Washington State Missing Person Behavior

Robert Koester

Charles R. Twardy

`sarbayes.org`

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Contents

1 Introduction

This is a preliminary view of the Washington State SAR data, prepared specially for the annual Washington State SAR Conference (May 2006). It is a *draft*. It has not been reviewed for quality. A final version will be posted on the SAR*Bayes* website `sarbayes.org` when ready. Out of consideration for space and reader patience, we have chosen to eliminate the methodology sections, which will be part of the forthcoming Australian SAR report. They are available upon request.

Our work on the report was funded by Fronterra as part of the Internation 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 May 18, 2006

We have 581 cases, including groups (which count as a single case).

Of those cases, 399 were Searches. (The Incident Types were: Standby, False Report, Search, Recovery, Rescue.)

Of the Search cases, 120 were groups, (comprising 292 people), and 279 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 Activity, Find Location and Traditional Category. However, the distributions for Find Location and Traditional Category are available in figures in this section.

	N	N_r	Percentiles			
			25%	50%	75%	95%
DistFrLKP	399	184	0.5	1.8	4.9	18.8
Age	399	342	20.0	38.0	52.0	80.9
TotalTimeLost	399	281	4.5	10.0	19.5	71.4

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.)

Distribution of Values

	N	N_s						
EcoRegion Division	399	386	240 51 (13%)	330 3 (0%)	340 23 (5%)	M240 224 (58%)	M330 85 (22%)	
Experience	399	78	Much 26 (33%)	None 6 (7%)	Some 46 (58%)			
Group Type	399	375	Ac 12 (3%)	F 70 (18%)	Ff 9 (2%)	M 217 (57%)	Mf 19 (5%)	Mm 48 (12%)
Mental Fitness	399	91	Alzheimers 1 (1%)	Angry 5 (5%)	Stable 63 (69%)	Troubled 22 (24%)		
Physical Fitness	399	123	Fair 18 (14%)	Good 65 (52%)	Poor 21 (17%)	Unknown 19 (15%)		
Population Density	399	288	Wilderness 184 (63%)	Rural 53 (18%)	Suburban 31 (10%)	Urban 20 (6%)		
Sex	399	375	F 89 (23%)	M 286 (76%)				
Status	399	374	Well 242 (64%)	Injured 68 (18%)	Doa 38 (10%)	No Trace 26 (6%)		

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.)

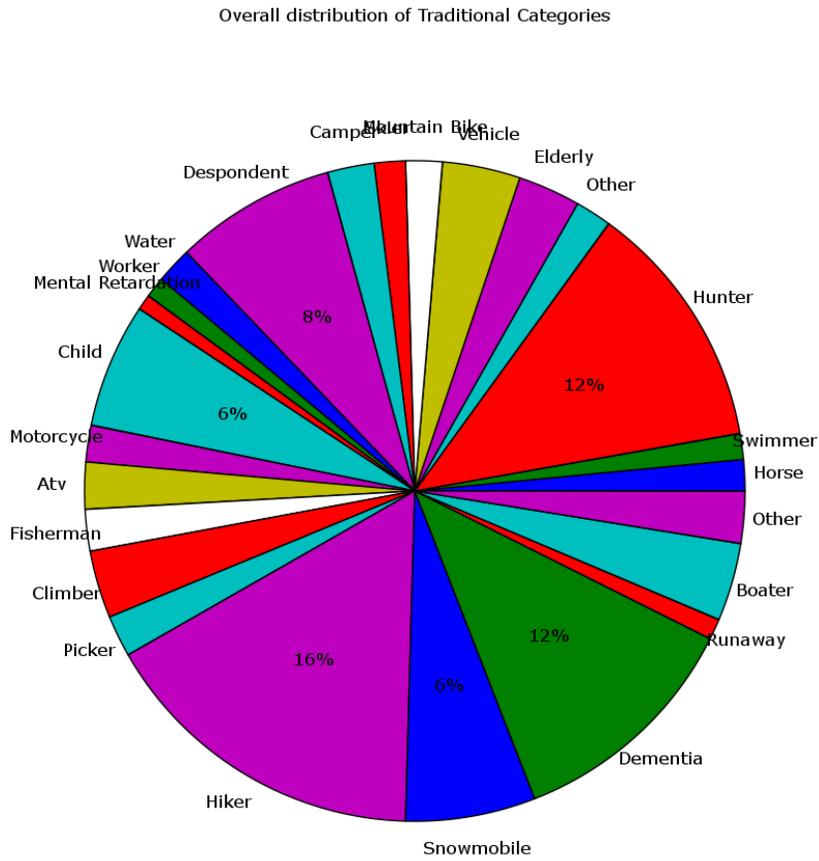Overall distribution of Traditional Categories

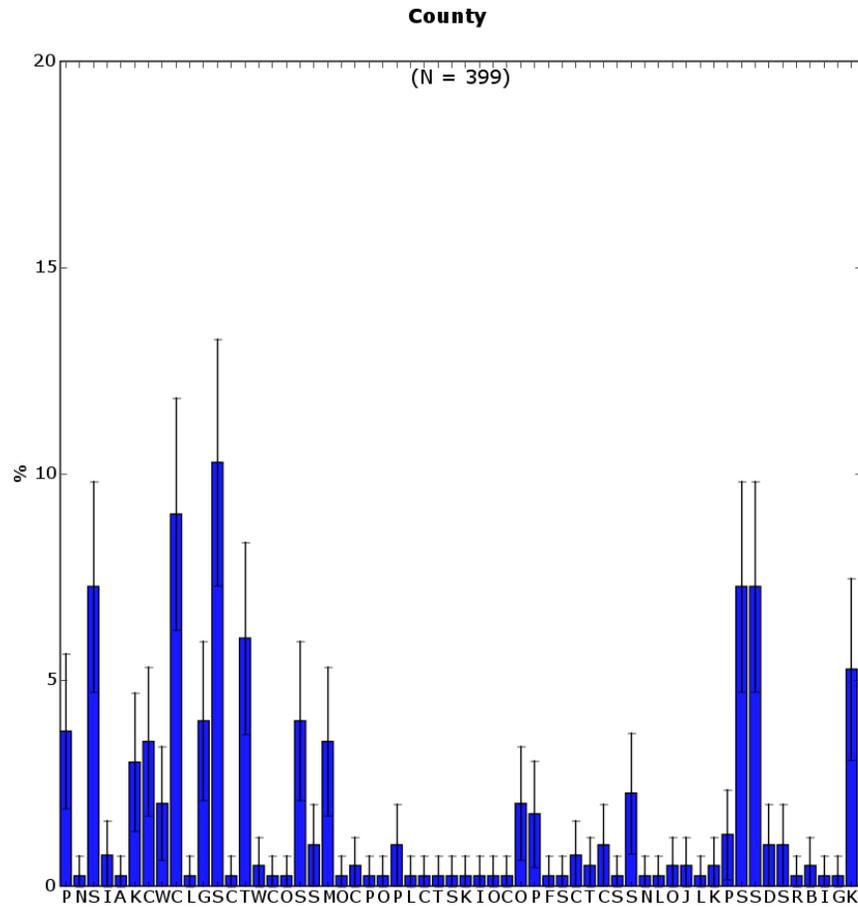Figure 1: Overall Category distribution in MP-All.

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

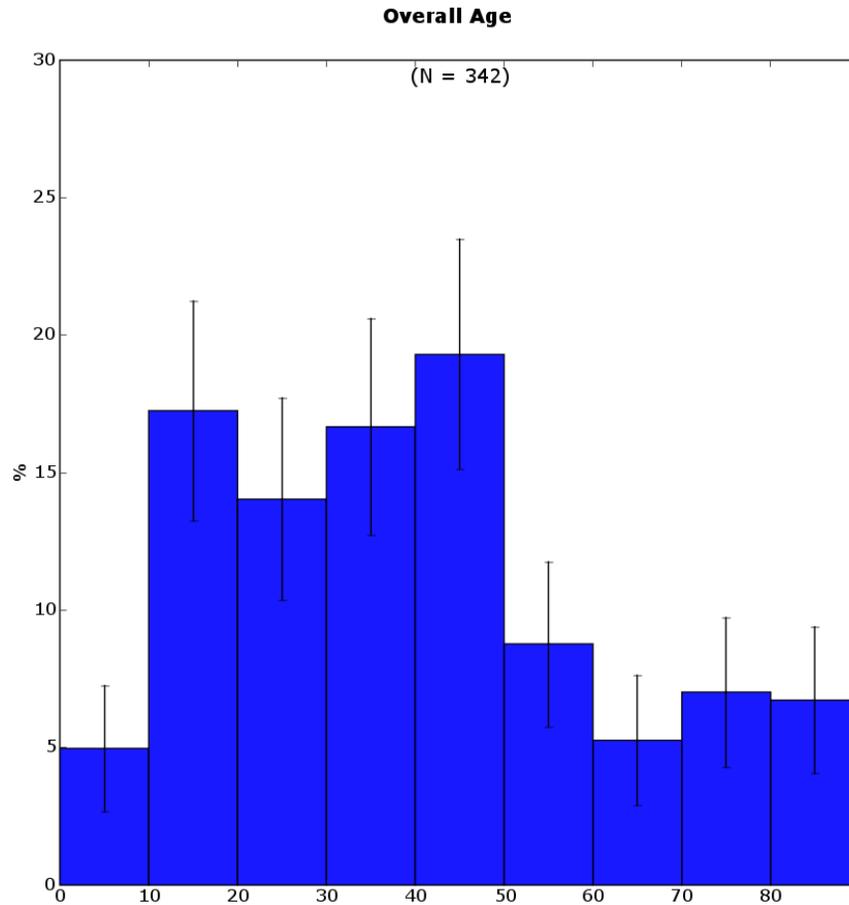Figure 3: Overall Age (yrs) in MP-All. Bars show 95% confidence intervals.
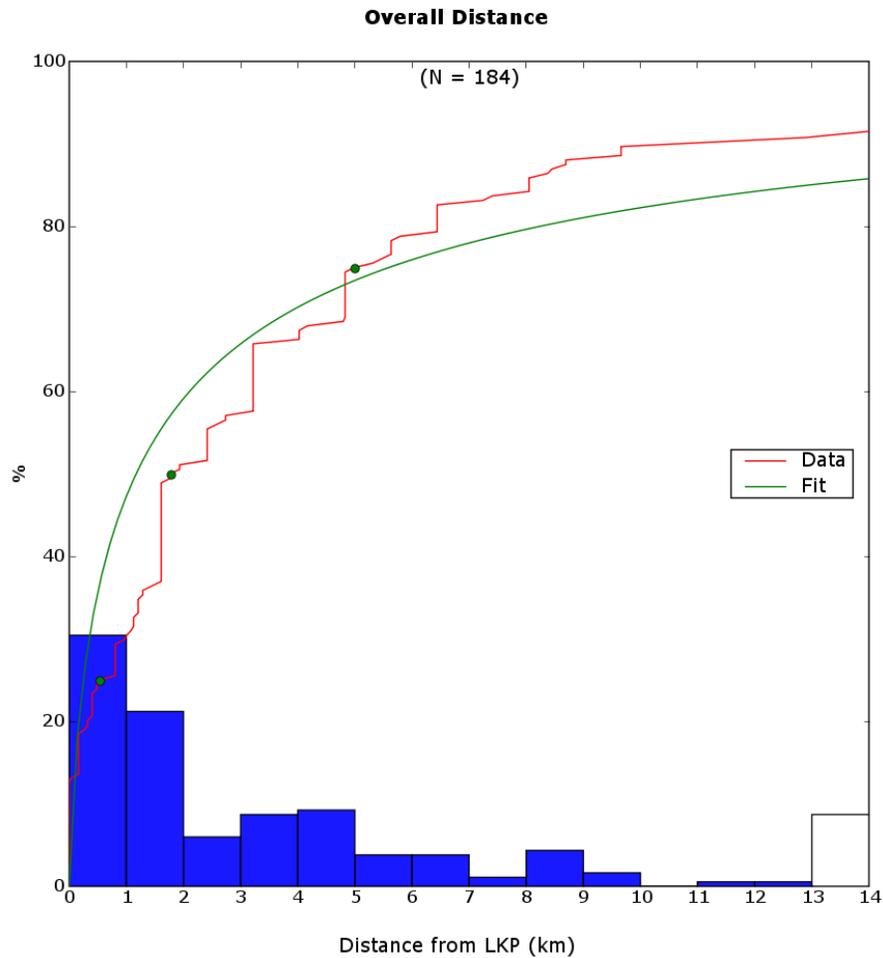
Overall Distance

