National Park Service
U.S. Department of the Interior

Natural Resource Stewardship and Science

Backcountry Visitor Experience Survey Report Briefs:

Bear Preparedness of Backcountry Visitors

Self-reported bear preparedness of backcountry visitors

In the backcountry visitor survey conducted in 2017-2018, visitors answered the question: "how prepared are you to encounter bears during your backcountry trip?[1]" Nearly equal amounts of visitors answered "somewhat" and "very" prepared (44%), (Figure 1). In Kantishna and Ruth/Backside Lake sampled units, the majority of visitors said they were "somewhat" prepared (50% and 47% respectively). The significant difference in bear preparedness was between day hikers and backpackers (Day hiker M = 1.1; Backpacker M = 1.7; $t = 4.73$, $p<0.05$). Age was correlated with preparedness for bear encounters, but not significantly. Older backpackers were slightly more prepared for bear encounters than younger (Figure 2). The opposite was true for day hikers: younger day hikers said they were more prepared than older day hikers.

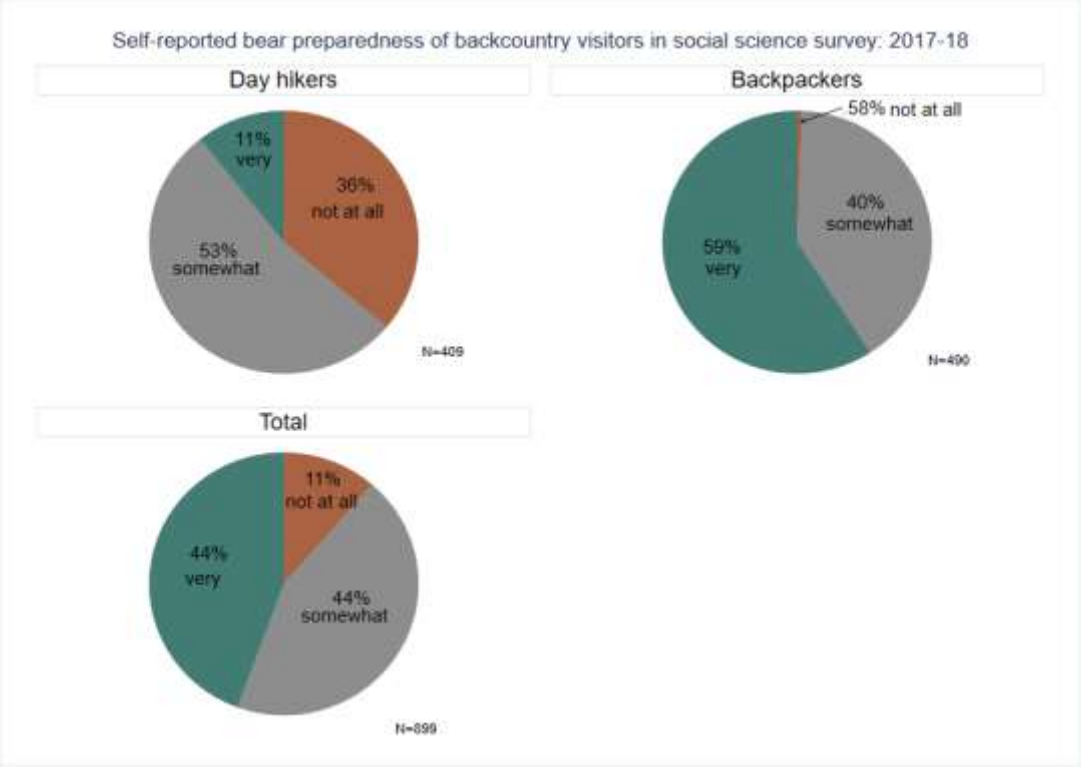


Figure 1. Visitors' self-reported level of preparedness for a bear encounter during their backcountry trip. Responses from the Denali Backcountry Visitor Experience Survey 2017-2018.

[1] responses were given on a 3-point scale: not at all prepared (1) to very prepared (3).

