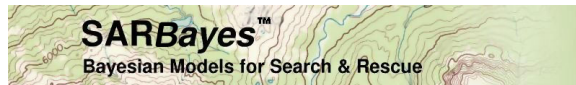


New Zealand Missing Person Behavior

June 2003—June 2004



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sarbayes.org

November 12, 2006

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1 Introduction

This is a preliminary view of the New Zealand SAR data, prepared specially for the annual NZLSAR Conference (November 2006). The report covers one year of data, from June 2003 to June 2004. It is a *draft*. It has not been reviewed for quality. A final version will be posted on the *SARBayes* website sarbayes.org when ready. Out of consideration for space and reader patience, we have chosen to eliminate the methodology sections, which are in the Australian SAR report. They are available upon request.

Our work on the report was funded by Fronterra as part of the International SAR Incident Database (ISRID) project.

We thank all the volunteers and paid professionals who collected the data and made it available to us.

2 Data Summary as of November 12, 2006

We have 694 cases, including groups (which count as a single case).

Of those cases, 439 were Searches. (The Incident Types were: Search, Rescue.)

Of the Search cases, 180 were groups, (comprising 384 people), and 259 were single persons.

3 MP-All

The dataset *Missing Persons* is the “whole” dataset: all the cases which fit our criteria. As noted previously, we excluded Water searches, straight Rescues, cases where the MP hopped on a bus after the LKP, etc. Groups were condensed to a single entry by taking the record for the first member, but substituting the worst-case for Status.

3.1 Overall

Here we summarize the key variables in the dataset, in tables and figures. Because they have so many values, Tables 1 and 2 omit Subject Activity, Subj Found Feature and Traditional Category. However, the distributions for Subj Found Feature and Traditional Category are available in figures in this section.

	N	N_r	Percentiles			
			25%	50%	75%	95%
Distance PLS (km)	439	216	0.5	1.9	5.0	20.0
Age	439	386	24.2	38.0	53.8	77.0
Track Offset (m)	439	153	0.0	0.0	10.0	1000.0
Notify Hours	439	366	0.5	2.4	10.9	42.8
Total Hours	439	384	2.7	8.5	18.6	62.9

Table 1: Summary table for key **numeric** variables in MP-All. N is the total number of cases in this dataset, and N_r is the number reporting that category. (50% is the median.)

	N	N_s	Distribution of Values										4							
EcoRegion Division	439	439	230	240	250	M240														
			273 (62%)	88 (20%)	51 (11%)	27 (6%)														
Experience	439	341	Fair	Good	Poor															
			92 (26%)	211 (61%)	38 (11%)															
Group Type	439	411	Ac	F	Ff	M	Mf	Mm												
			28 (6%)	65 (15%)	9 (2%)	188 (45%)	56 (13%)	65 (15%)												
Mission Cause	439	404	Darkness	Equipment	Falling Ob	Haste	Human Erro	Nature	Other	Pers	U									
			31 (7%)	7 (1%)	2 (0%)	4 (0%)	122 (30%)	8 (1%)	107 (26%)	5 (1%)	41 (10%)									
Physical Fitness	439	345	Fair	Good	Poor															
			44 (12%)	282 (81%)	19 (5%)															
Population Density	439	415	Urban	Suburban	Rural	Wilderness	Water													
			66 (15%)	0 (0%)	28 (6%)	314 (75%)	7 (1%)													
Sex	439	411	F	M																
			102 (24%)	309 (75%)																
Subject Status	439	435	Well	Injured	Doa	No Trace														
			367 (84%)	24 (5%)	34 (7%)	10 (2%)														

Table 2: Summary of key **categorical** variables in MP-All. N is the total number of cases in this dataset, and N_r is the number reporting each variable. (Percents rounded to nearest whole number.)

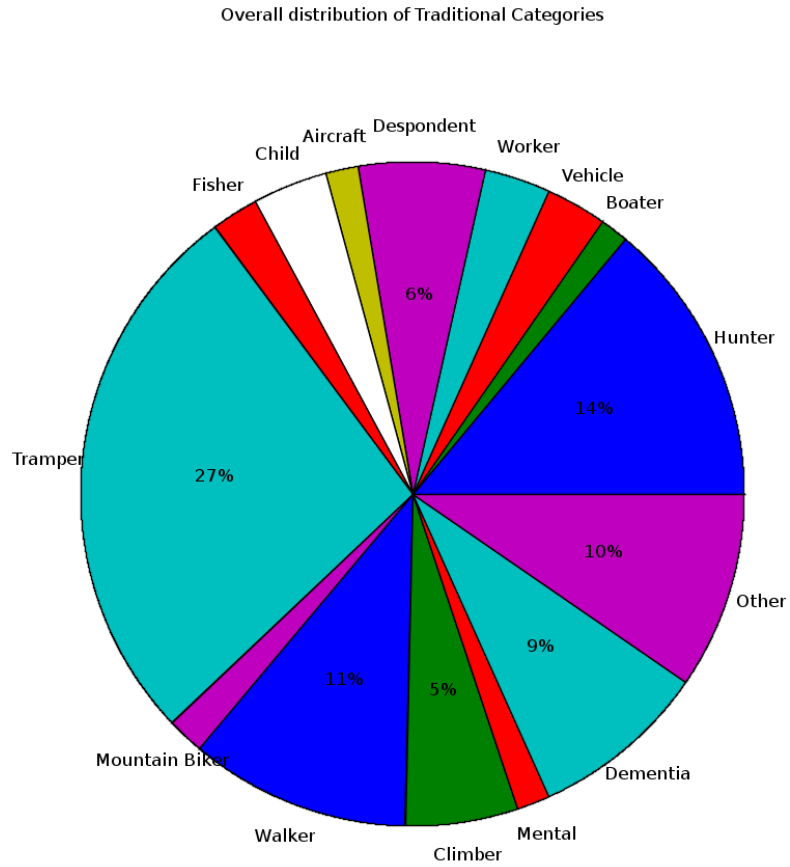


Figure 1: Overall Category distribution in MP-All.

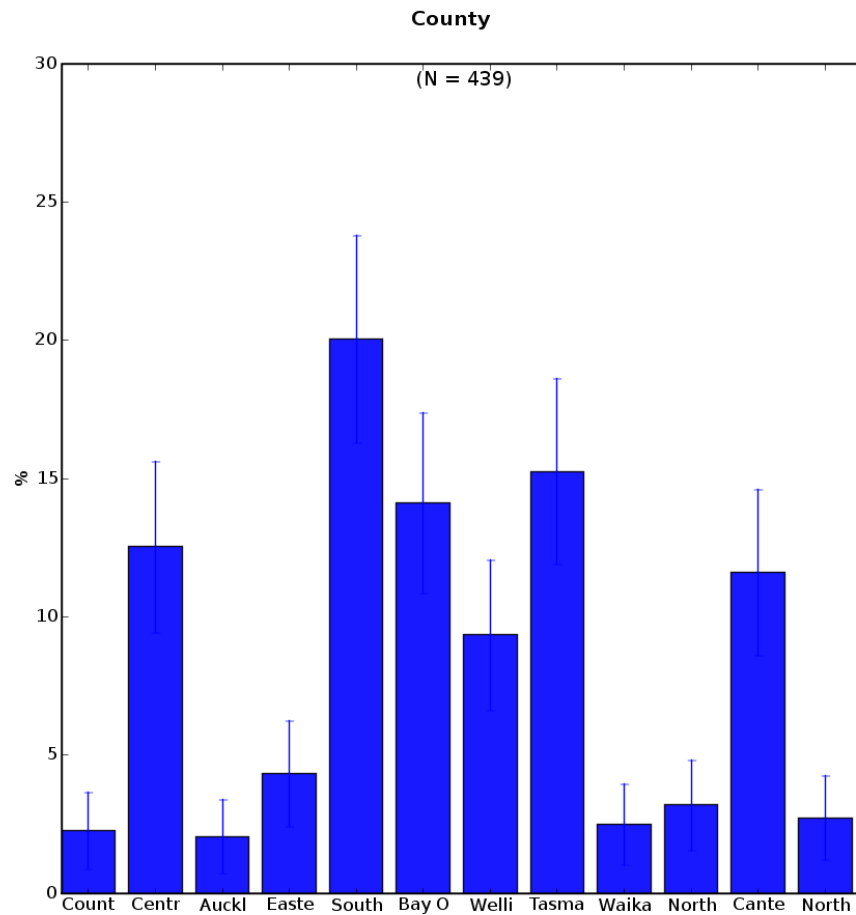


Figure 2: Distribution by County in MP-All. Bars show 95% confidence intervals.

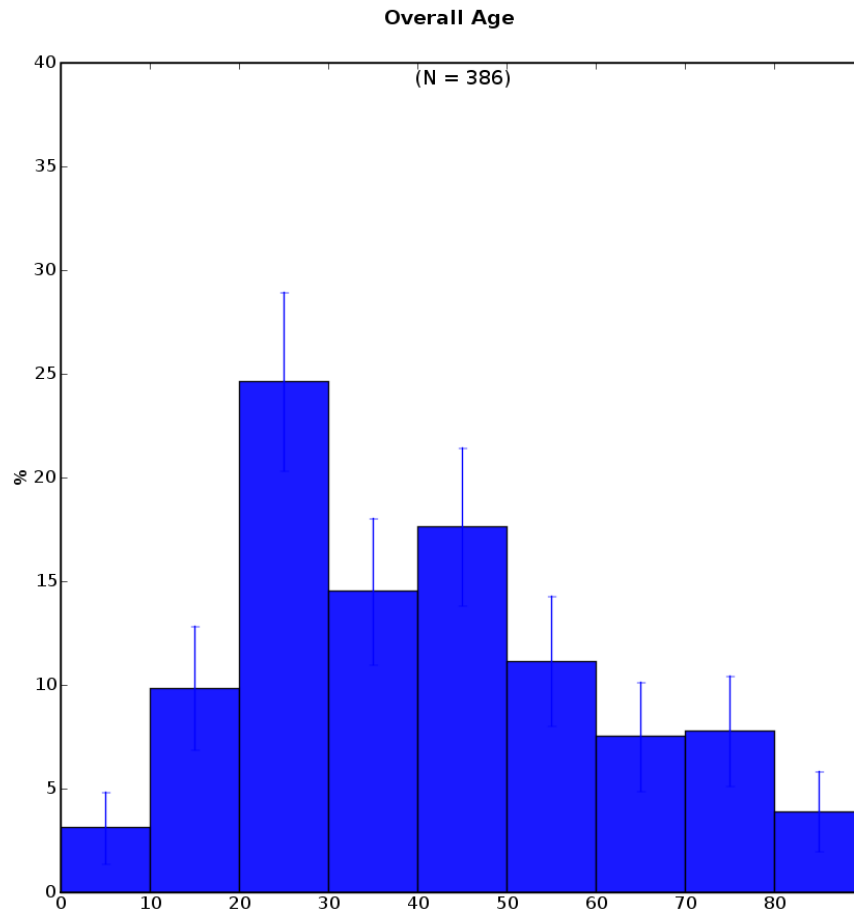


Figure 3: Overall Age (yrs) in MP-All. Bars show 95% confidence intervals.