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).
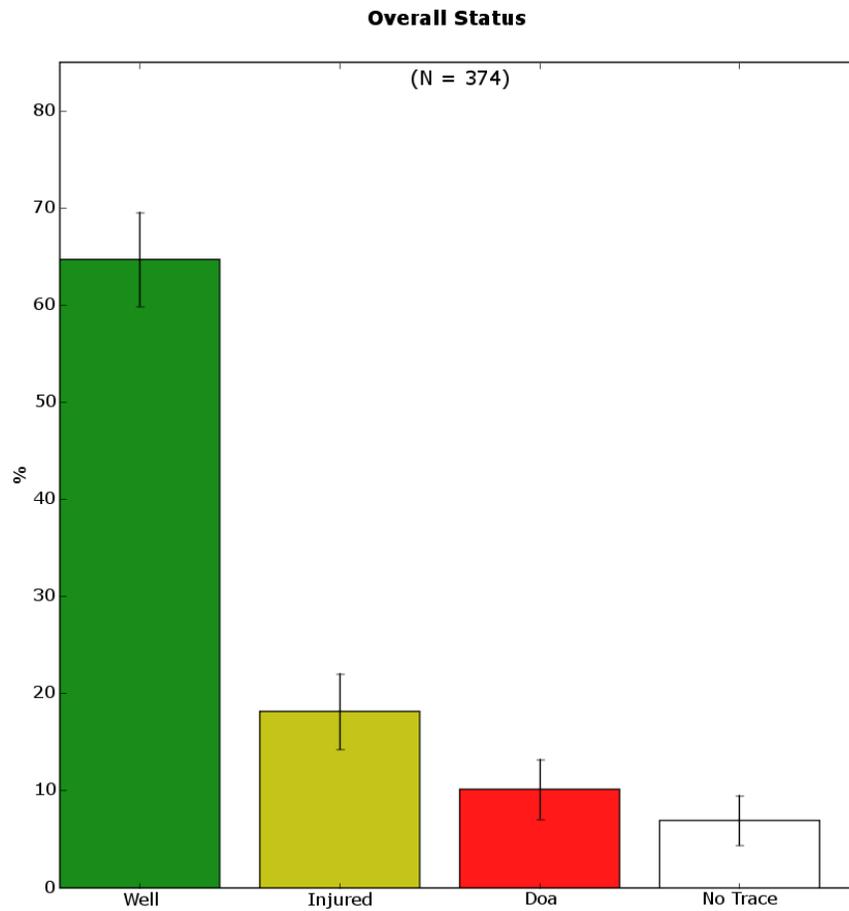
Figure 5: Overall Status in MP-All. Bars show 95% confidence intervals.
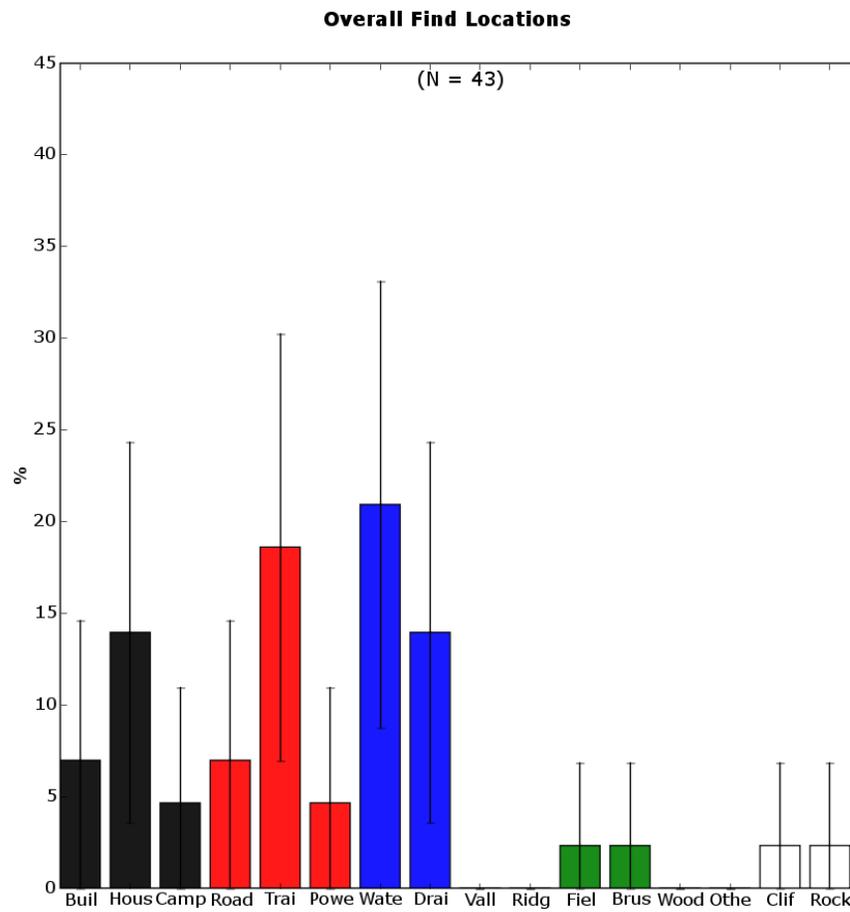
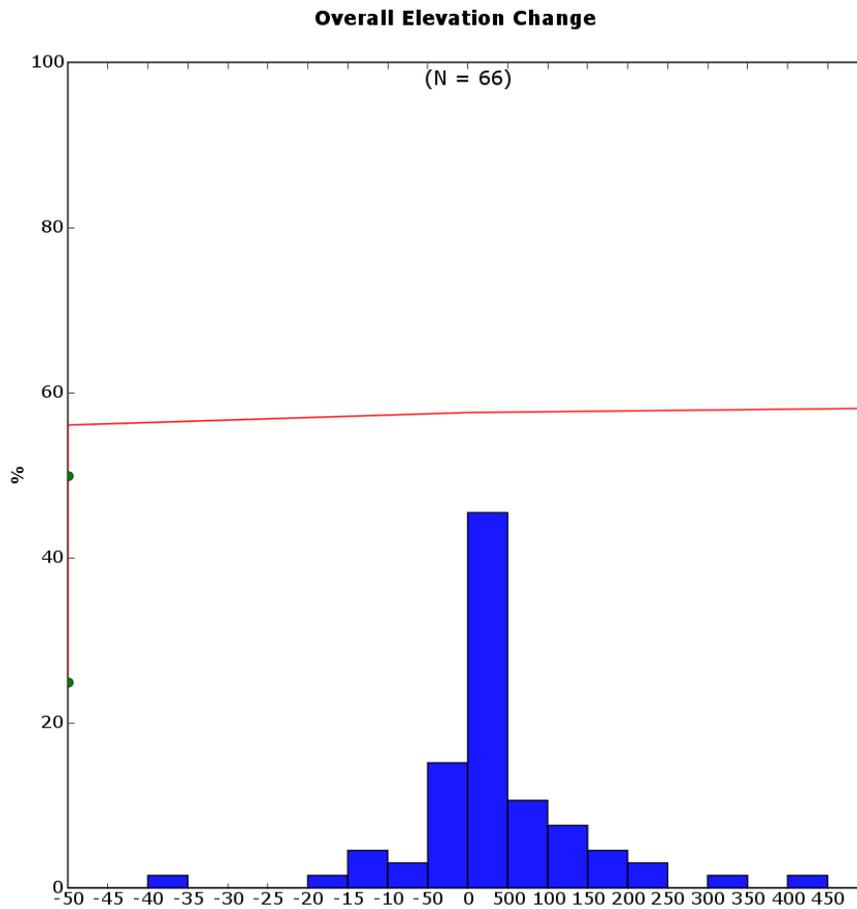Figure 6: Overall Find Location in MP-All. Bars show 95% confidence intervals.

Figure 7: Overall Elevation Change in MP-All.