Bear safety measures employed by backcountry visitors

In order to better understand the actual preparation of visitors to the backcountry for a bear encounter, a measure of visitor's knowledge of bear safety strategies was developed with input from park staff. Bear encounter readiness was construed as a participant's own perception of what "bear safety tools" they brought with them and strategies they would employ while hiking. This item was constructed with both good and poor choices of tools and techniques (a test of knowledge), including: I carry bear spray, I am in a group, I talk loud/make noise, and I plan to hike only on trails[2]. Participants could select as many as applied (Table 1). This item was centered and collapsed using a Cox-transformation to include all "tools" selected by each participant (Figure 3).

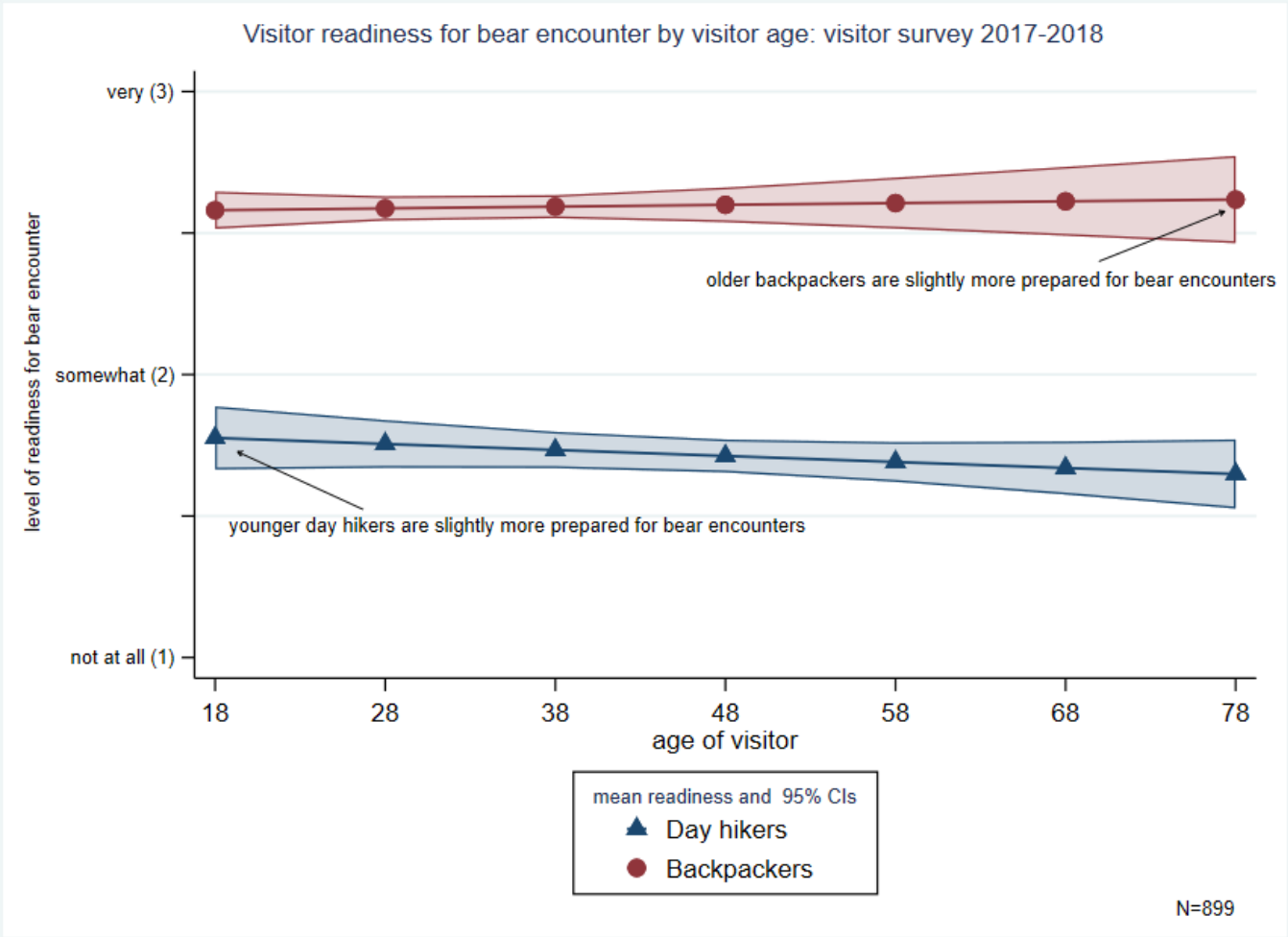


Figure 2. Level of visitor preparedness (readiness) for bear encounters during their backcountry trip by visitor age: day hikers vs. backpackers. Mean readiness level reported by visitors by age and user group with 95% confidence intervals (shaded)

[2] The full set of options were: bear spray, [had] bear safety education, bear bells, hike trails only, carry firearm, in group, talk loud/make noise, and other. Visitors selected an average of 3 tools/strategies; the number of selections totaled 2,958.

