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6. Overall, how satisfied were you with trip experiences here?

1	2	3	4	5
Very satisfied	Satisfied	Neutral	Dissatisfied	Very dissatisfied
56%	**37%**	**6%**	**1%**	**0%**

7. We also want to know how satisfied you are with the facilities and services provided for visitors here. Please circle a number to show us what you thought of these.

FACILITY/SERVICE SATISFACTIONS	Very satisfied	Satisfied	Neutral	Dis-satisfied	Very dis-satisfied
RIVERBANKS Total sample (n = 559)					
- smooth/easy riverside track surfaces	20	35	31	10	4
- gentle riverside tracks/not steep	17	35	33	11	4
- drainage of water off riverside tracks	22	38	32	6	2
- boardwalks on the riverside tracks	33	40	24	3	1
- steps on the riverside tracks	24	41	22	10	2
- signposts for times/distances	44	36	14	5	1
- the track-marking of riverside tracks	29	40	26	3	1
- landing places beside the river	17	34	25	18	6
HUTS Hut users (n =204)					
- number of bunks in huts	20	24	39	6	1
- spaces to relax	26	31	35	7	1
- cooking space and facilities	29	34	30	5	1
- washing-up space and facilities	24	33	34	7	2
- drying space and facilities	19	26	41	10	4
- water supply	25	34	32	6	3
- toilets	27	33	31	7	2
- lighting facilities	18	23	45	9	5
- heating facilities	22	25	45	5	3
CAMPSITES Campsite users (n =484)					
- toilets	26	43	17	10	4
- water supply	24	42	18	11	5
- rain shelters at campsites	29	37	20	10	3
- cooking facilities	25	36	28	10	2
- washing facilities	21	35	28	12	4
INFORMATION Total sample (n =559)					
- maps/brochures in the huts	21	32	38	5	3
- signposts for hut/camp location	33	40	19	6	1
- advice from Wardens	27	29	36	4	4
- material from visitor centres	19	29	44	5	3
- advice from visitor centres	21	26	46	4	4
- quality of maps/brochures	24	32	34	6	3

8. Visitor numbers on this trip may increase, and we want your opinion on the possible management actions we could take to deal with this. Please read each statement and circle the number best describing your opinion.

TO CATER FOR INCREASING NUMBERS, MANAGERS SHOULD: (n =559)	Strongly Agree	Tend to Agree	Neutral	Tend to Disagree	Strongly Disagree
INCREASE ACCOMMODATION CAPACITY					
- put more bunks in huts to accommodate more people	10	20	41	20	9
- build more huts to accommodate more people	13	20	31	21	14
- allow more guided trips, using separate huts/campsites	13	23	33	18	13
- build more campsites and provide facilities to encourage more camping	23	30	25	15	7
- encourage camping by allowing more freedom for camping beside the track	16	18	24	26	16
SPREAD USE OUT					
- provide more alternative tracks to spread people out	15	34	39	9	3
- make the busy times more expensive to encourage off-peak use	5	11	26	27	31
N/A	-	-	-	-	-
- make alternative areas much cheaper to attract use away from here	9	14	44	22	11
- encourage smaller group sizes, and discourage larger groups	15	24	35	15	11
LIMIT USER NUMBERS					
- have bookings for bunks in huts, as a way to limit numbers	9	20	29	22	20
- have bookings for campsites, as a way to limit numbers	6	17	27	26	24
- require permits to do the trip, and limit the number issued	8	18	27	20	27
- remove some facilities from huts and campsites to discourage use	3	4	21	26	46
PROVIDE MORE PRE-WALK INFORMATION					
- provide information about alternative trips to areas that people may enjoy more	21	33	36	7	3
- provide information about use-levels here, to encourage trips to other places	16	31	42	7	4
- provide information about impacts of use on nature (promote low-impact use)	33	32	29	3	2
- provide information about social impacts on experiences (promote good behaviour)	36	31	29	2	1
OTHER					
- limit motorboat access to some places/overnight sites	26	23	34	9	8

ATTACHED QUESTIONNAIRE RESPONSES

These responses are presented here as they do not fit the questionnaire format used for this appendix.