3.2   Scenario

	N	N_d	Percentiles			
			25%	50%	75%	95%
Avalanche	2	2	- -	- -	- -	- -
Criminal	2	1	- -	- -	- -	- -
Despondent	16	6	- -	- -	- -	- -
Drowned	10	4	- -	- -	- -	- -
Etoh	2	0	- -	- -	- -	- -
Evading	8	2	- -	- -	- -	- -
Investigative	44	0	- -	- -	- -	- -
Lost	88	53	0.8	2.4	4.0	9.7
Medical	7	4	- -	- -	- -	- -
Other	3	0	- -	- -	- -	- -
Overdue	50	29	1.6	3.2	5.3	15.5
Rescue	7	3	- -	- -	- -	- -
Trauma	23	11	- -	- -	- -	- -
Vehicle	1	0	- -	- -	- -	- -
Water	8	4	- -	- -	- -	- -

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
Avalanche	2	2	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Criminal	2	1	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Despondent	16	15	5 (33%)	5 (33%)	3 (20%)	2 (13%)
Drowned	10	10	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Etoh	2	2	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Evading	8	6	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Investigative	44	43	35 (81%)	2 (4%)	1 (2%)	5 (11%)
Lost	88	85	62 (72%)	16 (18%)	4 (4%)	3 (3%)
Medical	7	7	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Other	3	3	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Overdue	50	48	44 (91%)	3 (6%)	1 (2%)	0 (0%)
Rescue	7	5	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Trauma	23	21	3 (14%)	14 (66%)	4 (19%)	0 (0%)
Vehicle	1	1	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Water	8	7	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)

Table 4: 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.)
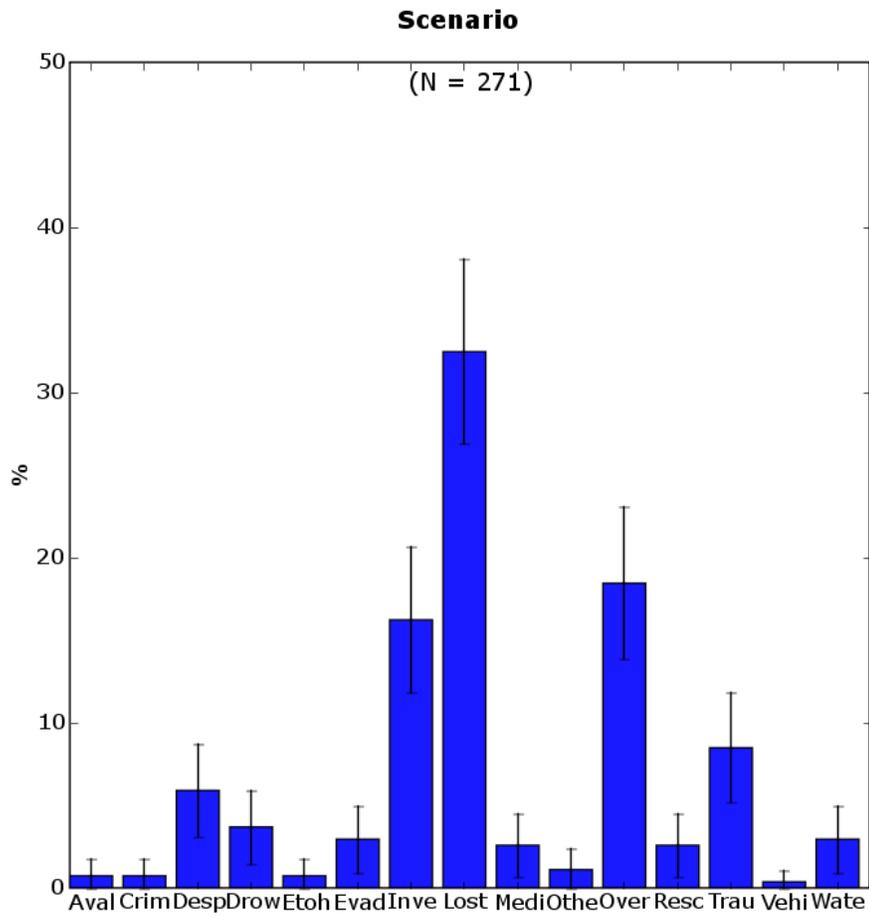
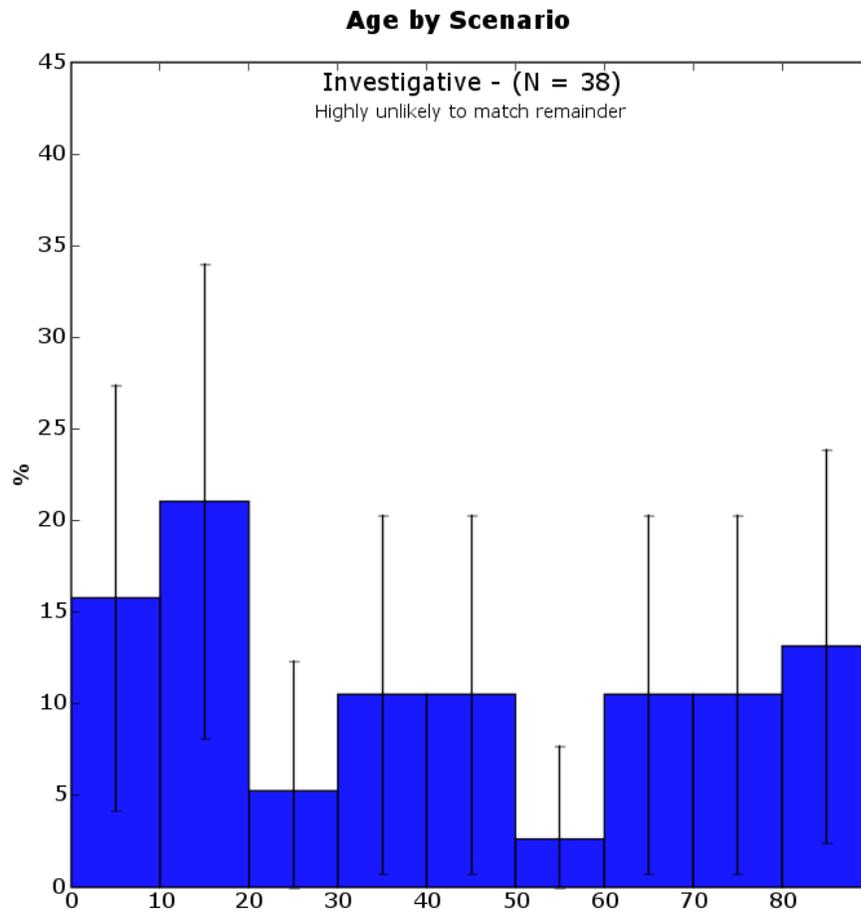Figure 8: Distribution of Scenario in MP-All.

Figure 9: 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.
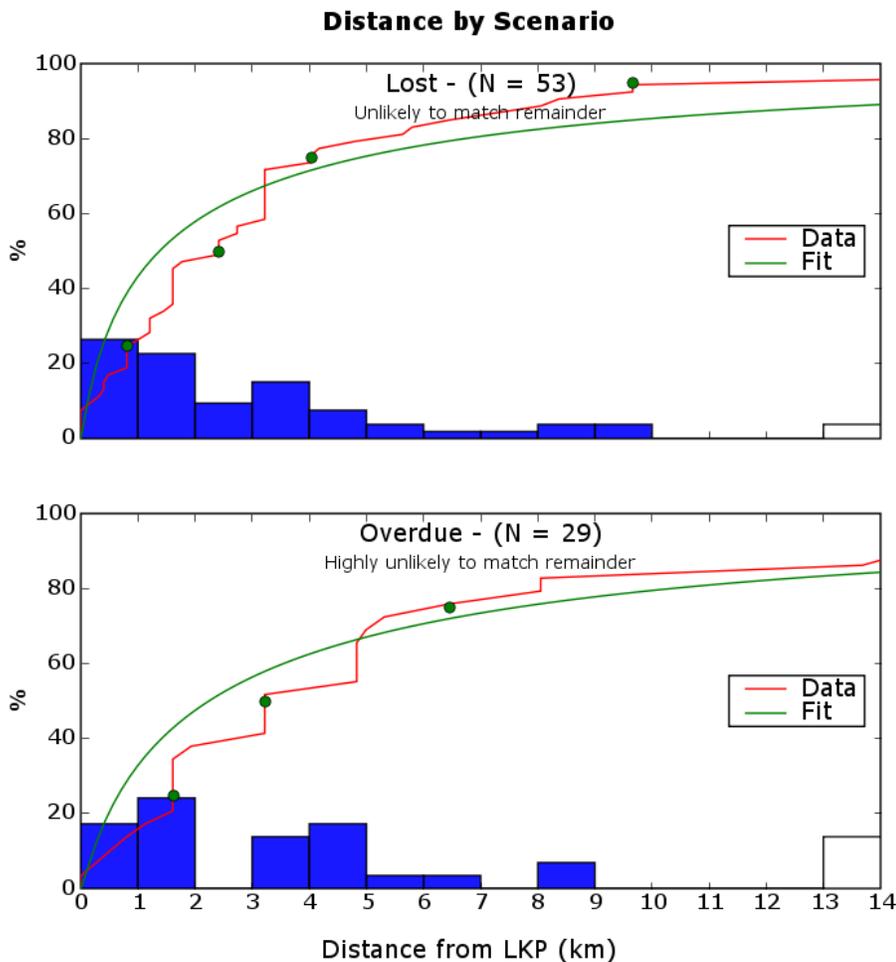
Figure 10: Distance From LKP (km) by Scenario in MP-All. Lines show cumulative percent. Dots mark 25%, 50%, 75%, and 95% points (some of which may be off the graph). Only categories *differing* from the remaining data are shown. For others, see Section 3.1. Categories with fewer than 15 cases not shown.

Figure 11: 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.