Table 1. Self-reported bear safety tools and strategies visitors used during their trip in the backcountry. Responses from the Denali Backcountry Visitor Experience Survey 2017-18.

Bear safety tools	**Total visitors reported to use**
Bear spray	84%
[Had] bear safety education	64%
Bear bells	27%
Hike trails only	15%
In group	25%
Talk loud/make noise	91%
Carry firearm	3%
Other[3]	5%
None	3%

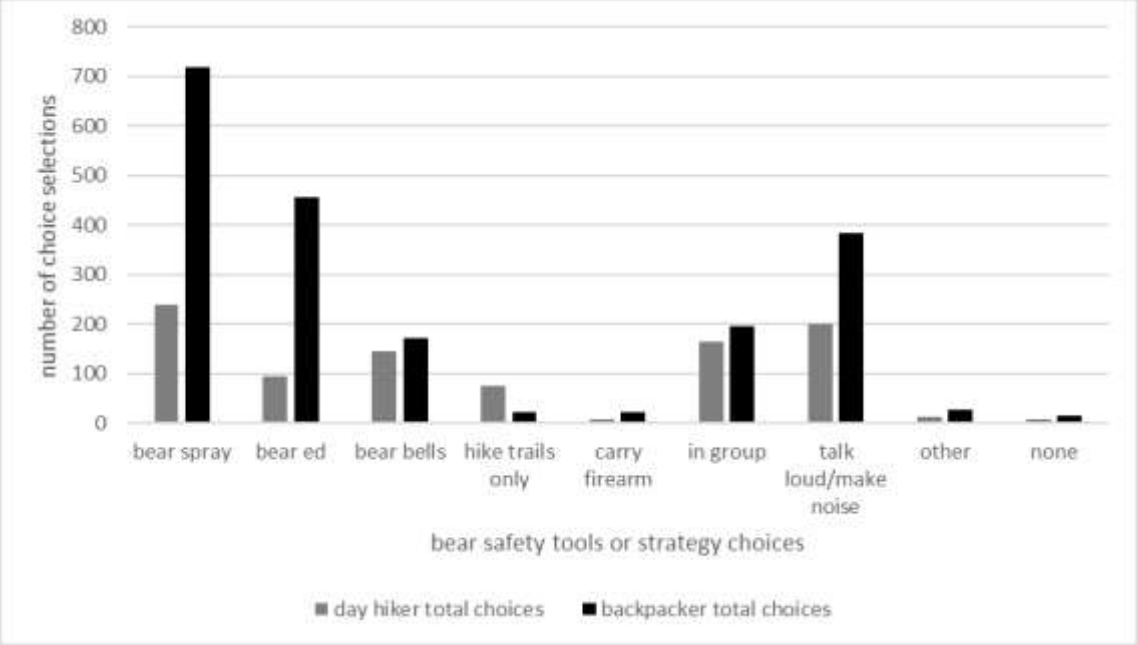


Figure 3. Total visitor selections of bear tools and strategies used to prepare for bear encounter. Responses from Denali Backcountry Visitor Experience survey 2017-2018. The strategy "in group" does not reflect the true distribution of groups in the sample. Visitors selected an average of 3 tools/strategies, all were compiled.

[3] Of which: bear bangers(1%), singing(10%), bear fence(1%), bear kegs(1%), red signal flare(1%), watched video (10%), observant(20%), foghorn(30%), clean camp(5%) squeaky shoes (1%), and in a guided tour group(20%)

Effect of visitors' perception of readiness for bear encounter on tool and strategy selection

Two bear safety strategies were included in models to test whether self-reported readiness had any effect on the likelihood of carrying bear spray (model 1) or employing the 'strategy' to only hike on trails (model 2). Visitors who reported they were "very prepared" for a bear encounter were more likely to report they carry bear spray then visitors who reported they were "not at all" prepared for a bear encounter (Figure 4). The opposite was true for planning to hike trails only. However, even visitors reporting they were "very prepared" still were 5% (backpackers) to 16% (day hikers) likely to report they planned to hike trails only as a bear safety strategy.