A. Question 1. Nationality breakdown

NATIONALITY	NO'S	%
New Zealand	485	87
Germany	25	5
Great Britain	18	3
United States	6	1
Australia	6	1
Switzerland	3	0
Netherlands	4	1
Canada	1	0
Denmark	3	0
Israel	0	0
Japan	3	0
Other Europe*	4	1
Other Asia	0	0
Other†	4	1

* 1 each Belgium, Norway, Sweden, Finland

† 1 each Argentina, Albania, Mali, Mexico

B. Question 1. Nights on trip and at huts/camps

(1) Trip Duration

No. of nights	1 nights	2 nights	3 nights	4 nights	5+ nights
% trips of this duration	1	9	21	43	26

(ii) Nights at Huts and/or Campsites

Overnight accomodation

	Huts only	Hut & 1 camp	Multiple huts/camps	Camps & 1 but	Camps only
trips	5	5	12	10	60

C. Question 3. Locations of crowding focus

Overall, 59% of visitors (n = 325) considered some places on the visit were more crowded than others. They were asked to indicate in general terms whether this occurred in huts, at campsites, on the track or elsewhere, and then relative to these, specifically where. These specific responses are summarised here. Note that multiple responses were allowed for.

Huts - 194 specified huts as a focus of crowding (60% of 325). Of these, the specific focus responses highlighted the following main sites:

71% - John Coull Hut 13% - Tieke Hut/Marae 8% - Whakahoro Hut

Campsites - 137 specified campsites as a focus of crowding (42% of 325). Of these, the specific focus responses highlighted the following main sites:

43% - Mangapurua campsites
12% - Ngaporo campsites
11% - Ohinepa campsites

On the river - 21 specified areas along the track as a focus of crowding (6% of 325). Of these, no particular areas were prominent.

Other - 11 specified `other' as a focus of crowding (3% of 325). Of these, no particular areas were prominent.

Appendix 2

Details of Whanganui journey principal components analysis

Principal component analysis (PCA) was carried out upon selected subsets of response-list items from 559 respondents to the Whanganui journey sample from the Great Walks survey. These subsets related to response lists for visitor perceptions of impacts (Q. 5), visitor satisfactions (Q. 7), and visitor preferences for possible management responses (Q. 8) to increasing visitor numbers. The PCA defined a reduced number of summary scales which could then be used for more complex analytical procedures. The following material describes the summary scales, and demonstrates the degree to which they are representative of their component variables. Items were included in the scale if their removal reduced the value of the scale reliability co-efficient (Kronbachs alpha).

SATISFACTION SCALES (from Question 7)

SCALE NAME (and description)	RELIABILITY (Kronbachs Alpha)	COMPONENT LIST VARIABLES (from original questionnaire Q.7 **lists)**	LOADINGS (from PCA)
Hut conditions	**0.9096**	Hut cooking space/facilities	0.814
		Hut washing up space/facilities	0.767
		Space to relax in huts	0.766
		Hut drying space/facilities	0.711
		Number of bunks in huts	0.681
Campsite facilities	0.8909	Camp washing up space/facilities	0.772
		Camp cooking space/facilities	0.761
		Rain shelters at campsites	0.696
Water/toilet/extra	0.8947	Water supply at huts	0.752
		Toilets at huts	0.737
		Toilets at campsites	0.714
		Water supply at campsites	0.666
		Hut lighting facilities	0.594
		Hut heating facilities	0.563
Riverside tracks	0.8627	Gentle slopes/not steep	0.814
		Smooth/easy surfaces	0.778
		Drainage of water	0.674
		Landing places beside river	0.627
		Steps	0.619
		Boardwalk over wet/fragile areas	0.574
Information services	0.9034	Advice from visitor centres	0.849
		Material from visitor centres	0.847
		Quality of maps/brochures	0.798
		Advice from wardens	0.675
		Maps/brochures in the huts	0.634
Route marking/ signs	0,7884	Signposts for camp/hut location	0.817
		Track marking of riverside tracks	0.602
		Signposts for distances/times	0.601