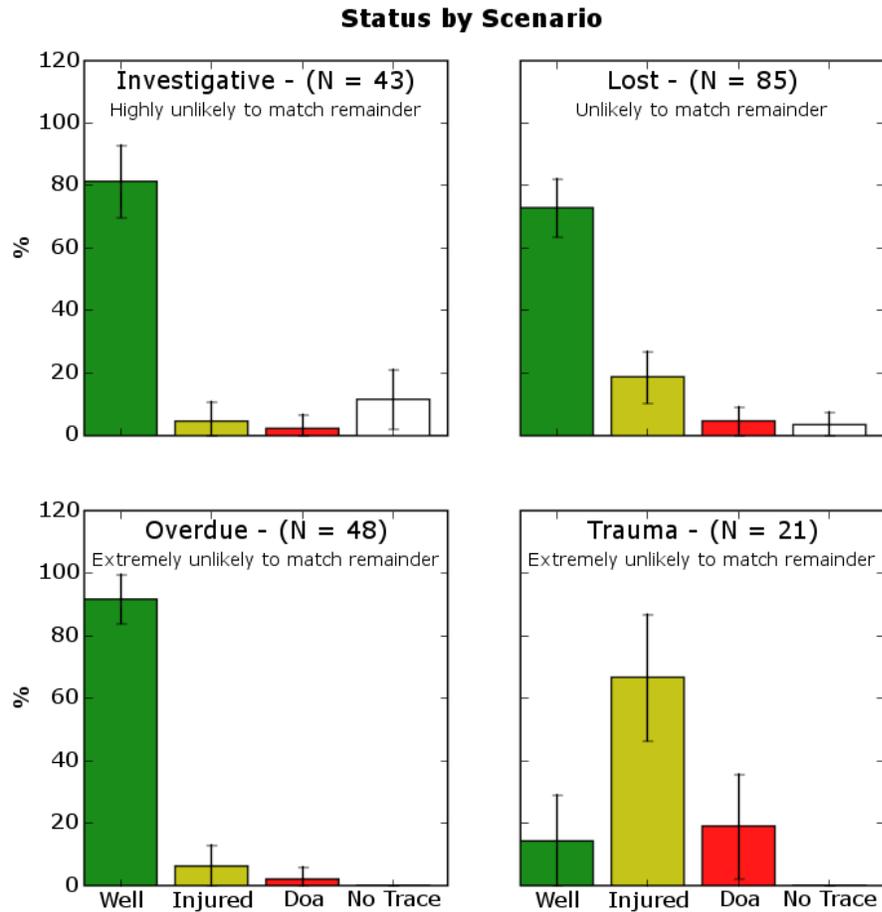Figure 12: Find Location by Scenario in MP-All *No categories were reliably different from the remainder.* See Section 3.1.

Figure 13: Elevation Change 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%	Percentiles 50%	Percentiles 75%	Percentiles 95%
Rural	53	25	0.2	1.6	5.0	7.9
Suburban	31	13	- -	- -	- -	- -
Urban	20	8	- -	- -	- -	- -
Wilderness	184	93	1.1	3.2	5.8	24.8

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	53	50	28 (56%)	8 (16%)	12 (24%)	2 (4%)
Suburban	31	30	20 (66%)	5 (16%)	3 (10%)	2 (6%)
Urban	20	18	8 (44%)	4 (22%)	1 (5%)	5 (27%)
Wilderness	184	175	113 (64%)	37 (21%)	15 (8%)	10 (5%)

Table 6: 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.)
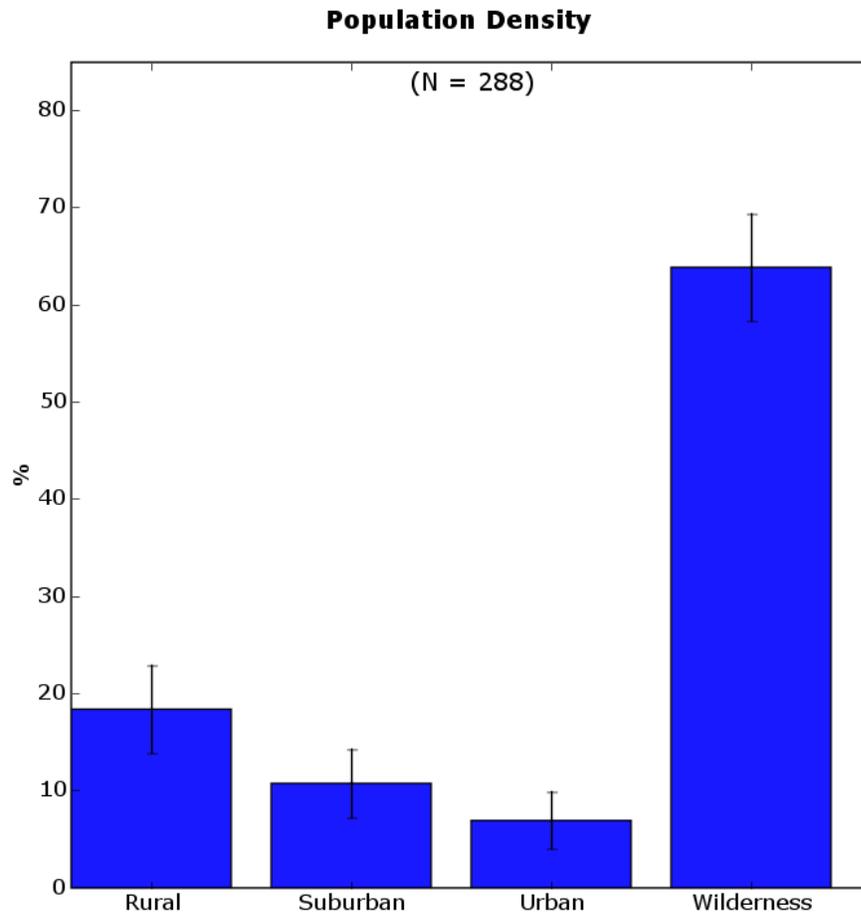
Figure 14: Distribution of Population Density in MP-All.

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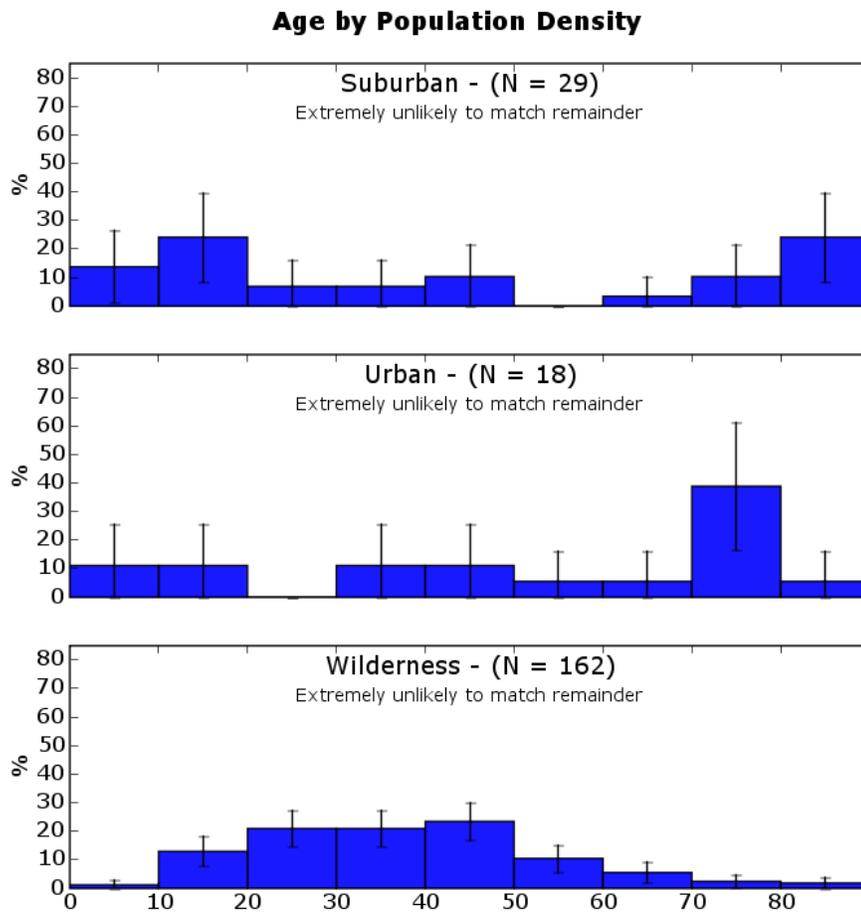
Figure 17: Status by Population Density in MP-All. Bars show 95% confidence intervals. Only categories *differing* from the remaining data are shown. For others, see Section 3.1. Categories with fewer than 15 cases not shown.

