff can carry out the types of evaluation indicated above, is included in Doc Technical Series Report No. 9, Evaluating displays and on-site panels : a guide for Department of Conservation Staff, 1995.

If nothing else, the outcome of such evaluation research is to raise the consciousness of staff regarding visitors, and potential visitor needs. However, it is important that the evaluation of displays fits in as part of the overall planning process, including the specifying of institutional goals, the display goals, budgets and resources, and accountability.

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12. References

Bimey, B.A. 1991. The Benefits of Long Trem Evaluations of a Interactive Exhibit Area at Brookfield Zoo. Visitor *Studies: Theory, Research, and* Practice 4: 234-239.

Department of Conservation, 1990. Haast Visitor Centre Architectural Brief. Department of Conservation, Hokitika.

Falk, J.H., Koran, J.J., Dierking, L.D. and Dreblow, L. 1985. Predicting Visitor Behaviour. Curator 28: 249-257.

Greene, J.C., Whitmore, E., Sappington, H. 1987. Strategies for Qualitative Data Analaysis, Evaluation Practice 8 : 5-11.

Holbrook, M.B. and Hirschman, E.C. 1982. The Experiential Aspects of Consumption: Consumer Fantasies, Feedings and Fun. *Journal of* Consumer *Research* 9: 132-140.

Jarrett, J.E. 1986. Learning From Developmental Testing of Exhibits. Curator 29: 295-306.

Prentice, R. 1993. Evaluating Interpretation by Considering the Consumer. Interpretation *Journal*, Summer: 9-11.

West Coast Conservancy, 1990. Haast Visitor Centre Display Galleries Brief, Department of Conservation, West Coast Conservancy.

Wizevich, K.J. 1990. Creation and Reception of Exhibitions: Comparison of Provider Intentions and visitor response. Unpublished thesis for Phd in Achitecture, Victoria University, Wellington.