IMPACT PERCEPTION SCALES (from Question 5)

SCALE NAME (and description)	RELIABILITY (Kronbachs Alpha)	COMPONENT LIST VARIABLES (from original questionnaire lists)	LOADINGS (from PCA)
Litter impacts	0.8583	Litter on riverside tracks	0.838
		Litter around campsites	0.824
		Litter around but	0.741
		Litter on river/riverbanks	0.705
Physical damage	0.7691	Seeing shortcuts off tracks	0.703
		Seeing where wood cut for fires	0.697
		Seeing where campsites have formed	0.693
		Seeing trampling around wet areas	0.653
		Seeing human waste/toilet paper	0.537
Hut congestion	0.8398	Insufficient bunk space in huts	0.849
		Having to rush for bunk in huts	0.812
		Too many people in but	0.780
		Noisy people in huts at night	0.705
Water/Toilet/ hygiene	0.6880	Inadequate water supply	0.805
		Inadequate toilet facilities	0.754
		Uncertainty in water hygiene	0.587
Boat disturbance	0.7467	Disturbance by boats at beaches	0.843
		Disturbance by boats at huts/camps	0.779
Overdevelopment	0.9032	Too much development of campsites	0.855
		Too much development of riverside tracks	0.834
		Too much development of signs	0.803
		Too much development of huts	0.791
Overall congestion	0.8429	Too many others at campsites	0.776
		Seeing too many on the river each day	0.776
		Seeing too many big groups of people	0.731
		Having to rush for campsite space	0.675
		Seeing people on guided river trips	0.610
		Noisy people at campsites	0.545
Extra items		Plane noise	

MANAGEMENT PREFERENCE SCALES (from Question 8)

SCALE NAME (and description)	RELIABILITY (Kronbachs Alpha)	COMPONENT LIST VARIABLES (from original questionnaire lists)	LOADINGS (from PCA)
Rationing/use limits	0.8656	Bookings for spaces at campsites	0.886
		Bookings for bunks in huts	0.850
		Require permits, and limit these	0.769
Information management	0.8261	Provide inf. on physical impacts	0.880
		Provide inf. on social impacts	0.774
		Provide inf. on crowding conditions	0.759
		Provide inf. on different trip options	0.757
Increase accommodation	0.7524	Build more huts	0.773
		Provide more campsite/camping facilities	0.740
		Allow more guided trips/facilities	0.687
		Increase freedom for camping along river	0.644
		Provide more bunks in huts	0.600
Manipulate use conditions	0.6876	Make other options cheaper	0.779
		Encourage small groups/discourage large	0.671
		Make peak use times more expensive	0.647
		Provide more alternative tracks	0.457
		Remove some facilities to discourage use	0.426
Extra items		Limit access by boats to some places	

Appendix 3

Details of Whanganui journey crowding scores

Crowding was assessed using a widely used nine-point crowding scale (Question 2), and Table A3.1 presents the responses from Whanganui journey visitors.

TABLE A3.1. WHANGANUI JOURNEY CROWDING SCORES.

DEGREE OF CROWDING	(scores)	TOTAL % (n = 559)
NOT CROWDED	(1)	40
	(2)	18
	(3)	17
CROWDED - slightly	(4)	9
	(5)	4
CROWDED - moderately	(6)	5
	(7)	4
CROWDED - extremely	(8)	1
	(9)	1

Shelby *et al.* (1989)' summarised and evaluated the accumulated results from this method, and developed an interpretation method to highlight the management significance of these responses. These interpretations, which can be considered carrying capacity judgements related to the quality of visitor experiences, apply to the crowded respondents (e.g., those scoring 3 or more). Table A3.1 shows that the proportion of crowded visitors on the Whanganui journey was 42%.