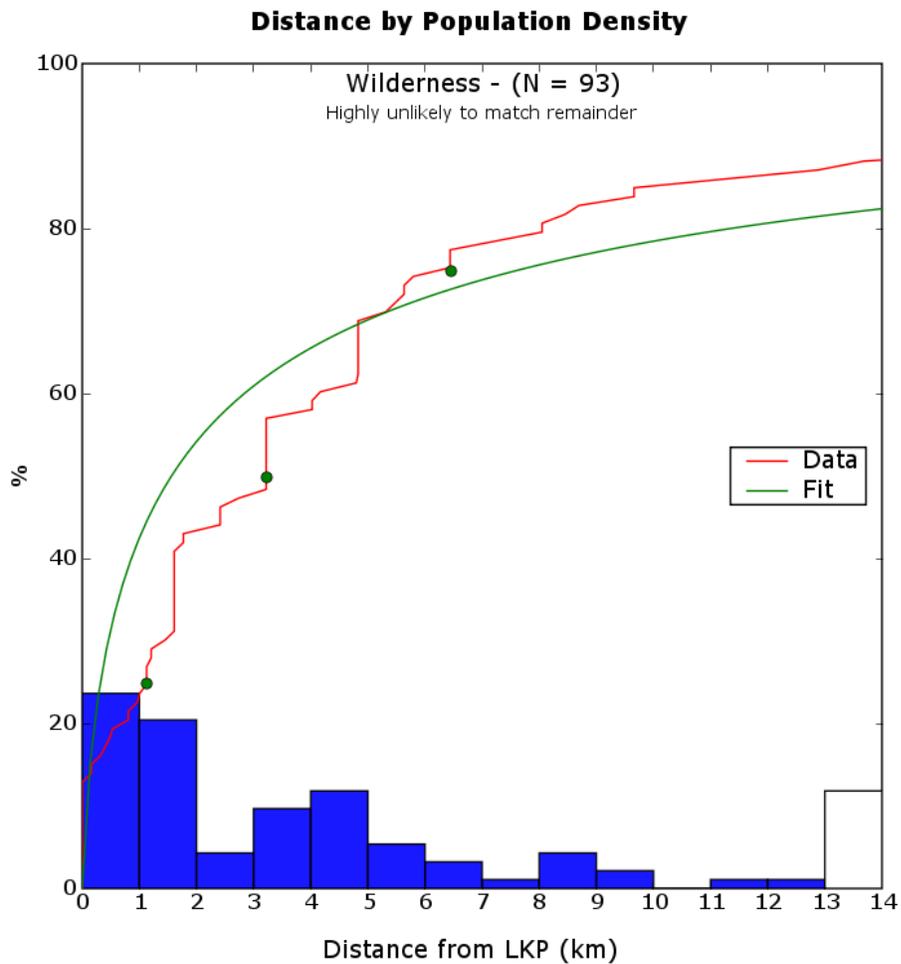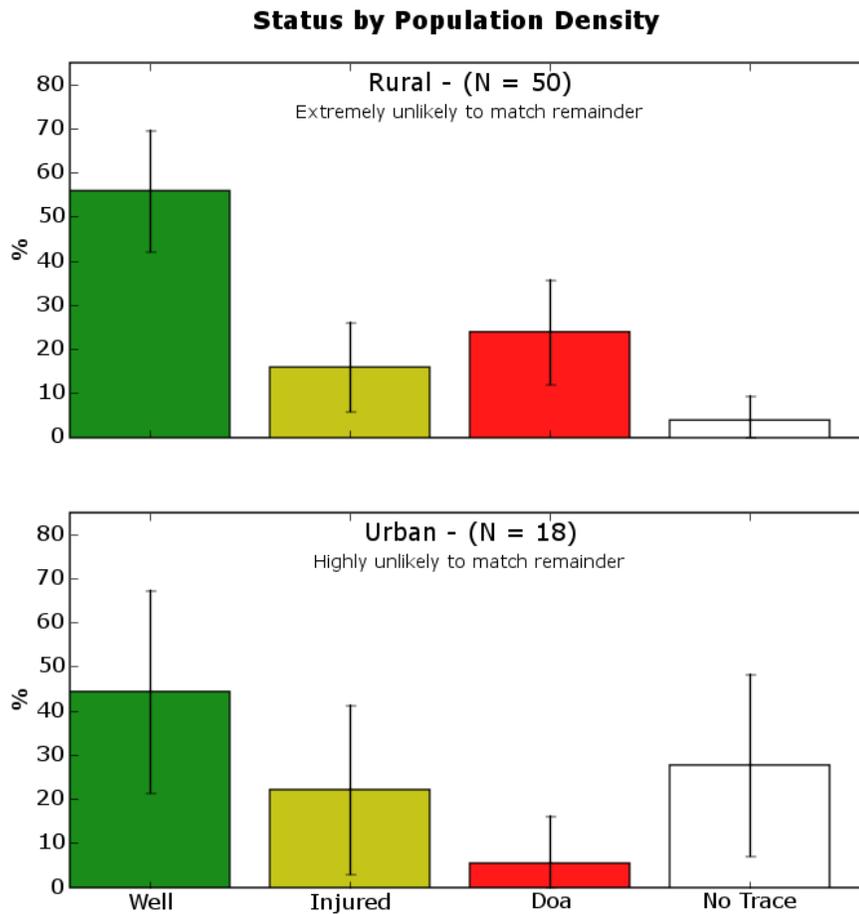Figure 18: Find Location by Population Density in MP-All *No categories were reliably different from the remainder.* See Section 3.1.

Figure 19: Elevation Change by Population Density in MP-All *No categories were reliably different from the remainder.* See Section 3.1.

3.4 TradCateg

	N	N_d	25%	50%	75%	95%
				Percentiles		
Aircraft - Glider	1	1	- -	- -	- -	- -
Atv	9	5	- -	- -	- -	- -
Autism	1	0	- -	- -	- -	- -
Base Jumper	1	0	- -	- -	- -	- -
Biker	1	0	- -	- -	- -	- -
Boater	15	10	- -	- -	- -	- -
Camper	9	4	- -	- -	- -	- -
Caver	1	0	- -	- -	- -	- -
Child	24	8	- -	- -	- -	- -
Climber	13	3	- -	- -	- -	- -
Dementia	46	21	0.5	0.8	1.6	2.4
Despondent	31	14	- -	- -	- -	- -
Elderly	12	4	- -	- -	- -	- -
Evidence	1	0	- -	- -	- -	- -
Fisherman	8	2	- -	- -	- -	- -
Hiker	64	30	1.1	2.8	5.2	19.6
Horse	6	3	- -	- -	- -	- -
Hunter	48	26	1.0	2.8	4.4	8.5
Mental Retardation	3	0	- -	- -	- -	- -
Motorcycle	7	5	- -	- -	- -	- -
Mountain Bike	7	3	- -	- -	- -	- -
Other	7	2	- -	- -	- -	- -
Picker	8	4	- -	- -	- -	- -
Picker - Mushroom	1	1	- -	- -	- -	- -
Runaway	4	1	- -	- -	- -	- -
Skier	6	4	- -	- -	- -	- -
Snowboarder	2	1	- -	- -	- -	- -
Snowmobile	25	14	- -	- -	- -	- -
Snowshoer	1	0	- -	- -	- -	- -
Swimmer	5	2	- -	- -	- -	- -
Vehicle	15	5	- -	- -	- -	- -
Water	7	4	- -	- -	- -	- -
Worker	4	3	- -	- -	- -	- -

Table 7: Distances (km) from LKP, by TradCateg 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
Aircraft - Glider	1	1	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Atv	9	9	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Autism	1	1	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Base Jumper	1	1	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Biker	1	1	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Boater	15	14	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Camper	9	9	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Caver	1	1	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Child	24	21	16 (76%)	4 (19%)	1 (4%)	0 (0%)
Climber	13	12	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Dementia	46	41	24 (58%)	10 (24%)	3 (7%)	4 (9%)
Despondent	31	28	11 (39%)	5 (17%)	5 (17%)	7 (25%)
Elderly	12	11	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Evidence	1	0	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Fisherman	8	8	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Hiker	64	61	38 (62%)	16 (26%)	4 (6%)	3 (4%)
Horse	6	6	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Hunter	48	44	35 (79%)	6 (13%)	2 (4%)	1 (2%)
Mental Retardation	3	3	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Motorcycle	7	6	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Mountain Bike	7	7	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Other	7	5	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Picker	8	8	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Picker - Mushroom	1	1	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Runaway	4	4	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Skier	6	6	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Snowboarder	2	2	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Snowmobile	25	25	18 (72%)	4 (16%)	3 (12%)	0 (0%)
Snowshoer	1	1	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Swimmer	5	5	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Vehicle	15	15	9 (60%)	3 (20%)	2 (13%)	1 (6%)
Water	7	7	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Worker	4	4	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)

Table 8: Status by TradCateg 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.)
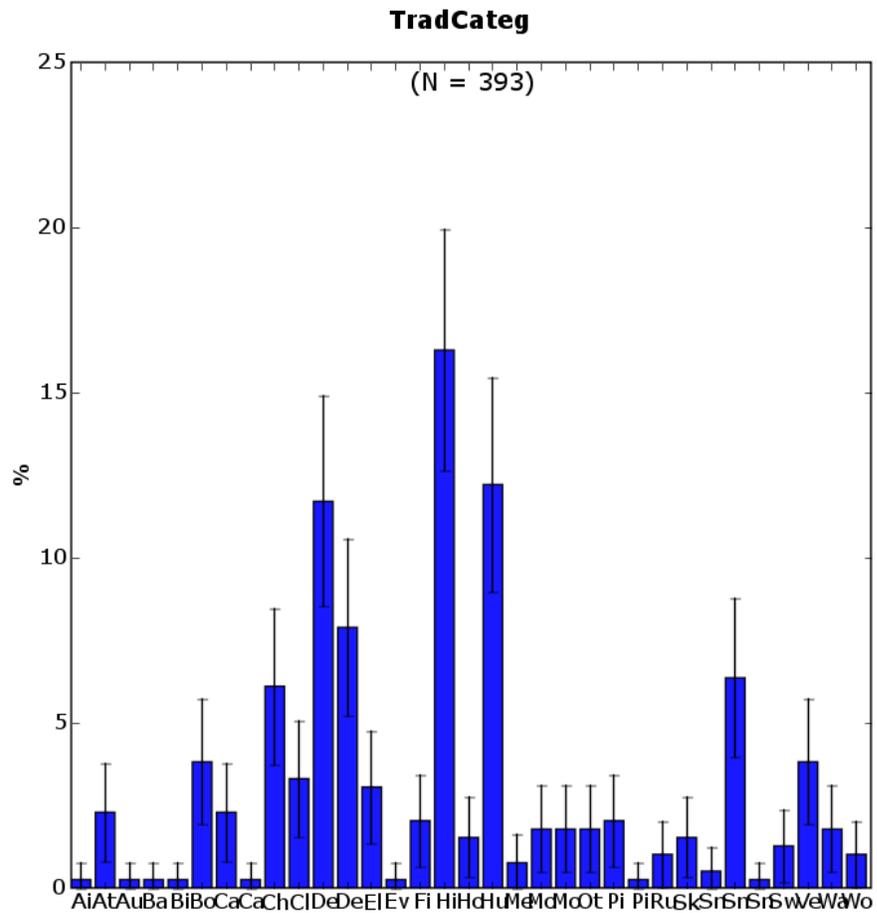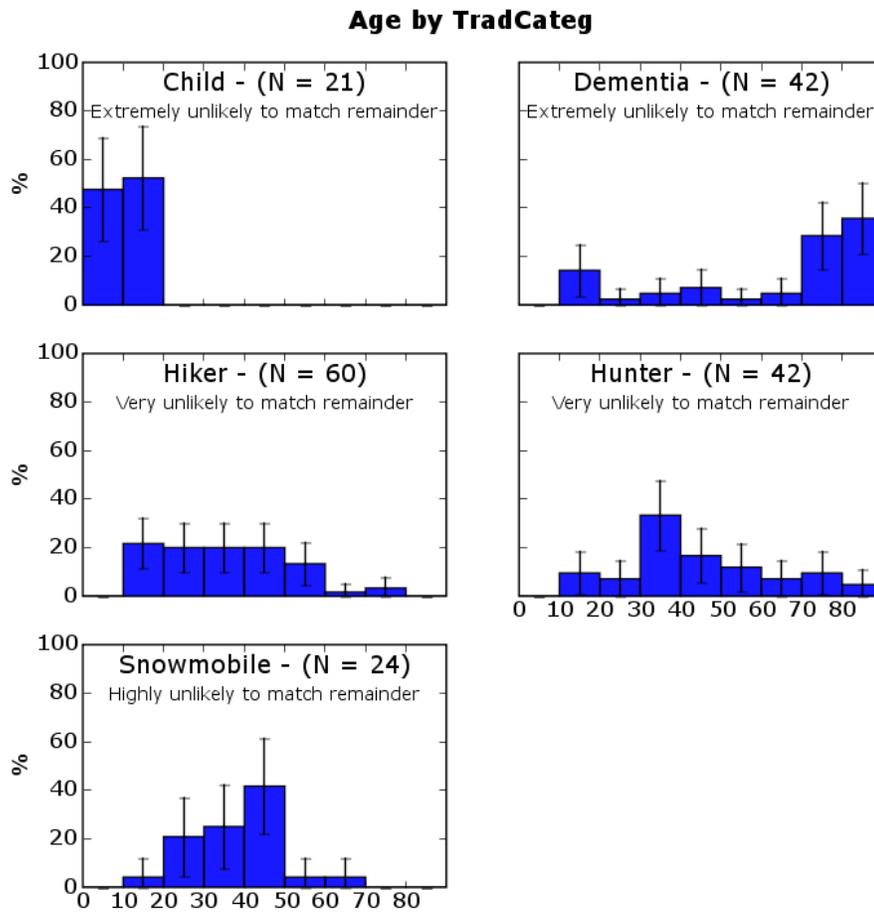
Figure 20: Distribution of TradCateg in MP-All.