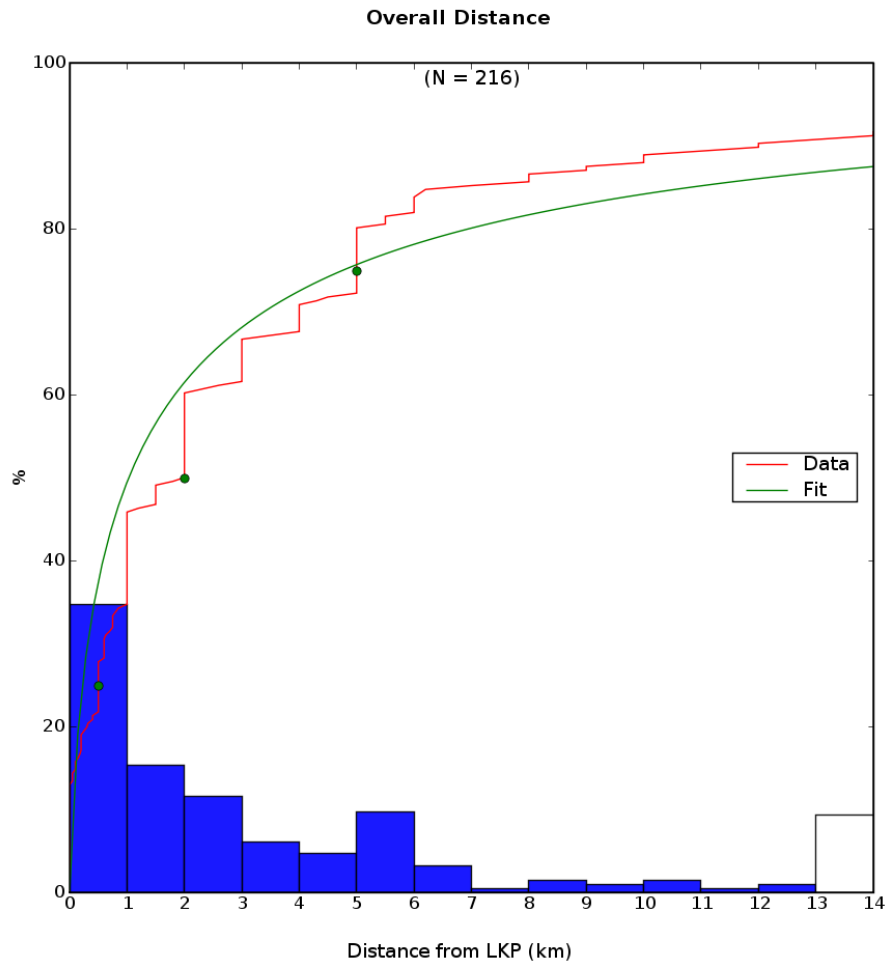


Figure 4: Overall Distance From LKP (km) in MP-All. Lines show cumulative percent. Dots mark 25%, 50%, 75%, and 95% points (some of which may be off the graph).

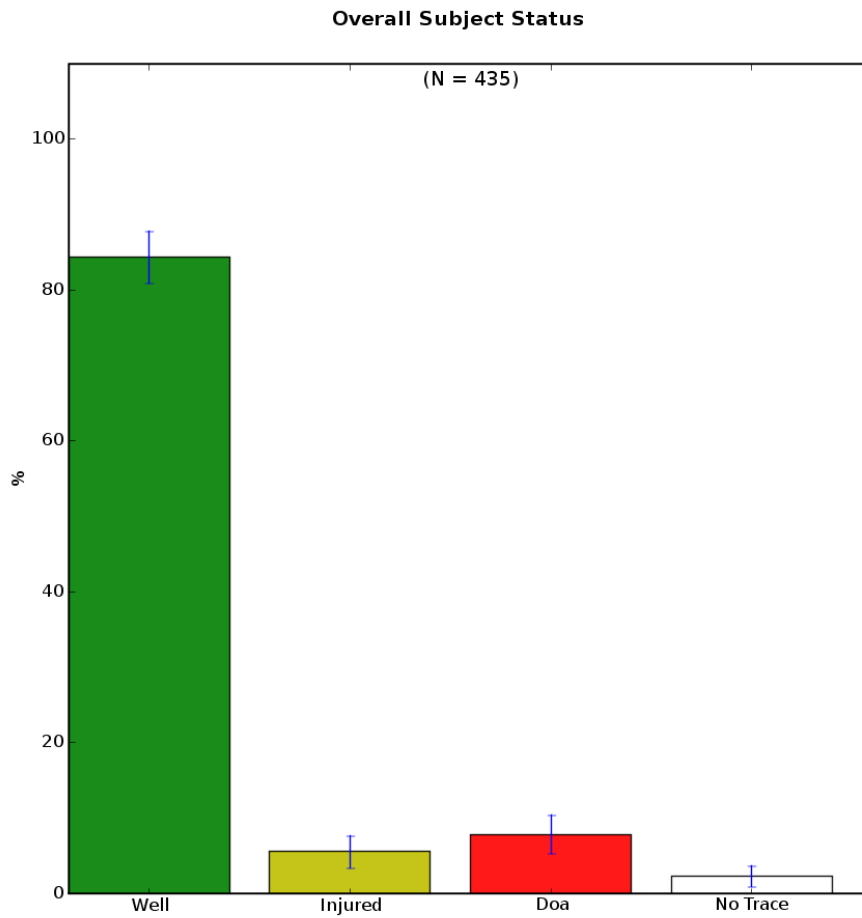


Figure 5: Overall Subject Status in MP-All. Bars show 95% confidence intervals.

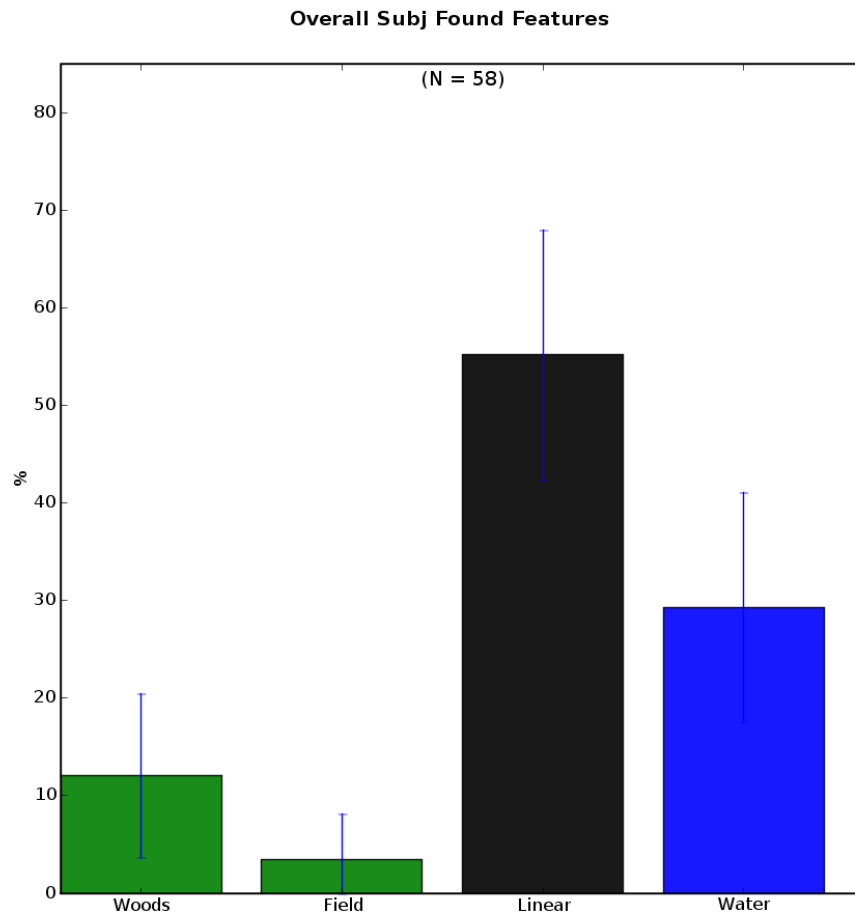


Figure 6: Overall Subj Found Feature in MP-All. Bars show 95% confidence intervals.

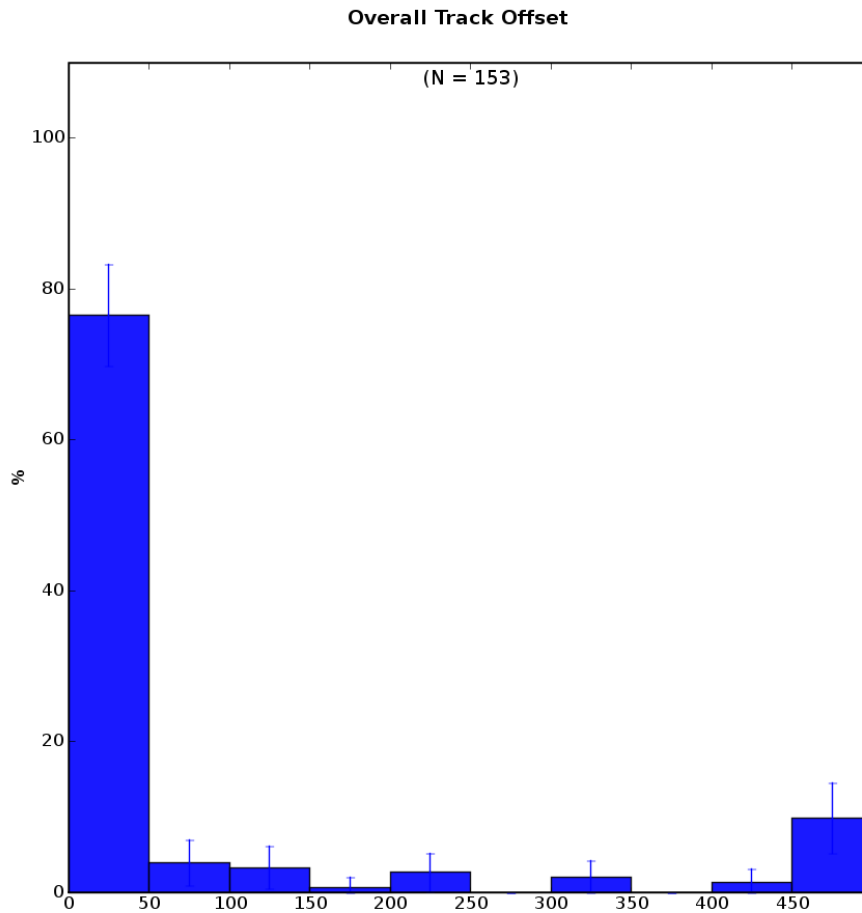


Figure 7: Track Offset (m) in MP-All. Bars show 95% confidence intervals.