Table A3.2 presents a range of results from the other Great Walks and from studies summarised by Shelby *et al.* (1989). Accompanying these results are the interpretations applied to different crowding scores. The interpretation of 42% crowding on the Whanganui journey is that use is at `low normal conditions', where no problem situation associated with use-levels currently exists. Currently these crowding levels suggest unique low-density recreation experiences are being maintained, but that these are likely to diminish if use levels increase. These interpretations represent informed but subjective guidelines based upon extensive accumulated knowledge.

Comparing the Great Walk crowding scores in Table A3.2 and Figure A3.1 indicates that crowding is relatively very low on the Whanganui Journey. Preventative management to forestall serious adverse effects arising from increasing use will be required first on other tracks.

Shelby, B.; Vaske, J.J.; Heberlein, T.A. 1989. Comparative analysis of crowding in multiple locations: Results of 15 years of research. *Leisure Sciences 11:* 269-291.

TABLE A3.2 DIFFERENT LEVELS OF 'CROWDED' RESPONSES. (AFTER SHELBY ET AL. 1989)

CROWD POPULATION (%)		RESOURCE	STATE OR COUNTRY	RESOURCE CONDITIONS	CARRYING CAPACITY JUDGEMENT
100	Boaters	Deschutes River	Oregon	Weekends section 1	Much more than capacity (80- 100%) Manage for high density recreation experiences, or treat as a 'sacrifice area', allowing quantity of activity to compromise quality of experiences. Could be a localised compromise to reduce pressure on other areas.
94	Anglers	Colorado River	Arizona	Thanksgiving weekend	
91	Boaters	Raystown Lake	Pennsylvania	On the lake	
89	Pheasant hunters	Bong Hunting Area	Wisconsin	Opening day	
88	Boaters	Deschutes River	Oregon	Weekdays section 1	
87	Riparian landowners	Lake Delavan	Wisconsin	Overall rating	
86	Goose hunters	Grand River Marsh	Wisconsin	Firing line	
85	Pheasant hunters	Public Hunting Area	Wisconsin	Opening day	
· 76*	Walkers (GW)	Routeburn Track	New Zealand	Summer	More than capacity (65 - 80%) Studies and management are necessary to preserve recreation experiences, especially if low visitor impacts (social/physical) are important components. Immediate management to control use-levels at around 65% level of crowding conditions may be considered as an option. Research may be needed to establish more long-term solutions.
76	Trout anglers	Gun Powder River	Maryland	Opening day	
75	Salmon anglers	Waimakariri River	New Zealand	At river mouth	
75	Boaters	Raystown Lake	Pennsylvania	At attraction sites	
74	Salmon anglers	Rakaia River	New Zealand	At river mouth	
73	Canoers and boaters	Boundary Waters C.A.	Minnesota	Moose Lake	
72	Rafters	Grand Canyon	Arizona	1985 Summer	
70	Anglers	Klamath River	California		
70	Climbers	Mt. McKinley	Alaska		
" 69 "	Walkers (GW)	Abel Tasman Track	New Zealand	Summer	
69	Boaters	Door Country	Wisconsin		
6s	Walkers (GW)	Tongariro Crossing	New Zealand	Summer (Easter 86"/0)	
68	Rafters	Rogue River	Oregon		
68	Rock climbers	Seneca Rocks	West Virginia		
66	Boaters	Raystown Lake	Pennsylvania	At put-in location	
· 63 ·	Walkers (GW)	Kepler Track	New Zealand	Summer (Easter 86%)	High normal conditions (50-65%) Should be studied if increased use is expected, allowing management to anticipate problems. Represents the best time to establish more long-term management, as once higher crowding perceptions exist, there is difficulty in managing use 'down' to levels more
63	Boaters	Raystown Lake	Pennsylvania	At takeout location	
" 62 "	Walkers (GW)	Milford Track	New Zealand	Summer	
62	Deer hunters	Sandhill	Wisconsin	1988 High-density hunt	
61	Goose hunters	Fishing Bay	Maryland	Firing line	
61	Floaters	Wolf River	Wisconsin		
59	Salmon anglers	Rakaia River	New Zealand	All anglers	
58 "	Sea Kayakers (GW)	Abel Tasman Coast	New Zealand	Summer	