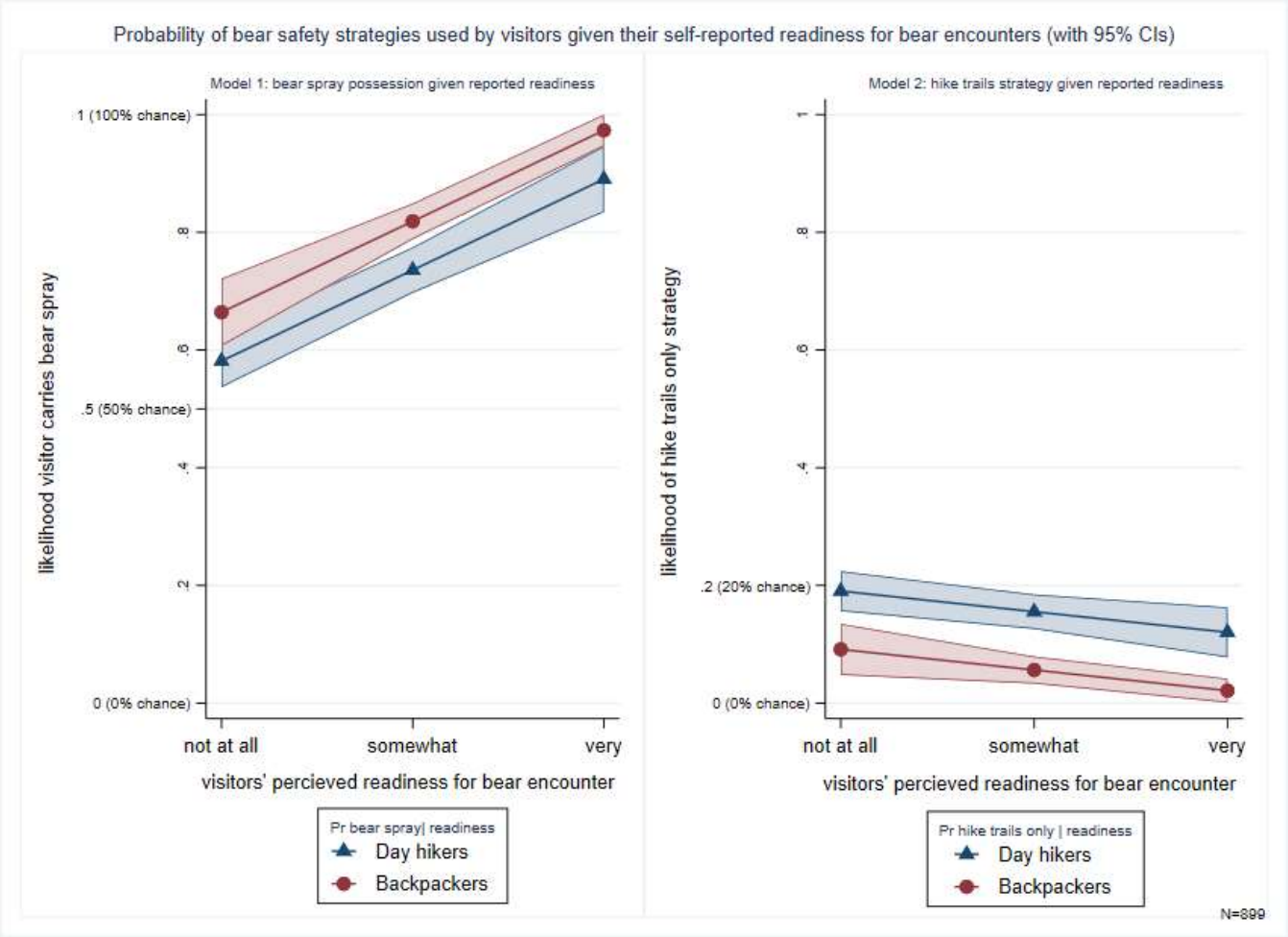


Figure 4. Visitor reported bear safety strategies they used during their backcountry trip by their self-reported level of readiness for bear encounters (not at all prepared, somewhat prepared, very prepared).