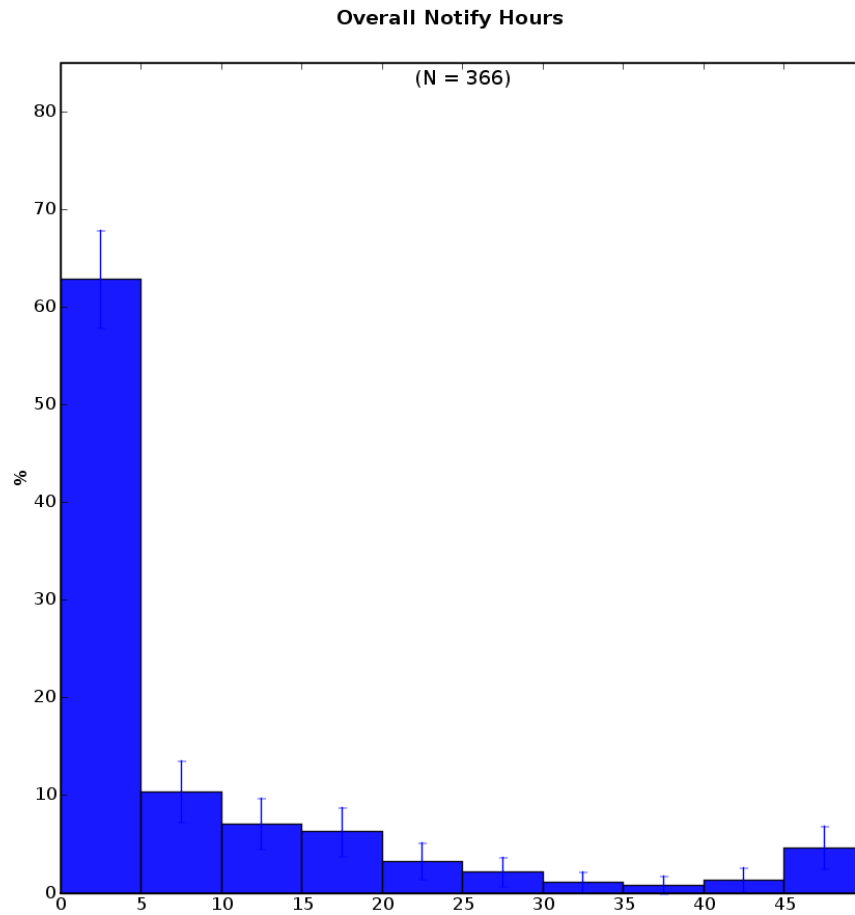


Figure 8: Notify Hours in MP-All. Bars show 95% confidence intervals.

3.2 Scenario

	N	N_d	Percentiles			
			25%	50%	75%	95%
Despondent	22	14	--	--	--	--
Drowning	4	0	--	--	--	--
Evading	7	6	--	--	--	--
Investigative	27	3	--	--	--	--
Lost	138	104	0.7	2.0	5.0	14.0
Medical	1	1	--	--	--	--
Other	1	0	--	--	--	--
Overdue	226	85	0.1	2.0	5.0	20.0
Trauma	7	3	--	--	--	--

Table 3: Distances (km) from LKP, by Scenario in MP-All. N is the total number of cases in this dataset, and N_d is the number reporting d . (50% is the median.)

	N	N_s	Well	Injured	Doa	No Trace
Despondent	22	20	8 (40%)	0 (0%)	10 (50%)	2 (10%)
Drowning	4	4	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Evading	7	7	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Investigative	27	27	25 (92%)	1 (3%)	0 (0%)	1 (3%)
Lost	138	137	116 (84%)	11 (8%)	7 (5%)	3 (2%)
Medical	1	1	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Other	1	1	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Overdue	226	226	208 (92%)	9 (3%)	9 (3%)	0 (0%)
Trauma	7	7	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)

Table 4: Subject Status by Scenario in MP-All. N is the total number of cases in this dataset, and N_s is the number reporting status. (Percents rounded to nearest whole number.)

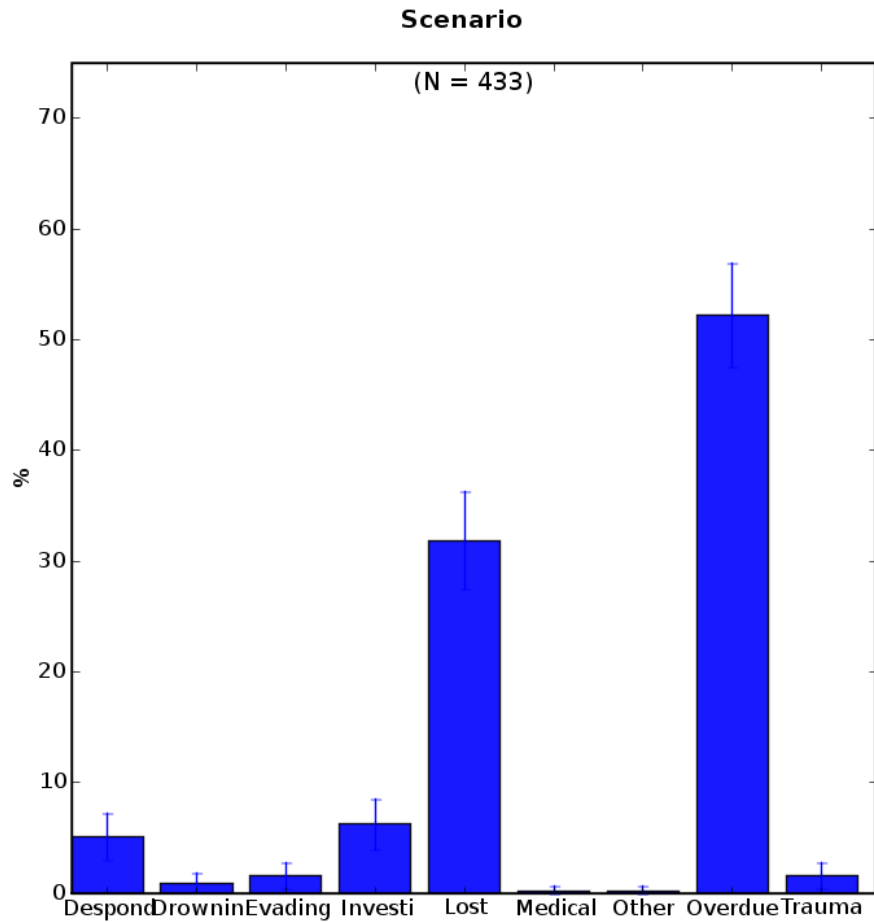


Figure 9: Distribution of Scenario in MP-All.

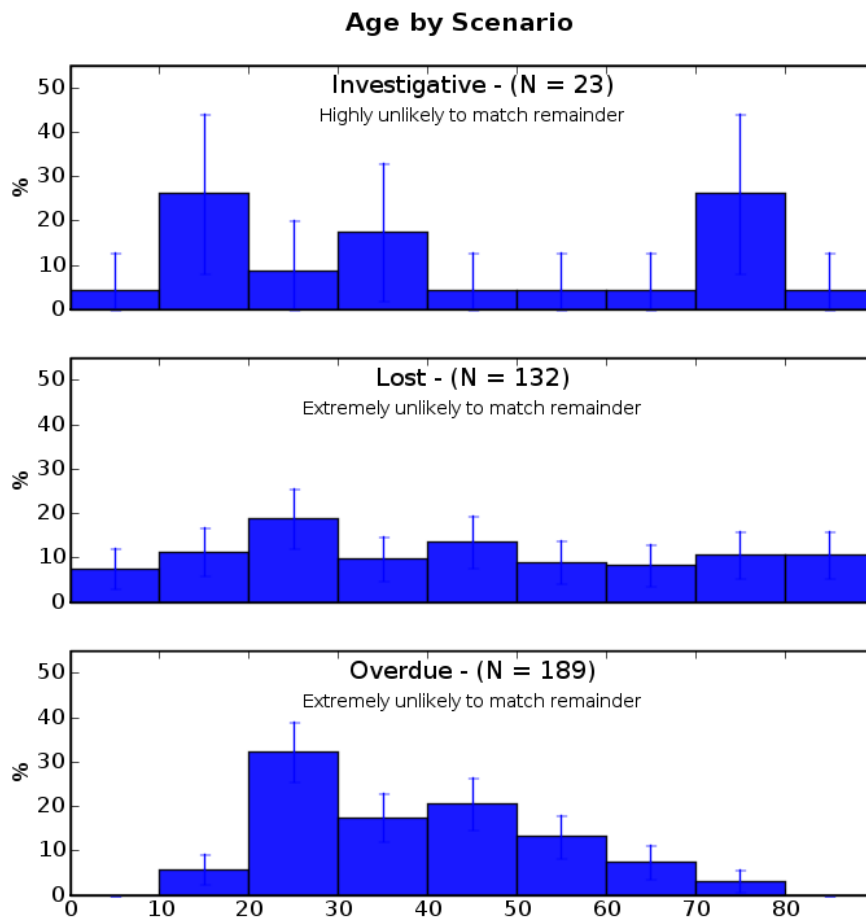


Figure 10: Age (yrs) by Scenario in MP-All. Bars show 95% confidence intervals. Only categories *differing* from the remaining data are shown. For others, see Section 3.1. Categories with fewer than 15 cases not shown.

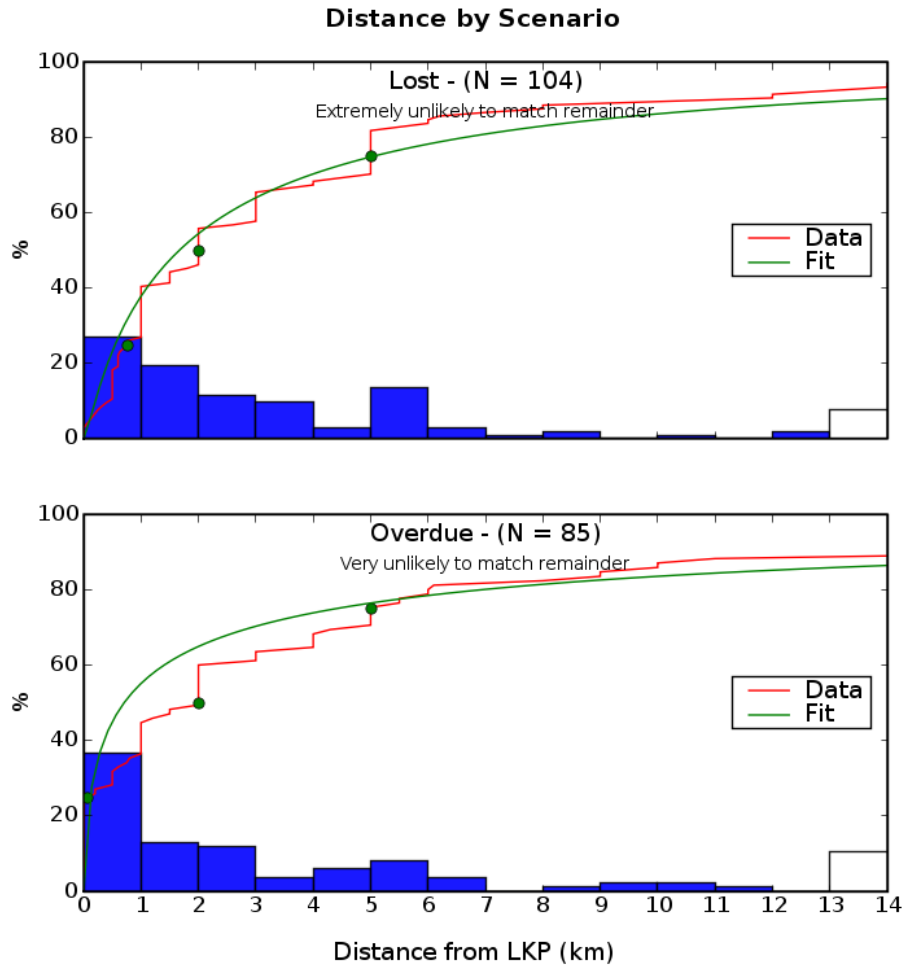


Figure 11: Distance From LKP (km) by Scenario in MP-All. Lines show cumulative percent. Dots mark 25%, 50%, 75%, and 95% points (some of which may be off the graph). Only categories *differing* from the remaining data are shown. For others, see Section 3.1. Categories with fewer than 15 cases not shown.