" 55 ' .	Walkers (GW)	Heaphy Track	New Zealand	Summer (Easter 71%)	appropriate for the main recreation
55	Wildlife photographers	Sandhill	Wisconsin		experiences desired.
54	Recreationists	Lake Delavan	Wisconsin	One-day visit	
53	Anglers	Brule River	Wisconsin	1975	
53	Rafters	Grand Canyon	Arizona	1985 Winter	
53	Rafters	Snake River	Oregon	In Hell's Canyon	
53	Backpackers	Mt. Jefferson	Oregon		
52	Canoers	Brule River	Wisconsin	High-use period	
50	Deer hunters	Sandhill	Wisconsin	1982 High-density hunt	Low Normal Conditions
49	Backpackers	Eagle Cap Wilderness	Oregon		(35-50%)
48	Pheasant hunters	Bong Hunting Area	Wisconsin	Late season	A problem situation does not exist at this time.
46	Deer hunters	State-wide	Wisconsin	No specific resource	As with the above category, these may offer
45	Salmon anglers	Rakaia River	New Zealand	Upstream	unique low-density recreation experiences.
44	Turkey hunters	State-wide	Maryland	No specific resource	These are likely to change with any increase
43	Tubers	Brule River	Wisconsin		in social or physical impacts resulting from
43 ·	Walkers (GW)	Travers-Sabine Track	New Zealand	Summer	increasing numbers of users, or from changes
42 '	Canoeists (GW)	Wanganui River	New Zealand	Summer	in activity types.
-42-	Walkers (GW)	Waikaremoana Track	New Zealand	Summer	
42	Sail-boaters	Apostle Islands	Wisconsin	Summer 1985	
41	Tourists and drivers	Stockings Park	Michigan	Presidential Range	
39	Backpackers	White Mt. Nat. Forest	New Hampshire		
38	Floaters	Klamath River	California	1985 Low-use period	
37	Cancers	Brule River	Wisconsin		
'35 -	Walkers (GW)	Rakiura Track	New Zealand	Summer	Suppressed Crowding
32	Anglers	Colorado River	Arizona	Midweek	(0- 35%)
31	Hikers	Dolly Sods Wilderness	West Virginia	Low-use period	Crowding here is limited by certain
27	Goose hunters	Tuckahoe State Park	Maryland	Low-density hunt	management or situational factors, which
26	Rafters	Illinois River	Oregon		allow particular low-density recreational
25	Trout anglers	Savage River	Maryland	Low use period	experiences. These are likely to be unique,
24	Backpackers	Great Gulf Wilderness	New Hampshire	Low use period	and managers should be concerned with
24	Deer hunters	Sandhill	Wisconsin	1982 Low-density hunt	maintaining them. Changes likely to increase
23	Trout anglers	Gunpowder River	Maryland	Late season	visitor numbers/impacts should be considered
20	Canoeists	Wanganui River	New Zealand	Summer (Easter 68%)	carefully.
17	Goose hunters	Grand River	Wisconsin	Managed hunt	
12	Deer hunters	Sandhill	Wisconsin	1988 Low-density hunt	

and bold type identify the crowding responses for the tracks included in New Zealand's Great Walks.