Figure 21: Age (yrs) by TradCateg 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.
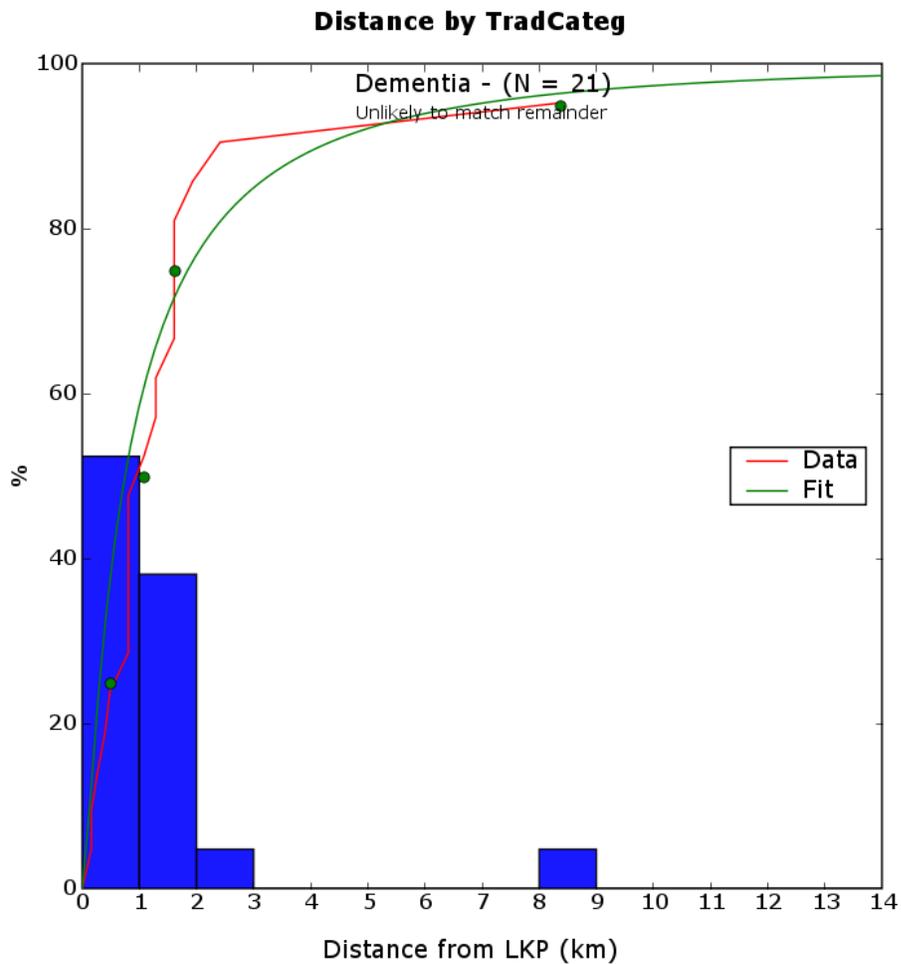
Figure 22: Distance From LKP (km) by TradCateg in MP-All. Lines show cumulative percent. Dots mark 25%, 50%, 75%, and 95% points (some of which may be off the graph). Only categories *differing* from the remaining data are shown. For others, see Section 3.1. Categories with fewer than 15 cases not shown.
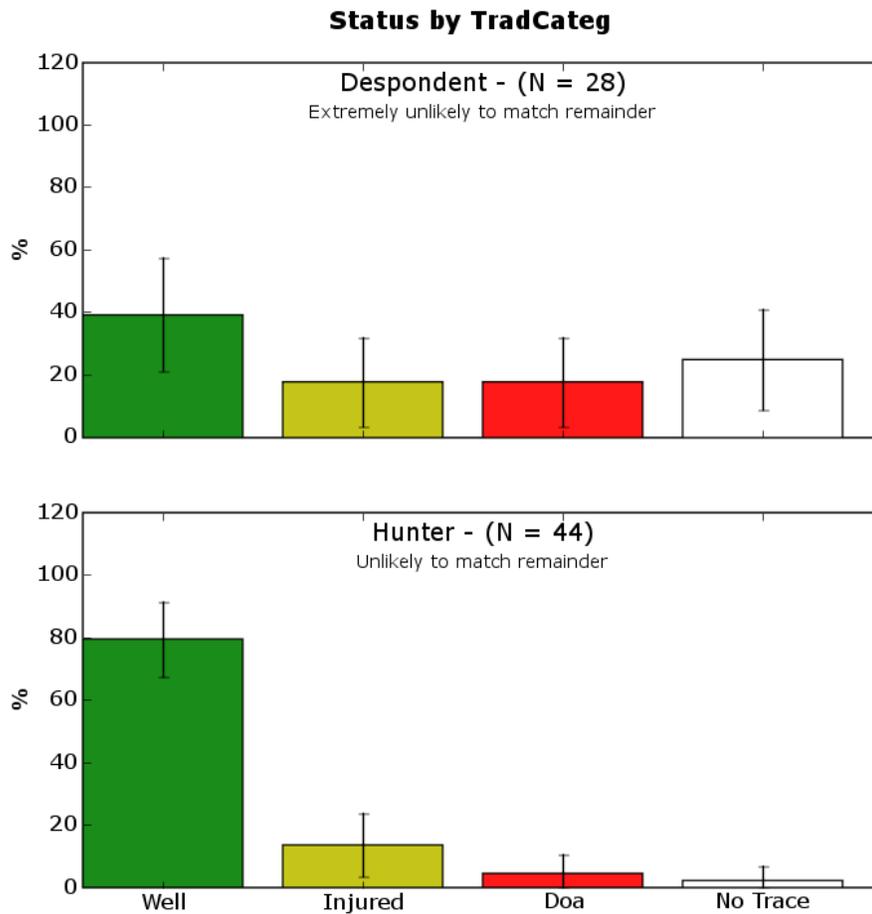
Figure 23: Status by TradCateg in MP-All. Bars show 95% confidence intervals. Only categories *differing* from the remaining data are shown. For others, see Section 3.1. Categories with fewer than 15 cases not shown.

Figure 24: Find Location by TradCateg in MP-All *No categories were reliably different from the remainder.* See Section 3.1.

Figure 25: Elevation Change by TradCateg in MP-All *No categories were reliably different from the remainder.* See Section 3.1.

3.5 Activity

	N	N_d	Percentiles			
			25%	50%	75%	95%
Atv	9	5	- -	- -	- -	- -
Autism	1	0	- -	- -	- -	- -
Base Jumper	1	0	- -	- -	- -	- -
Biking	1	0	- -	- -	- -	- -
Boating	15	10	- -	- -	- -	- -
Camping	9	4	- -	- -	- -	- -
Child	22	7	- -	- -	- -	- -
Climbing	13	3	- -	- -	- -	- -
Concert Attendee	1	0	- -	- -	- -	- -
Despondent	24	9	- -	- -	- -	- -
Driving	14	5	- -	- -	- -	- -
Fishing	8	2	- -	- -	- -	- -
Hiking	64	31	1.1	2.4	5.2	18.5
Horseback	6	3	- -	- -	- -	- -
Hunting	49	26	1.0	2.8	4.4	8.5
Motorcycle	7	5	- -	- -	- -	- -
Mountain Bike	7	3	- -	- -	- -	- -
Mushroom Hunting	1	1	- -	- -	- -	- -
Other	3	2	- -	- -	- -	- -
Paraglider	1	1	- -	- -	- -	- -
Picker	8	4	- -	- -	- -	- -
Rafting	6	4	- -	- -	- -	- -
Runaway	11	6	- -	- -	- -	- -
Skiing	7	4	- -	- -	- -	- -
Snowboarder	2	1	- -	- -	- -	- -
Snowmobiling	25	14	- -	- -	- -	- -
Snowshoer	1	0	- -	- -	- -	- -
Spelunker	1	0	- -	- -	- -	- -
Surfing	1	0	- -	- -	- -	- -
Swimming	5	2	- -	- -	- -	- -
Walkaway	52	23	0.4	0.8	1.6	2.7
Worker	4	3	- -	- -	- -	- -

Table 9: Distances (km) from LKP, by 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
Atv	9	9	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Autism	1	1	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Base Jumper	1	1	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Biking	1	1	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Boating	15	14	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Camping	9	9	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Child	22	19	15 (78%)	3 (15%)	1 (5%)	0 (0%)
Climbing	13	12	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Concert Attendee	1	1	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Despondent	24	21	7 (33%)	5 (23%)	4 (19%)	5 (23%)
Driving	14	14	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Fishing	8	8	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Hiking	64	61	38 (62%)	16 (26%)	4 (6%)	3 (4%)
Horseback	6	6	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Hunting	49	45	36 (80%)	6 (13%)	2 (4%)	1 (2%)
Motorcycle	7	6	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Mountain Bike	7	7	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Mushroom Hunting	1	1	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Other	3	2	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Paraglider	1	1	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Picker	8	8	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Rafting	6	6	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Runaway	11	11	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Skiing	7	7	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Snowboarder	2	2	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Snowmobiling	25	25	18 (72%)	4 (16%)	3 (12%)	0 (0%)
Snowshoer	1	1	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Spelunker	1	1	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Surfing	1	1	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Swimming	5	5	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
Walkaway	52	47	27 (57%)	12 (25%)	3 (6%)	5 (10%)
Worker	4	4	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)