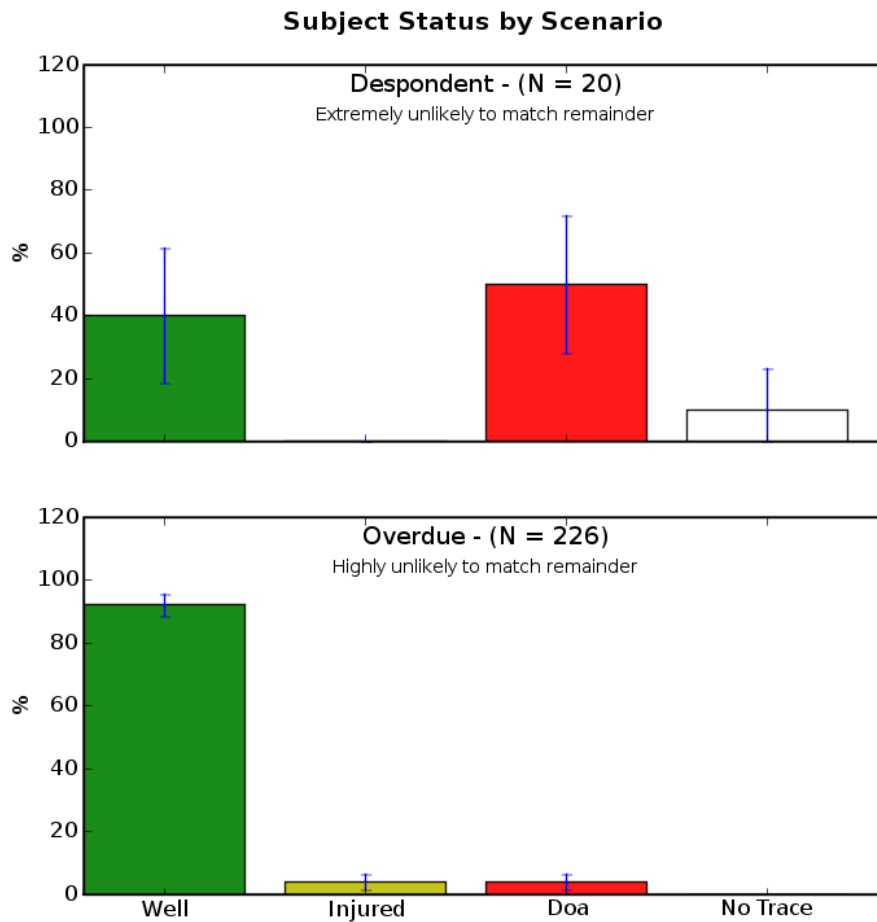


Figure 12: Subject Status by Scenario in MP-All. Bars show 95% confidence intervals. Only categories *differing* from the remaining data are shown. For others, see Section 3.1. Categories with fewer than 15 cases not shown.

Figure 13: Subj Found Feature by Scenario in MP-All *No categories were reliably different from the remainder.* See Section 3.1.

3.3 Population Density

	N	N_d	Percentiles			
			25%	50%	75%	95%
Rural	28	13	--	--	--	--
Urban	66	43	0.5	1.0	4.0	14.7
Water	7	2	--	--	--	--
Wilderness	314	150	0.5	2.0	5.0	18.2

Table 5: Distances (km) from LKP, by Population Density in MP-All. N is the total number of cases in this dataset, and N_d is the number reporting d . (50% is the median.)

	N	N_s	Well	Injured	Doa	No Trace
Rural	28	28	21 (75%)	0 (0%)	6 (21%)	1 (3%)
Urban	66	65	52 (80%)	6 (9%)	3 (4%)	4 (6%)
Water	7	7	-- (-%)	-- (-%)	-- (-%)	-- (-%)
Wilderness	314	311	270 (86%)	18 (5%)	19 (6%)	4 (1%)

Table 6: Subject Status by Population Density in MP-All. N is the total number of cases in this dataset, and N_s is the number reporting status. (Percents rounded to nearest whole number.)

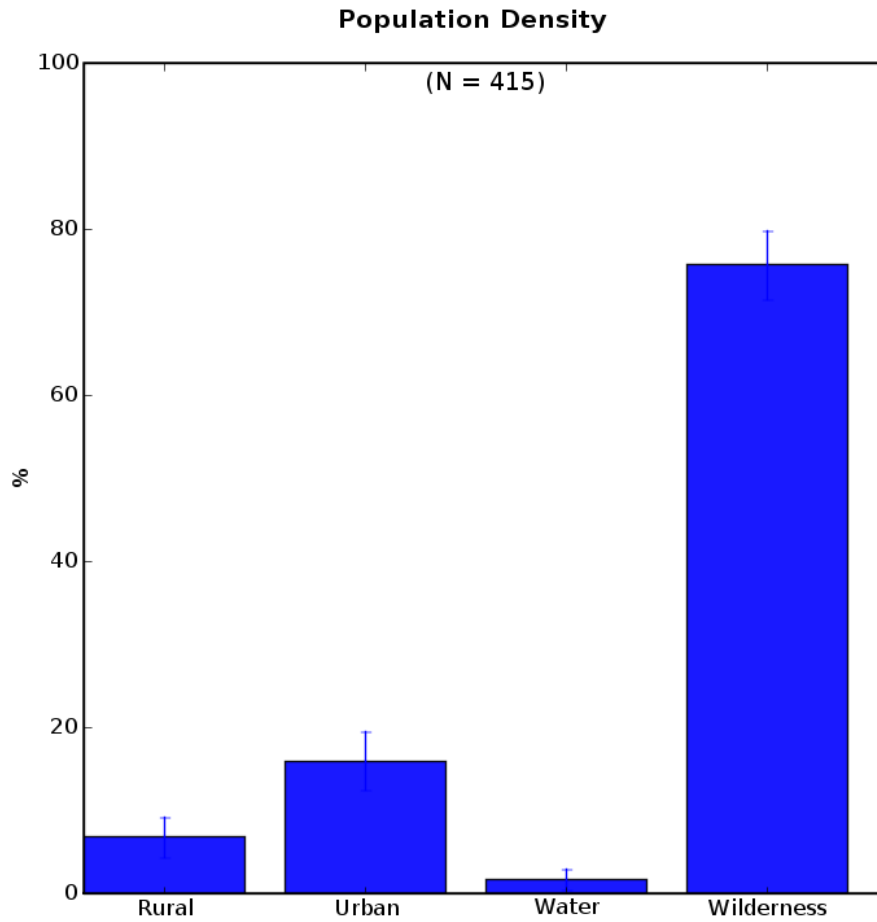


Figure 14: Distribution of Population Density in MP-All.

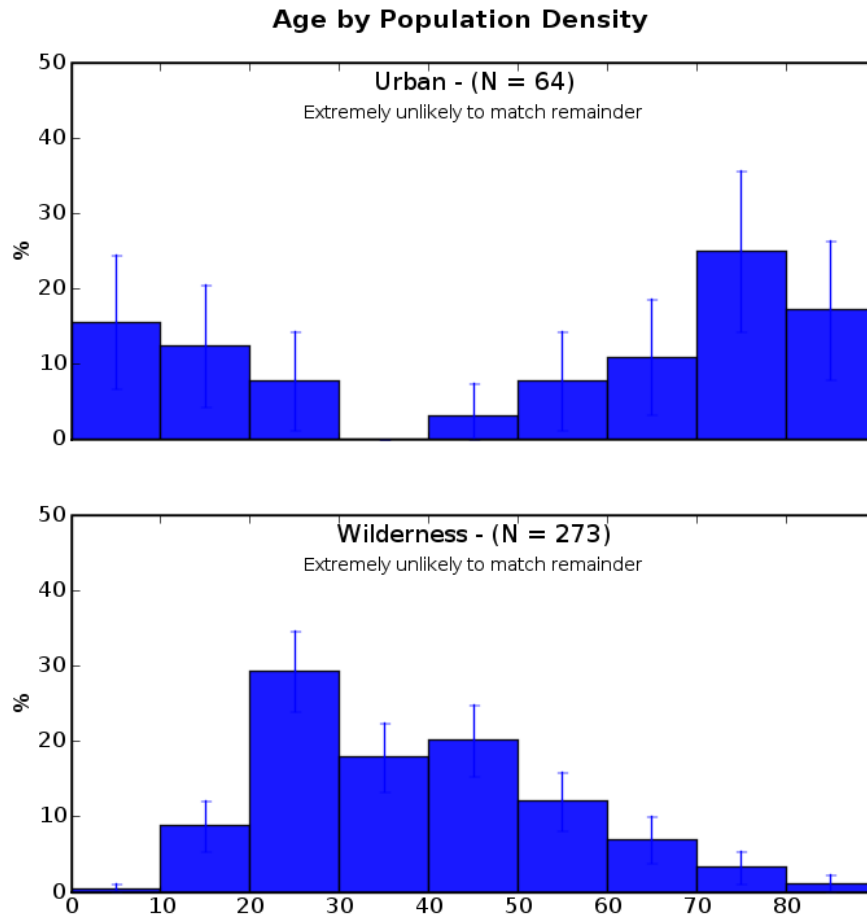


Figure 15: Age (yrs) by Population Density in MP-All. Bars show 95% confidence intervals. Only categories *differing* from the remaining data are shown. For others, see Section 3.1. Categories with fewer than 15 cases not shown.

Figure 16: Distance From LKP (km) by Population Density in MP-All *No categories were reliably different from the remainder.* See Section 3.1.