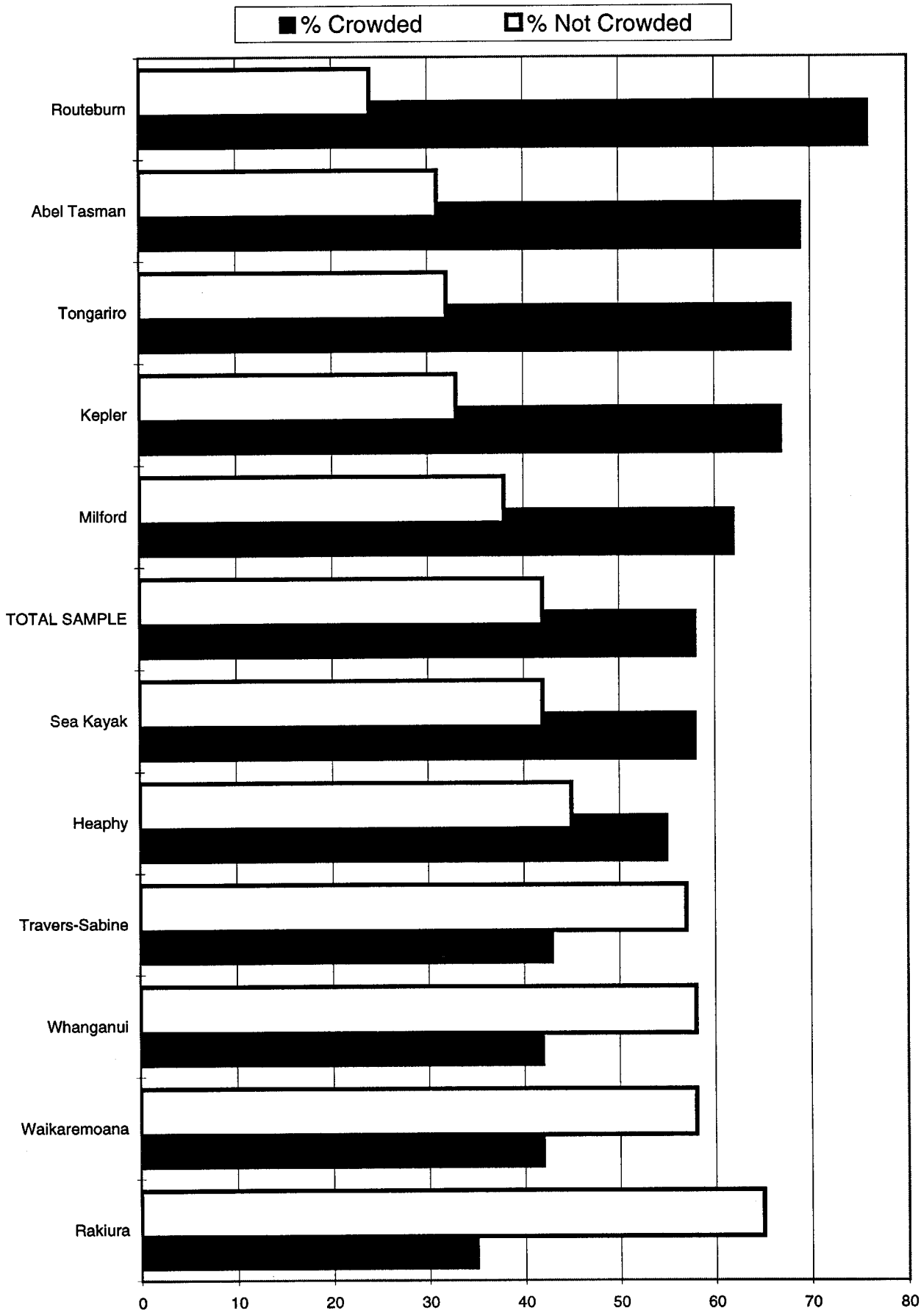

FIGURE A3.1. DIFFERENT LEVELS OF `CROWDED' RESPONSES ON GREAT WALKS.