Table 10: Status by 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.)
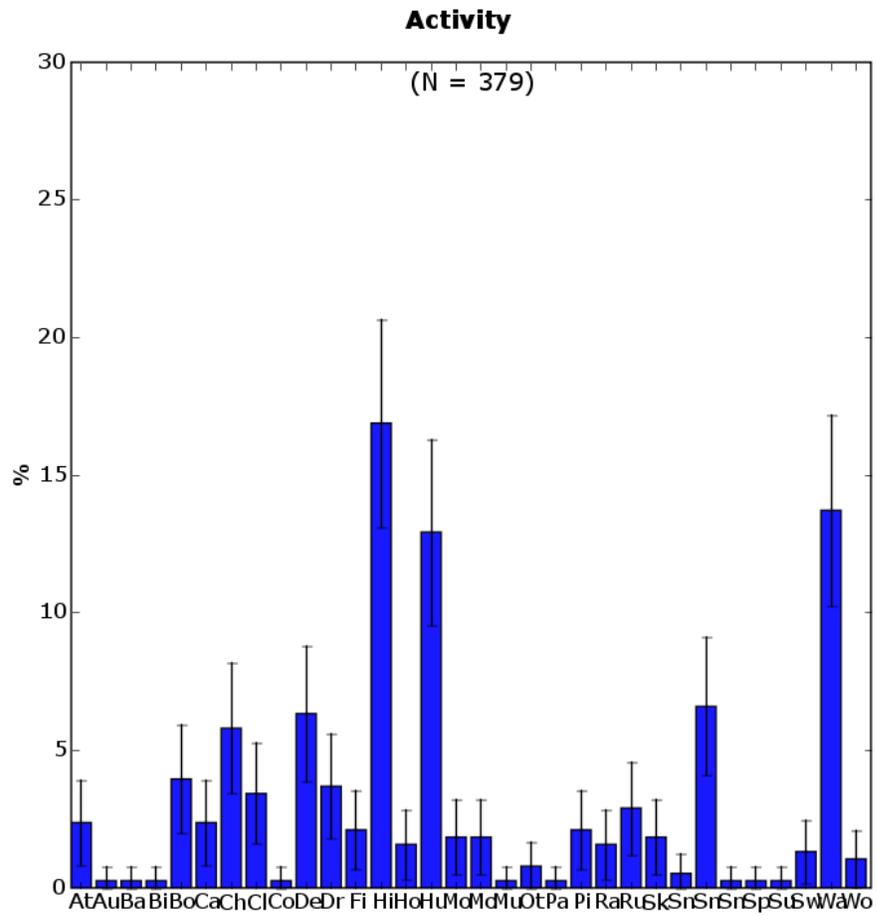
Figure 26: Distribution of Activity in MP-All.
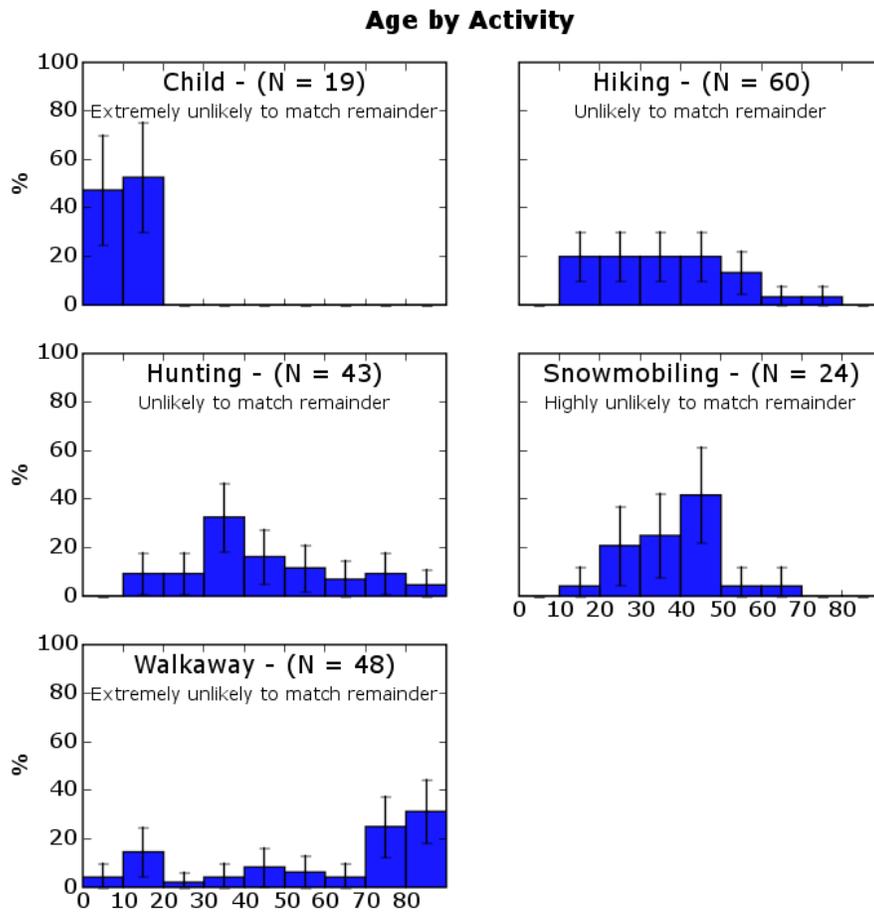
Age by Activity

Figure 27: Age (yrs) by 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.
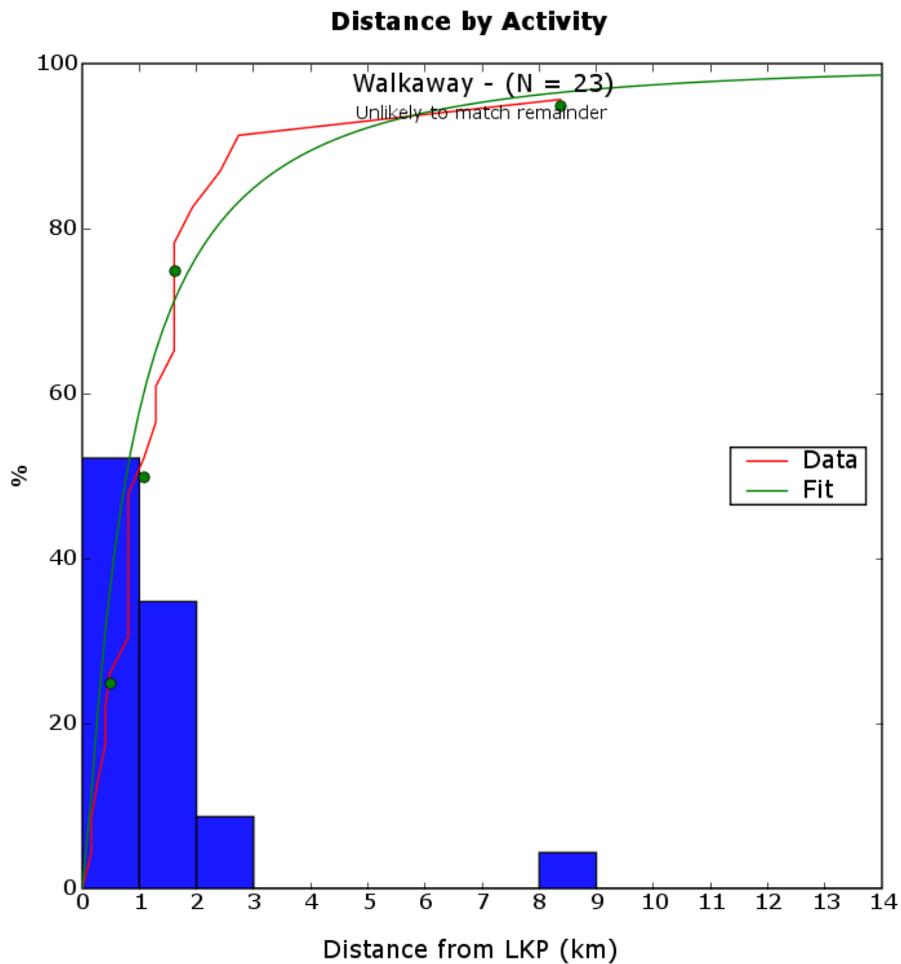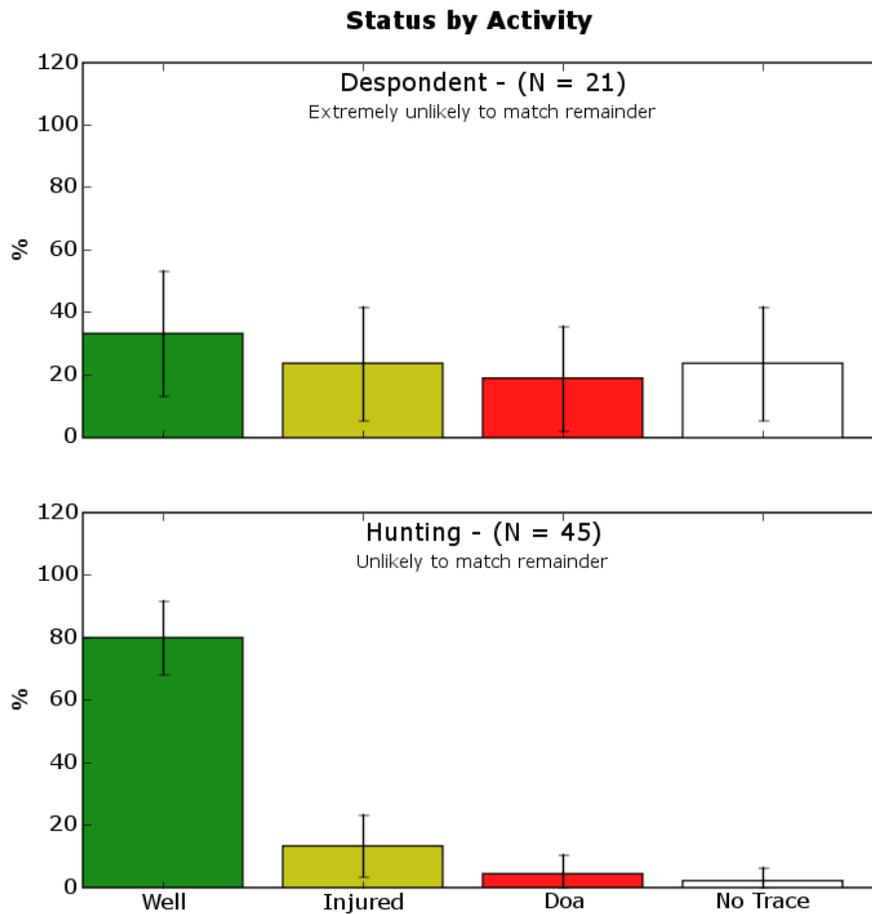
Figure 28: Distance From LKP (km) by Activity in MP-All. Lines show cumulative percent. Dots mark 25%, 50%, 75%, and 95% points (some of which may be off the graph). Only categories *differing* from the remaining data are shown. For others, see Section 3.1. Categories with fewer than 15 cases not shown.