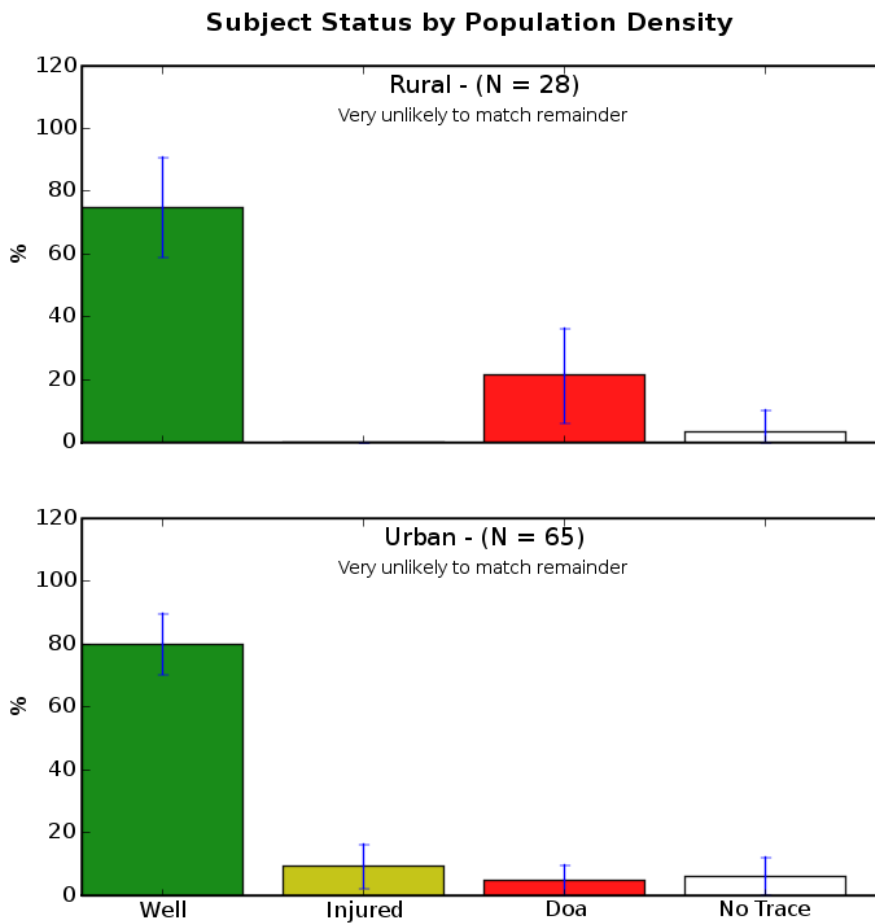


Figure 17: Subject Status by Population Density in MP-All. Bars show 95% confidence intervals. Only categories *differing* from the remaining data are shown. For others, see Section 3.1. Categories with fewer than 15 cases not shown.

Figure 18: Subj Found Feature by Population Density in MP-All *No categories were reliably different from the remainder.* See Section 3.1.

3.4 Subject Category

	N	N_d	Percentiles			
			25%	50%	75%	95%
Abduction	1	1	--	--	--	--
Aircraft	7	2	--	--	--	--
Atv	2	2	--	--	--	--
Autistic	3	3	--	--	--	--
Base Jumpers	1	0	--	--	--	--
Beacon	1	0	--	--	--	--
Boater	6	3	--	--	--	--
Caver	3	2	--	--	--	--
Child	16	8	--	--	--	--
Climber	24	5	--	--	--	--
Criminal	3	2	--	--	--	--
Dementia	38	31	0.6	1.0	5.0	17.5
Despondent	27	16	0.1	0.2	0.6	2.5
Epirb	2	0	--	--	--	--
Etoh	3	1	--	--	--	--
Fisher	10	6	--	--	--	--
Golfer	1	1	--	--	--	--
Hunter	61	32	0.2	2.0	4.4	13.4
Mental	7	5	--	--	--	--
Mountain Biker	8	3	--	--	--	--
Mushroom Picker	1	1	--	--	--	--
Other	4	1	--	--	--	--
Picker	1	0	--	--	--	--
Psychotic	4	1	--	--	--	--
Rafter	4	2	--	--	--	--
Retarded	1	1	--	--	--	--
Runner	2	2	--	--	--	--
Snow Boarder	1	1	--	--	--	--
Tramper	118	49	1.0	3.0	5.5	18.4
Vehicle	13	5	--	--	--	--
Walker	47	18	0.5	1.8	4.4	20.0
Worker	14	10	--	--	--	--
Youth	4	2	--	--	--	--

Table 7: Distances (km) from LKP, by Subject Category in MP-All. N is the total number of cases in this dataset, and N_d is the number reporting d . (50% is the median.)

	N	N_s	Well	Injured	Doa	No Trace
Abduction	1	1	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Aircraft	7	7	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Atv	2	2	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Autistic	3	3	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Base Jumpers	1	1	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Beacon	1	1	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Boater	6	6	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Caver	3	3	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Child	16	16	16 (100%)	0 (0%)	0 (0%)	0 (0%)
Climber	24	24	21 (87%)	1 (4%)	2 (8%)	0 (0%)
Criminal	3	3	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Dementia	38	38	32 (84%)	6 (15%)	0 (0%)	0 (0%)
Despondent	27	25	13 (52%)	0 (0%)	9 (36%)	3 (12%)
Epirb	2	1	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Etoh	3	3	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Fisher	10	10	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Golfer	1	1	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Hunter	61	61	53 (86%)	3 (4%)	5 (8%)	0 (0%)
Mental	7	7	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Mountain Biker	8	8	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Mushroom Picker	1	1	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Other	4	4	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Picker	1	1	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Psychotic	4	4	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Rafter	4	4	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Retarded	1	1	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Runner	2	2	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Snow Boarder	1	1	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Tramper	118	117	108 (92%)	5 (4%)	4 (3%)	0 (0%)
Vehicle	13	13	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Walker	47	47	38 (80%)	4 (8%)	3 (6%)	2 (4%)
Worker	14	14	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Youth	4	4	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)

Table 8: Subject Status by Subject Category in MP-All. N is the total number of cases in this dataset, and N_s is the number reporting status. (Percents rounded to nearest whole number.)

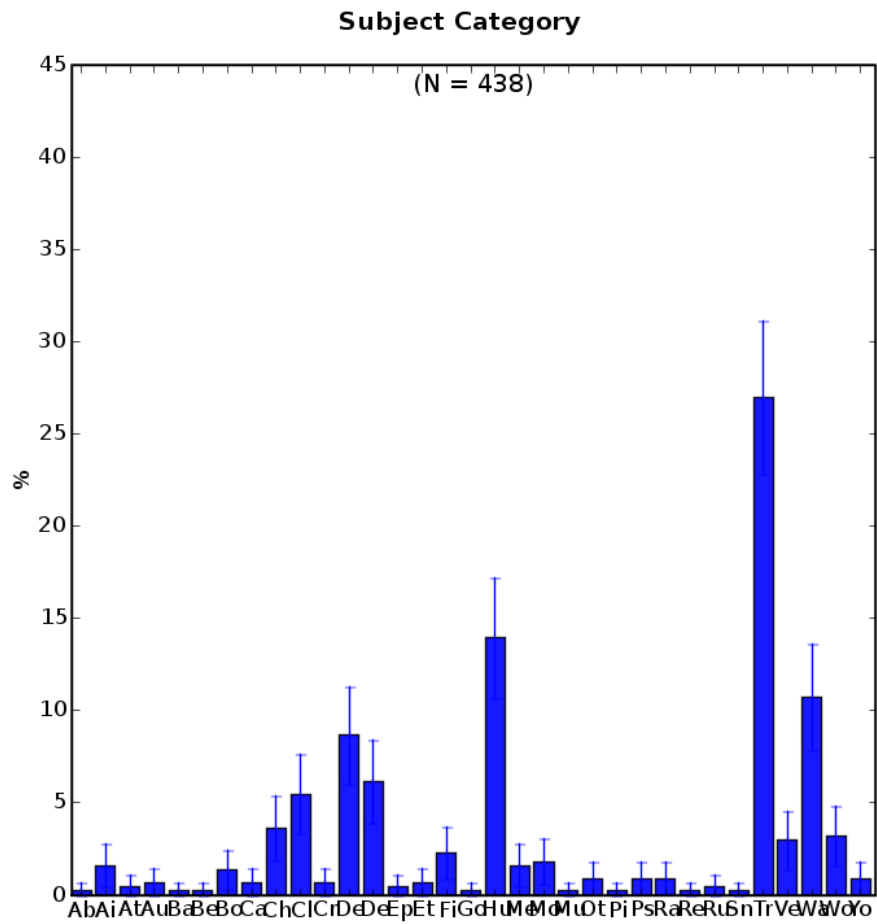


Figure 19: Distribution of Subject Category in MP-All.

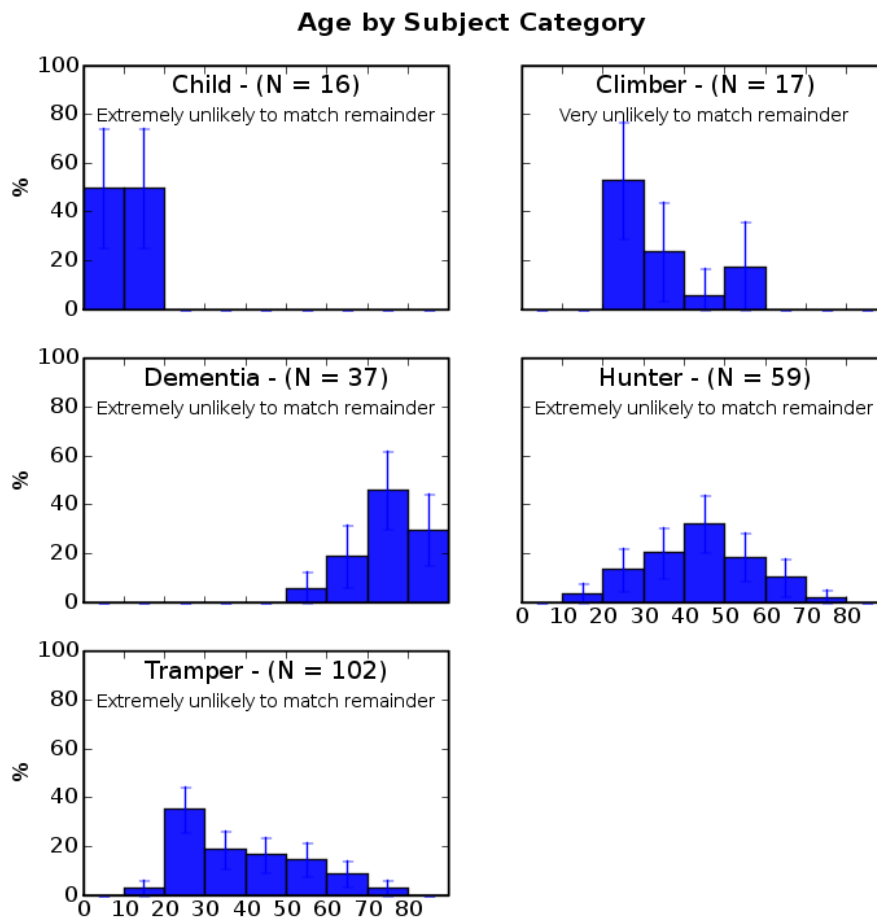


Figure 20: Age (yrs) by Subject Category in MP-All. Bars show 95% confidence intervals. Only categories *differing* from the remaining data are shown. For others, see Section 3.1. Categories with fewer than 15 cases not shown.

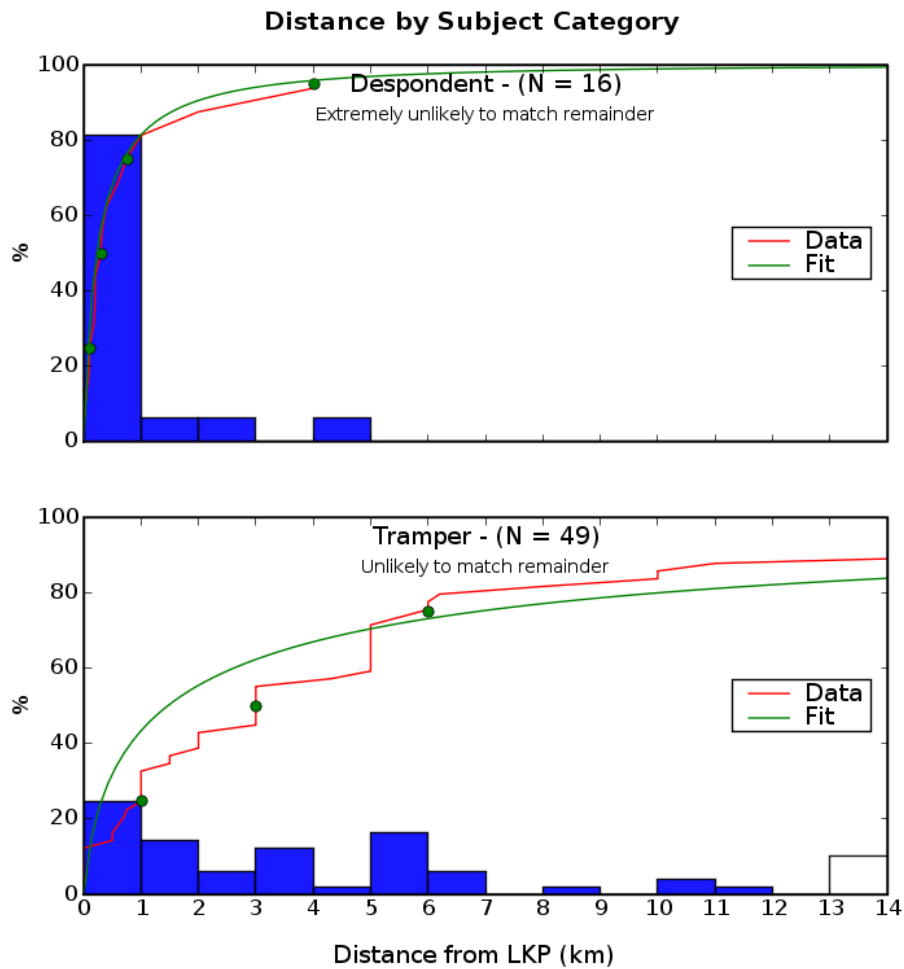


Figure 21: Distance From LKP (km) by Subject Category in MP-All. Lines show cumulative percent. Dots mark 25%, 50%, 75%, and 95% points (some of which may be off the graph). Only categories *differing* from the remaining data are shown. For others, see Section 3.1. Categories with fewer than 15 cases not shown.

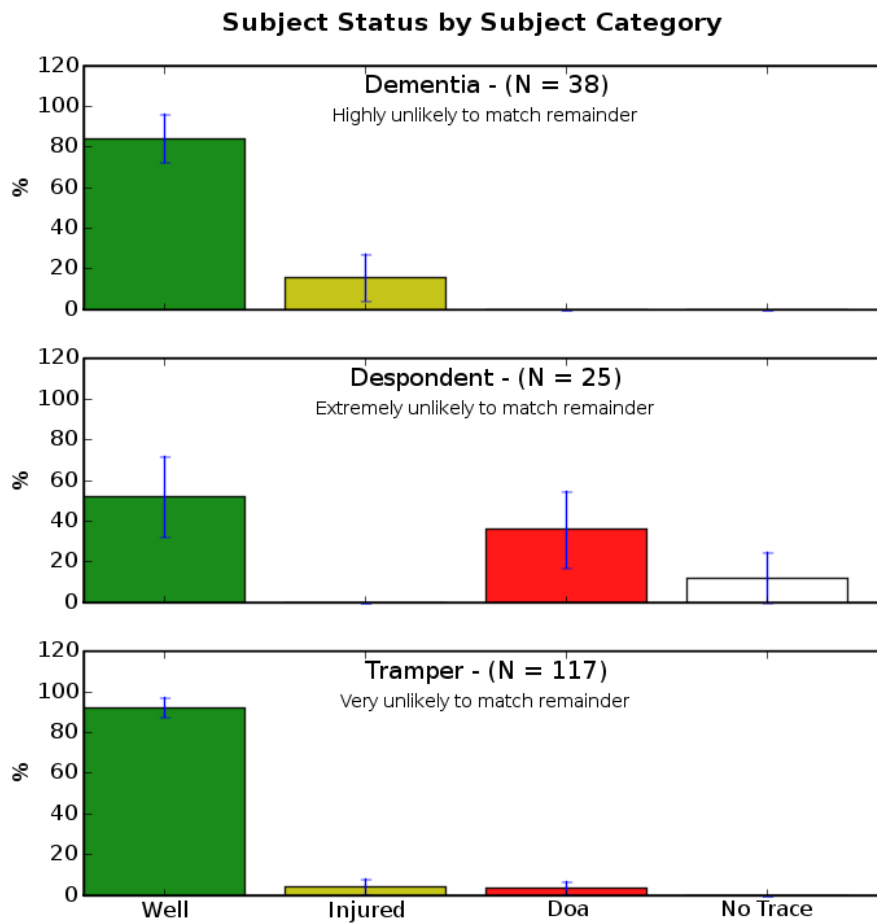


Figure 22: Subject Status by Subject Category in MP-All. Bars show 95% confidence intervals. Only categories *differing* from the remaining data are shown. For others, see Section 3.1. Categories with fewer than 15 cases not shown.

Figure 23: Subj Found Feature by Subject Category in MP-All *No categories were reliably different from the remainder.* See Section 3.1.

3.5 Subject Activity

	N	N_d	Percentiles			
			25%	50%	75%	95%
Abduction	1	1	--	--	--	--
Aircraft	7	2	--	--	--	--
Atv	2	2	--	--	--	--
Base Jumpers	1	0	--	--	--	--
Beacon	1	0	--	--	--	--
Boating	6	3	--	--	--	--
Caver	3	2	--	--	--	--
Climbing	24	5	--	--	--	--
Criminal	3	2	--	--	--	--
Despondent	27	16	0.1	0.2	0.6	2.5
Driving	13	5	--	--	--	--
Epirb	2	0	--	--	--	--
Etoh	2	0	--	--	--	--
Fishing	10	6	--	--	--	--
Golfer	1	1	--	--	--	--
Hunting	61	32	0.2	2.0	4.4	13.4
Mountain Biking	8	3	--	--	--	--
Mushroom Picker	1	1	--	--	--	--
Other	4	1	--	--	--	--
Picker	1	0	--	--	--	--
Rafting	4	2	--	--	--	--
Retarded	1	1	--	--	--	--
Runner	2	2	--	--	--	--
Snow Boarder	1	1	--	--	--	--
Tramping	118	49	1.0	3.0	5.5	18.4
Walkaway	68	48	0.6	1.5	5.0	15.0
Walking	48	19	0.5	2.0	4.2	20.0
Working	14	10	--	--	--	--
Youth	4	2	--	--	--	--

Table 9: Distances (km) from LKP, by Subject Activity in MP-All. N is the total number of cases in this dataset, and N_d is the number reporting d . (50% is the median.)

	N	N_s	Well	Injured	Doa	No Trace
Abduction	1	1	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Aircraft	7	7	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Atv	2	2	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Base Jumpers	1	1	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Beacon	1	1	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Boating	6	6	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Caver	3	3	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Climbing	24	24	21 (87%)	1 (4%)	2 (8%)	0 (0%)
Criminal	3	3	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Despondent	27	25	13 (52%)	0 (0%)	9 (36%)	3 (12%)
Driving	13	13	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Epirb	2	1	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Etoh	2	2	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Fishing	10	10	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Golfer	1	1	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Hunting	61	61	53 (86%)	3 (4%)	5 (8%)	0 (0%)
Mountain Biking	8	8	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Mushroom Picker	1	1	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Other	4	4	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Picker	1	1	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Rafting	4	4	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Retarded	1	1	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Runner	2	2	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Snow Boarder	1	1	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Tramping	118	117	108 (92%)	5 (4%)	4 (3%)	0 (0%)
Walkaway	68	68	60 (88%)	7 (10%)	0 (0%)	1 (1%)
Walking	48	48	38 (79%)	4 (8%)	4 (8%)	2 (4%)
Working	14	14	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
Youth	4	4	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)

Table 10: Subject Status by Subject Activity in MP-All. N is the total number of cases in this dataset, and N_s is the number reporting status. (Percents rounded to nearest whole number.)

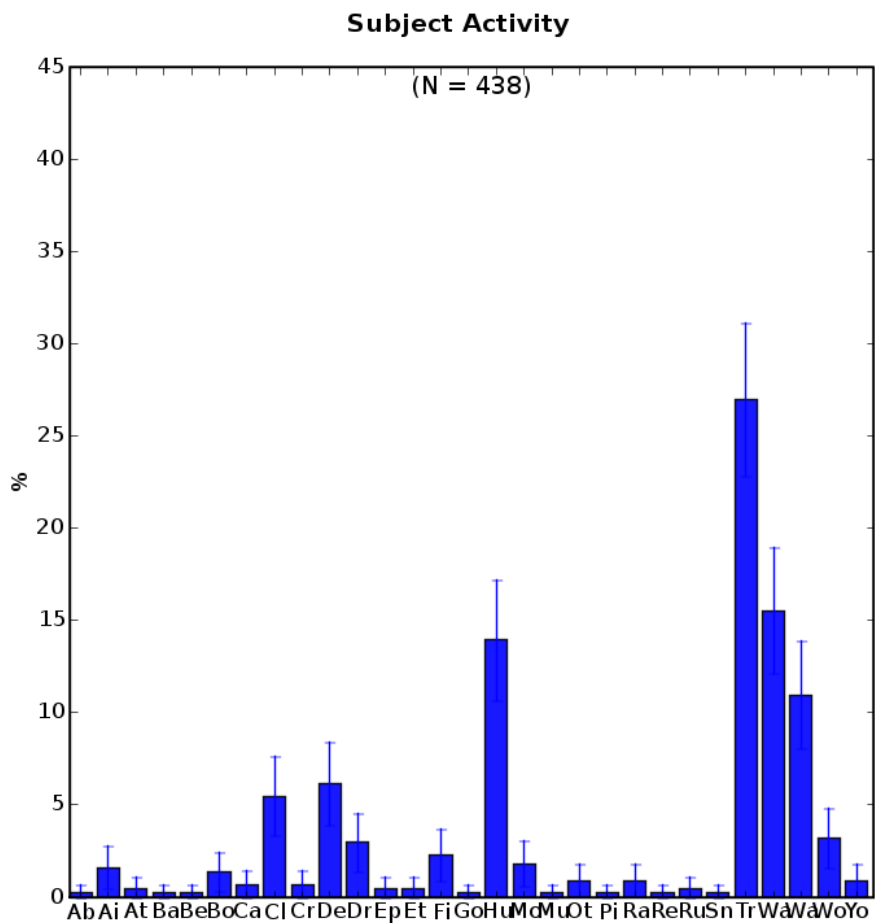


Figure 24: Distribution of Subject Activity in MP-All.