Figure 29: Status by 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 30: Find Location by Activity in MP-All *No categories were reliably different from the remainder.* See Section 3.1.

Figure 31: Elevation Change by 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	12	9	- -	- -	- -	- -
F	70	31	0.8	1.6	2.4	6.0
Ff	9	6	- -	- -	- -	- -
M	217	100	0.5	1.7	5.2	16.1
Mf	19	10	- -	- -	- -	- -
Mm	48	21	1.6	3.2	5.3	25.8

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	12	12	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
F	70	62	37 (59%)	17 (27%)	3 (4%)	5 (8%)
Ff	9	9	- - (- -%)	- - (- -%)	- - (- -%)	- - (- -%)
M	217	206	122 (59%)	41 (19%)	28 (13%)	15 (7%)
Mf	19	18	14 (77%)	2 (11%)	2 (11%)	0 (0%)
Mm	48	47	38 (80%)	6 (12%)	3 (6%)	0 (0%)

Table 12: 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.)
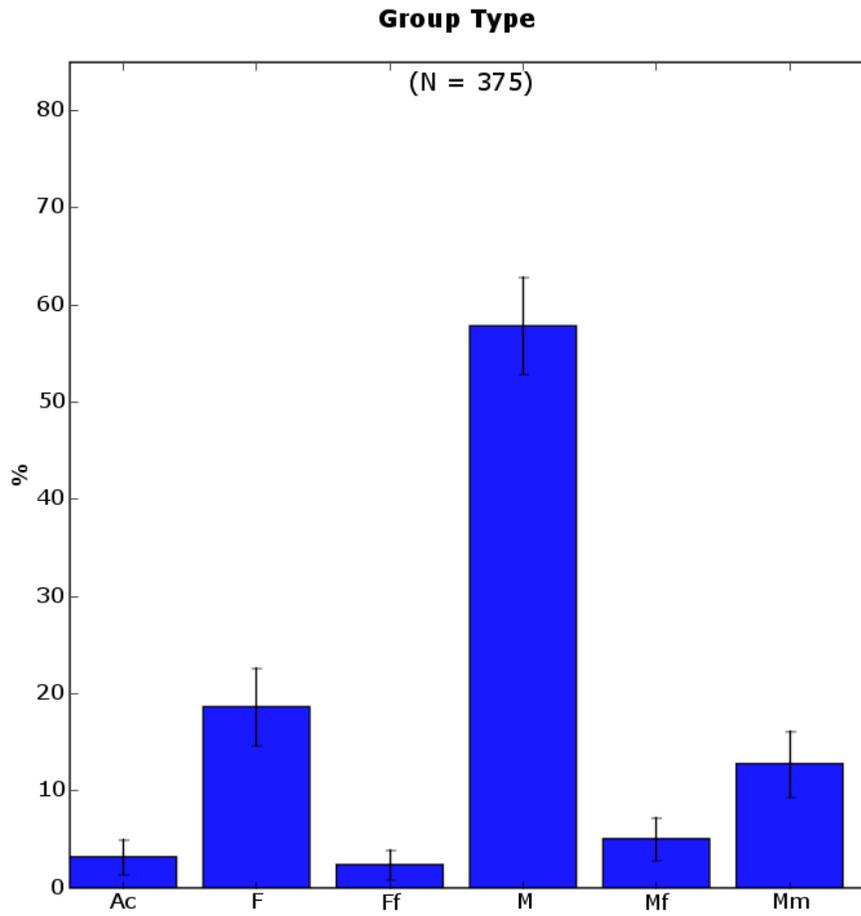
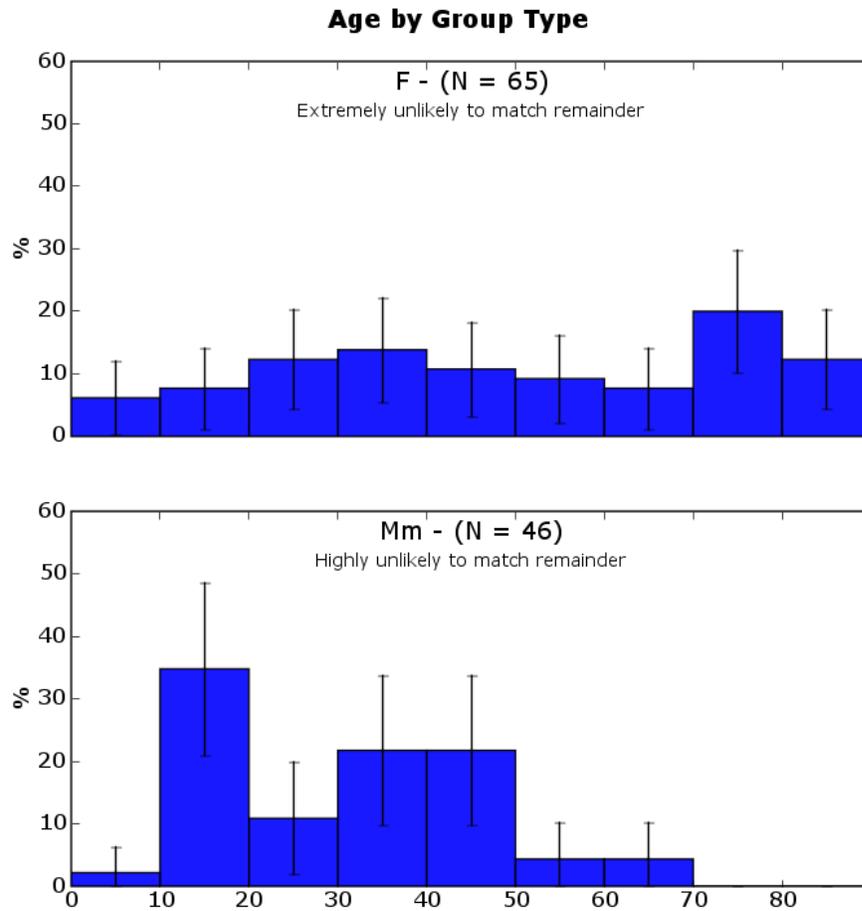Figure 32: Distribution of Group Type in MP-All.

Figure 33: 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 34: Distance From LKP (km) by Group Type in MP-All *No categories were reliably different from the remainder.* See Section 3.1.
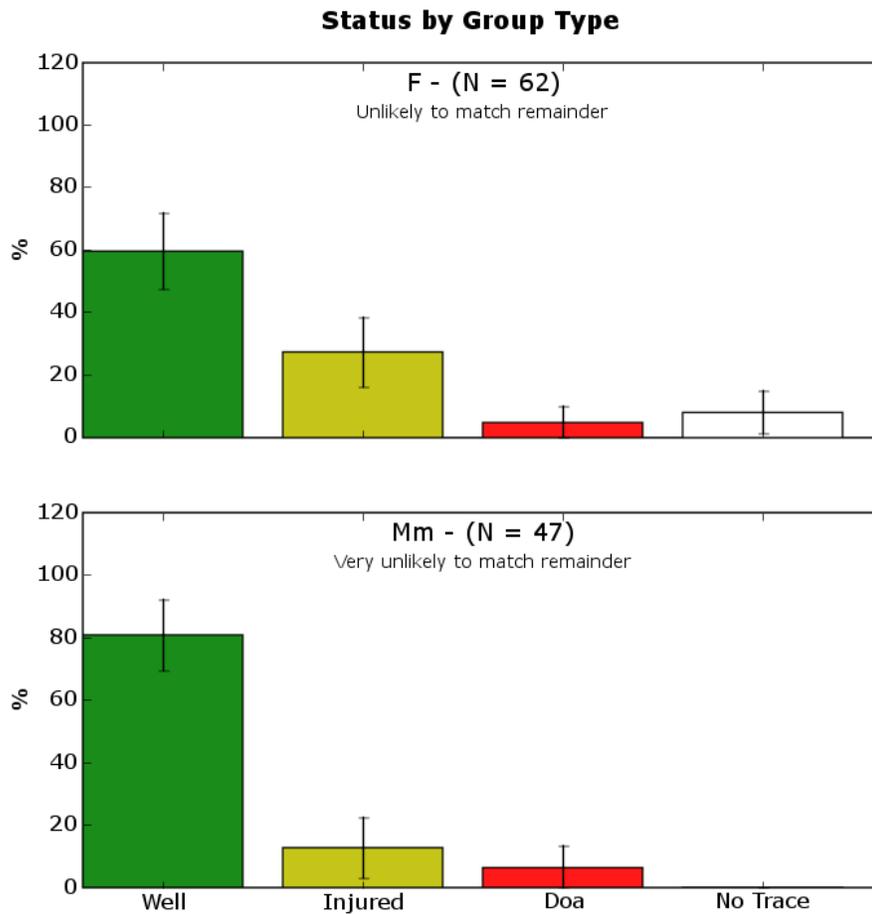
Figure 35: Status by Group Type in MP-All. Bars show 95% confidence intervals. Only categories *differing* from the remaining data are shown. For others, see Section 3.1. Categories with fewer than 15 cases not shown.

Figure 36: Find Location by Group Type in MP-All *No categories were reliably different from the remainder.* See Section 3.1.

Figure 37: Elevation Change 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 Washington State SAR conference. It has not been fully Quality-Checked. A final version will be made available on the SAR*Bayes* 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.