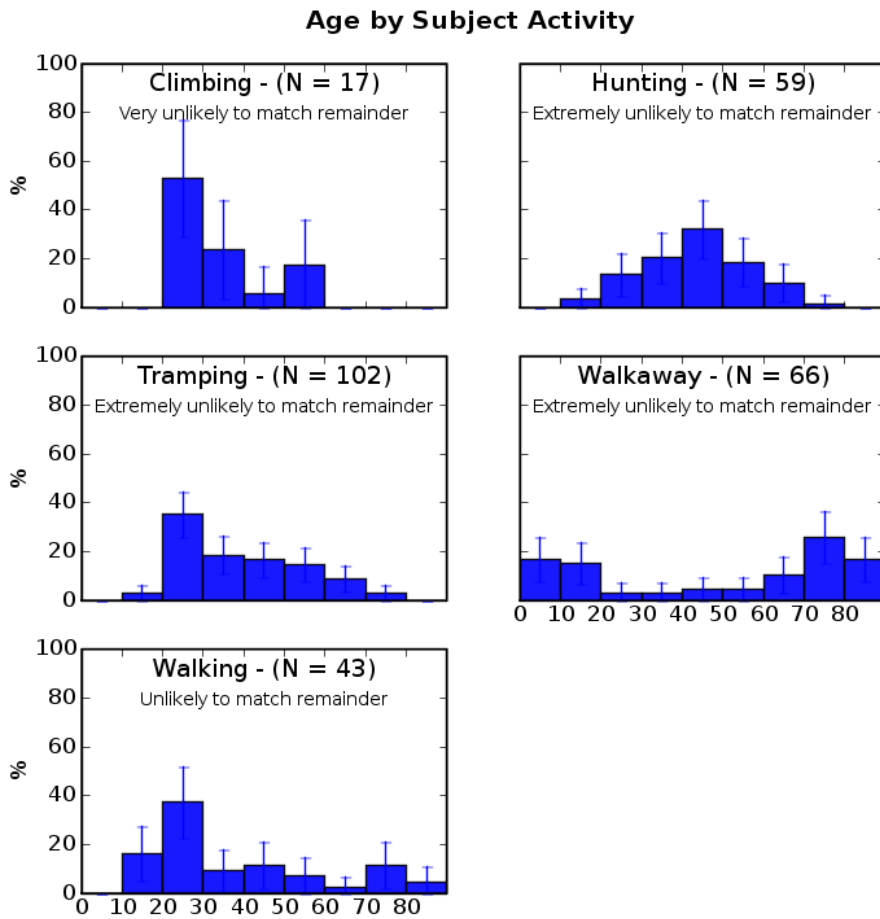


Figure 25: Age (yrs) by Subject Activity in MP-All. Bars show 95% confidence intervals. Only categories *differing* from the remaining data are shown. For others, see Section 3.1. Categories with fewer than 15 cases not shown.

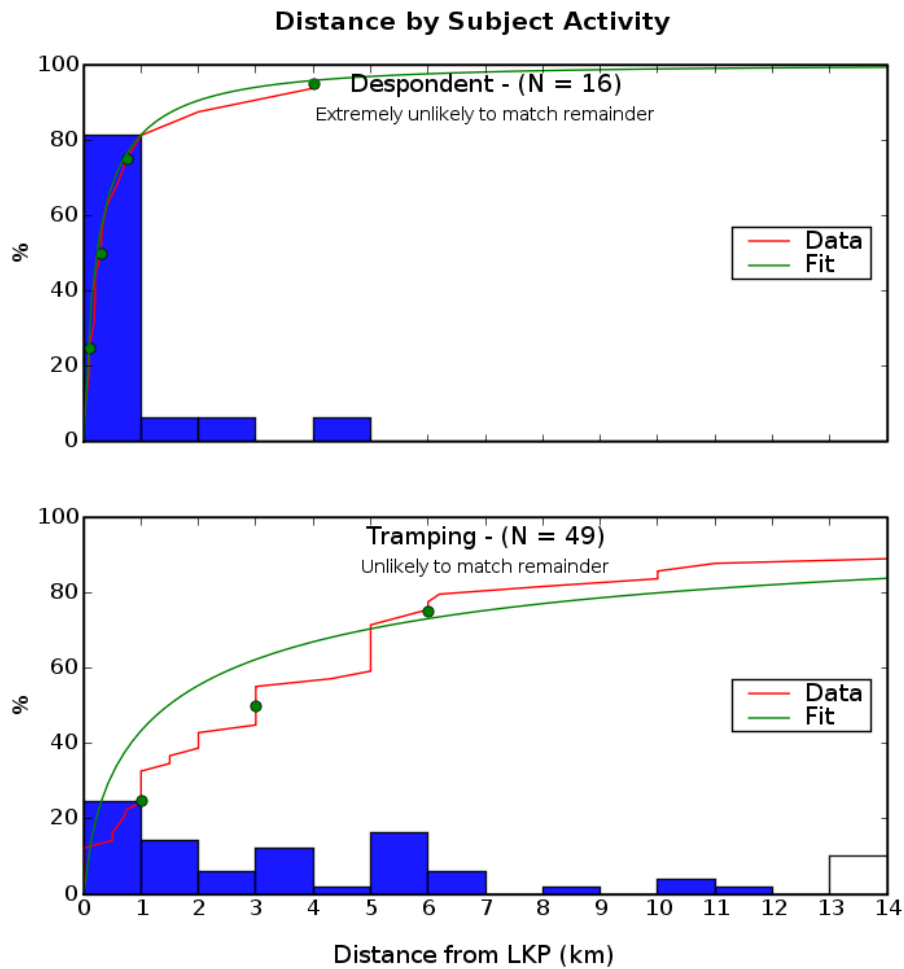


Figure 26: Distance From LKP (km) by Subject Activity in MP-All. Lines show cumulative percent. Dots mark 25%, 50%, 75%, and 95% points (some of which may be off the graph). Only categories *differing* from the remaining data are shown. For others, see Section 3.1. Categories with fewer than 15 cases not shown.

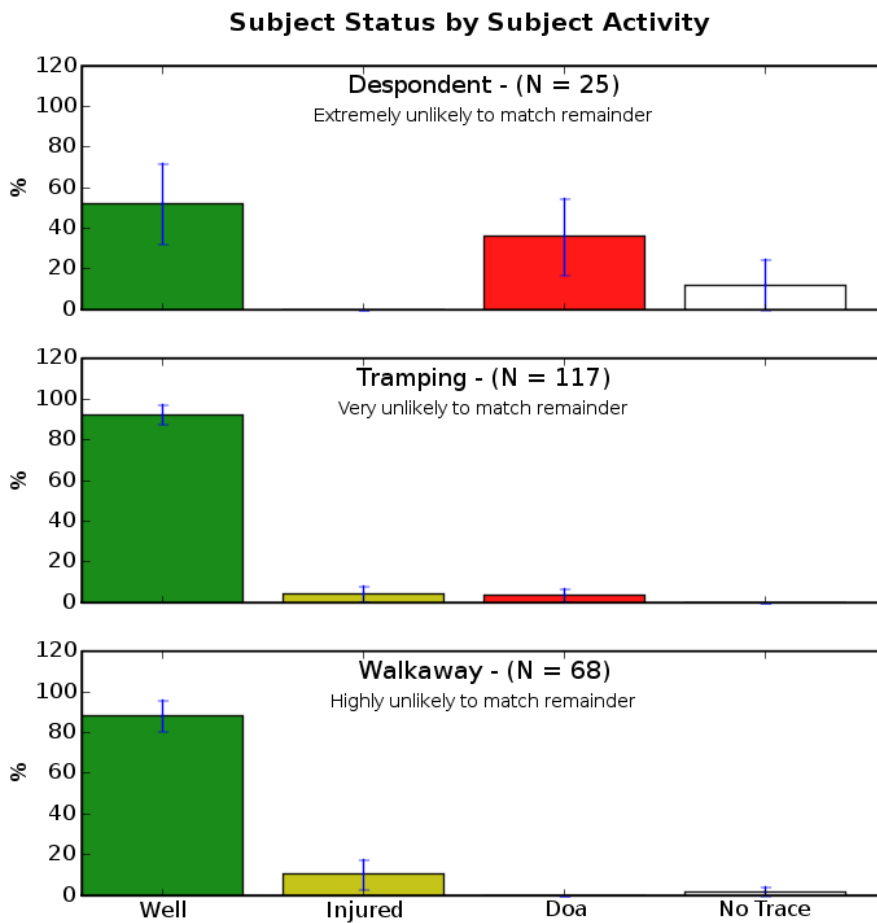


Figure 27: Subject Status by Subject Activity in MP-All. Bars show 95% confidence intervals. Only categories *differing* from the remaining data are shown. For others, see Section 3.1. Categories with fewer than 15 cases not shown.

Figure 28: Subj Found Feature by Subject Activity in MP-All *No categories were reliably different from the remainder.* See Section 3.1.

3.6 Group Type

	N	N_d	Percentiles			
			25%	50%	75%	95%
Ac	28	16	0.0	1.0	5.0	5.1
F	65	35	0.7	2.0	4.5	23.2
Ff	9	6	--	--	--	--
M	188	109	0.5	1.0	4.5	18.4
Mf	56	19	0.3	0.6	7.1	26.8
Mm	65	28	1.1	2.5	6.5	22.6

Table 11: Distances (km) from LKP, by Group Type in MP-All. N is the total number of cases in this dataset, and N_d is the number reporting d . (50% is the median.)

	N	N_s	Well	Injured	Doa	No Trace
Ac	28	28	27 (96%)	1 (3%)	0 (0%)	0 (0%)
F	65	63	53 (84%)	4 (6%)	4 (6%)	2 (3%)
Ff	9	9	-- (- -%)	-- (- -%)	-- (- -%)	-- (- -%)
M	188	187	145 (77%)	13 (6%)	25 (13%)	4 (2%)
Mf	56	56	53 (94%)	0 (0%)	3 (5%)	0 (0%)
Mm	65	65	62 (95%)	2 (3%)	1 (1%)	0 (0%)

Table 12: Subject Status by Group Type in MP-All. N is the total number of cases in this dataset, and N_s is the number reporting status. (Percents rounded to nearest whole number.)

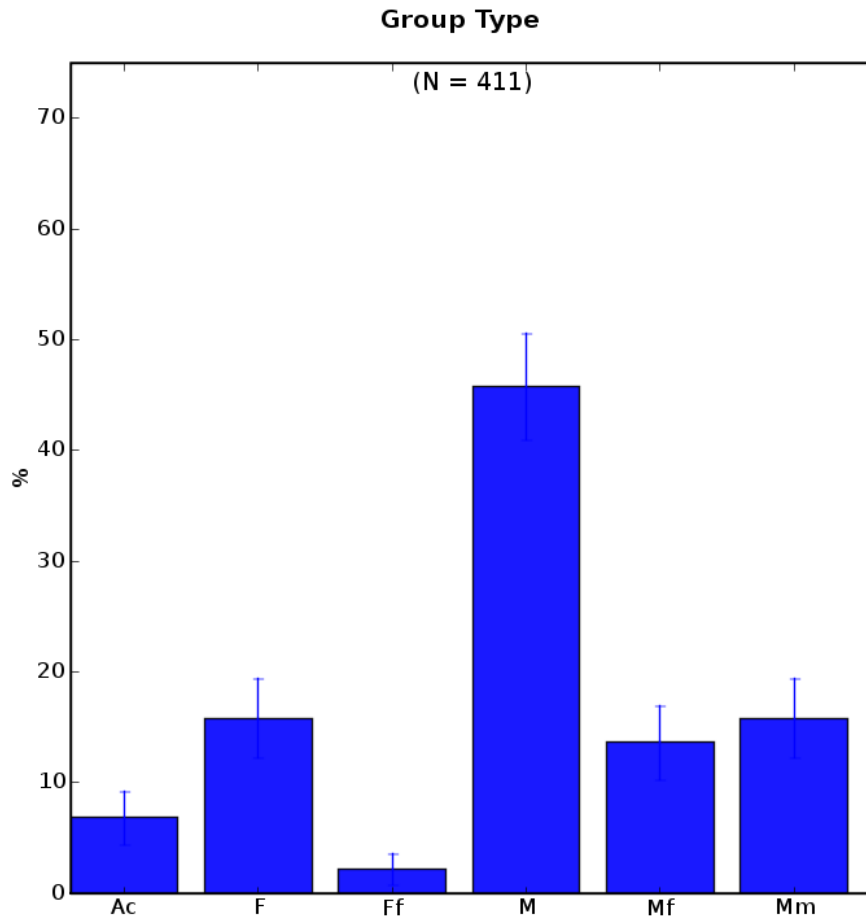


Figure 29: Distribution of Group Type in MP-All.

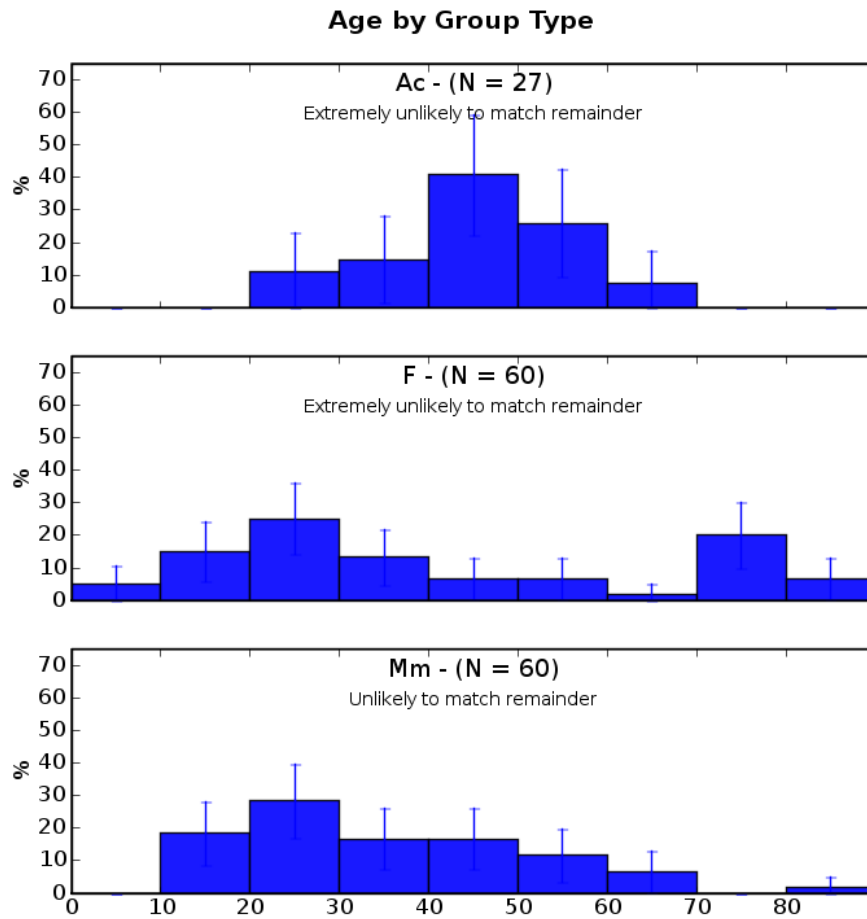


Figure 30: Age (yrs) by Group Type in MP-All. Bars show 95% confidence intervals. Only categories *differing* from the remaining data are shown. For others, see Section 3.1. Categories with fewer than 15 cases not shown.

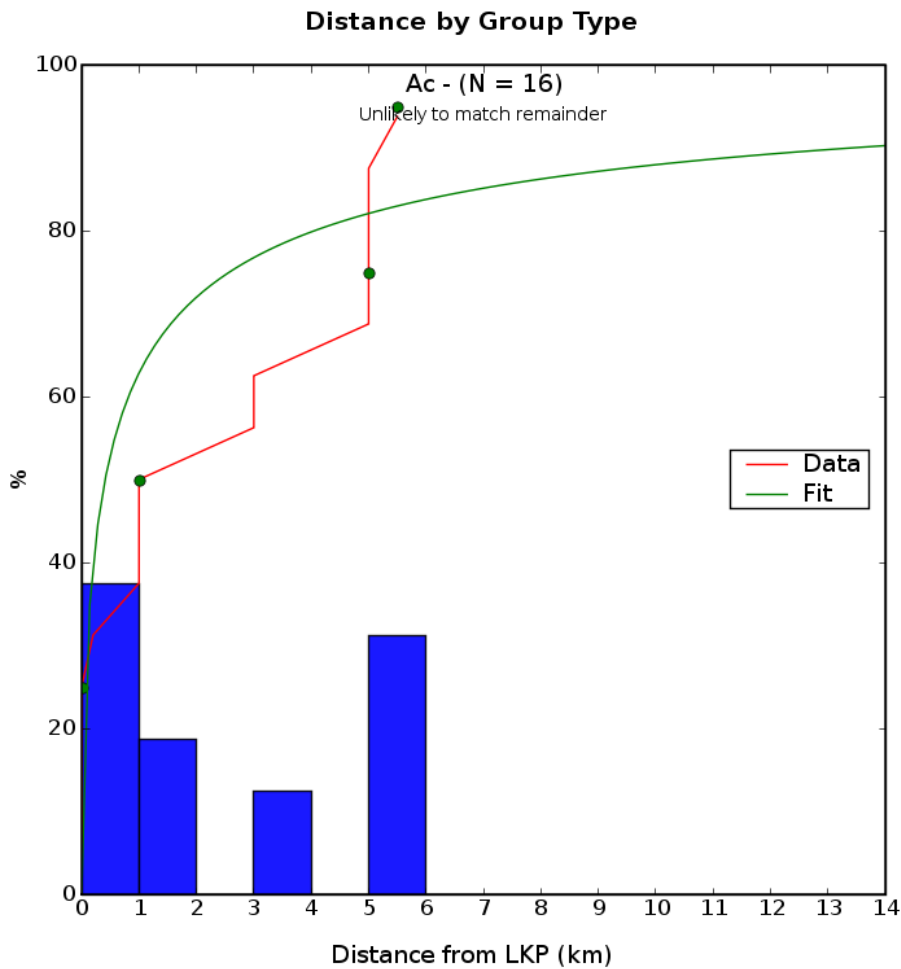


Figure 31: Distance From LKP (km) by Group Type in MP-All. Lines show cumulative percent. Dots mark 25%, 50%, 75%, and 95% points (some of which may be off the graph). Only categories *differing* from the remaining data are shown. For others, see Section 3.1. Categories with fewer than 15 cases not shown.

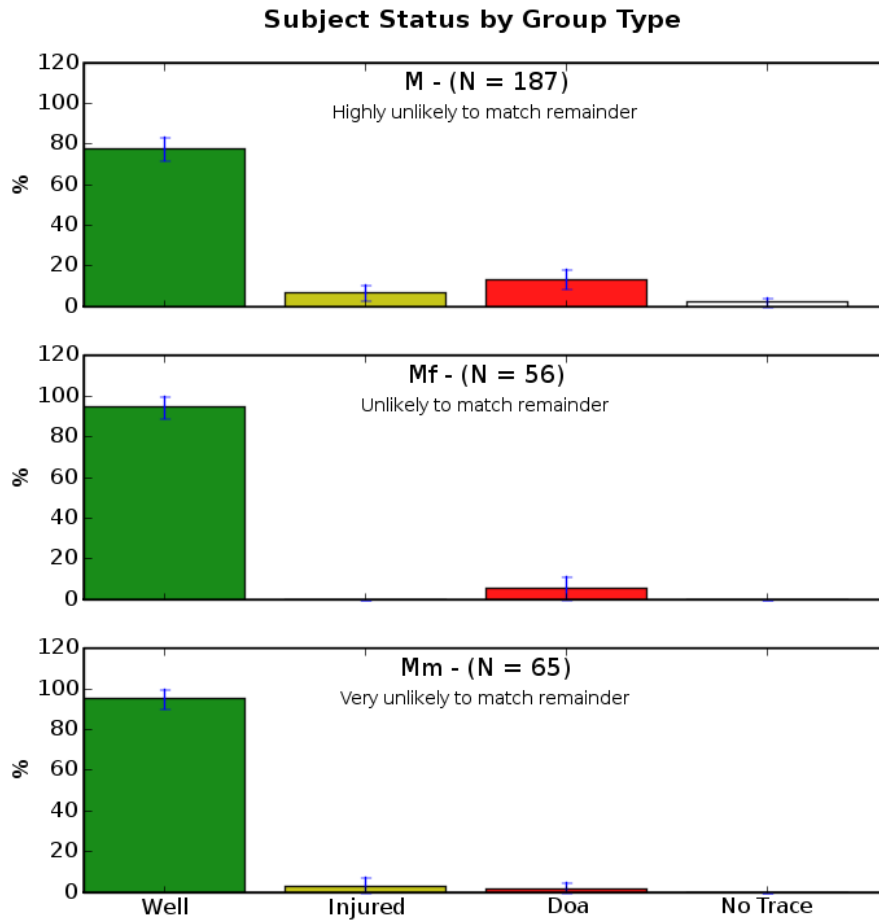


Figure 32: Subject Status by Group Type in MP-All. Bars show 95% confidence intervals. Only categories *differing* from the remaining data are shown. For others, see Section 3.1. Categories with fewer than 15 cases not shown.

Figure 33: Subj Found Feature by Group Type in MP-All *No categories were reliably different from the remainder.* See Section 3.1.

4 Final Remarks

Once again, this is a preliminary draft prepared for the NZ LSAR conference. It has not been fully Quality-Checked. A final version will be made available on the *SARBayes* website, as well as directly to the data providers. We certainly hope it has been interesting, and look forward to working on the larger International SAR Incident Database.

Thanks again to all who were involved in collecting the data and providing it to us for this work.