

*An Investigation of Southeastern Boulderers Environmental and Social
Practices*



prepared for

The Access Fund

Carolina Climbers Coalition

Southeastern Climbers Coalition

by

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Background and Purpose

The Access Fund, a national climbing advocacy group, recently published a “white paper” describing their concerns about the growing activity of bouldering (Access Fund, 2006). Bouldering, a unique form of rock climbing, causes impacts to natural resources and can socially impact user experiences too. One classic example of impact being detrimental to a bouldering site can be found with the recent closure of the iconic “Mushroom Boulder” at Hueco Tanks, Texas, US, due to extensive soil erosion from foot traffic and the possible threat to buried Native American artifacts from crash pad placement (Access Fund, 2008). The recent increase in bouldering’s popularity only contributes to its potential for the establishment of new sites and the rise in user numbers exponentially increases impacts on the natural and social environment (Access Fund, 2006).

Some reasons for bouldering’s growth include the limited amount of equipment required, media exposure in climbing publications, the availability of information through the Internet via organized climbing groups, relatively easy access to climbing sites, and the larger number of people bouldering areas can accommodate (Access Fund, 2008). Bouldering is also a cheaper, more convenient form of rock climbing, which makes it very appealing to those who have less disposable income for climbing gear and those who may not have the time to “rope up.” While the popularity of bouldering is good for the climbing industry, public lands nationwide are beginning to document impacts to the natural and cultural environments from this activity (Access Fund, 2008). Examples of these impacts include soil erosion and compaction, damage to vegetation, and social environment disturbances (e.g., user group conflicts) (Ewert, Attarian, Hollenhorst, Russell, & Voight, 2006).

While bouldering sites may not receive as much attention from organized climbing groups (e.g., commercial guides, summer camps, college and university programs, church and scout groups) as do traditional rock climbing sites, the burgeoning growth of bouldering poses an additional task for an already “stretched thin” public land management force to accommodate its growth and an increasing number of other relatively new outdoor recreation activities (e.g., geocaching, zorbing). Much as with any outdoor recreation activity taking place on public lands open communication between managers and recreation users is a key ingredient to finding a balance between the natural, social, and managerial conditions that exist at a site. The Access Fund states that “[management] planning for areas with bouldering opportunities should include consideration of the views and priorities of climbers. When climbers feel that they have been included in the decision-making process they are more likely to comply with restrictions and to help enforce those restrictions among their peers” (Access Fund, 2006, p. 11).

On the other hand, poor communication can have potentially detrimental results. Frauman, Collette, and Weller (2007) found that over half of the boulderers who felt they had no voice in the planned closure of a popular site were not likely to comply with the closure once the site was officially closed. Though Frauman et al. also found that almost three-quarters of the boulderers in their study were aware of sensitive plants and animals at the site and most felt that the area could benefit from more trail management. This is but one example of how much successful management of bouldering areas relies on communication between service providers, resource managers, and climbers, and that proactive management responses rely primarily on education and outreach to achieve objectives (Access Fund, 2006). As such, determining what “measures can accomplish management goals without needlessly reducing,

or affecting the quality of, recreational opportunities requires a solid knowledge of the way bouldering is practiced in a specific management area” (Access Fund, 2006, p. 11).

While much research has documented the impacts of rock climbing with industry and governmental agency management plans produced and published to encourage responsible practices (see Access Fund, 2008 for an extensive list), there has been little if any empirical research examining the environmental and social practices of boulderers. Though the Access Fund’s (2006) recently published bouldering white paper speaks to various practices (e.g., use of chalk, crash pad placement, littering, dealing with dogs) to consider at bouldering sites, the author of this paper had difficulty in finding studies that had documented bouldering practices. As such, to get a better glimpse of the bouldering phenomena, the purpose of this research was to discover what environmental and social practices are being utilized by “boulderers” to provide some insight for service providers (e.g., climbing groups/coalitions, government/school/college outdoor programs) and public land managers generally charged with maintaining and managing bouldering sites.

Methods

A survey was created using an electronic survey development and database management software in February, 2008. The survey consisted of questions addressing environmental (e.g., use of chalk, vegetation, staging areas) and social practices (e.g., pets, alcohol) as well as questions linked to years bouldering, age, gender and membership in climbing organizations. Distribution of the survey in March and April was conducted in a couple different manners. The survey was posted on www.carolinaclimbers.org and www.seclimbers.org. These sites are climbing coalition websites for the southeastern United States and North Carolina specifically. A number of surveys were also printed and distributed at bouldering sites around Boone, North

Carolina. These areas were used because the areas around Boone contain many fragile ecosystems and are considered some of the top sites in the southeast US.

Results

The following results are based on 153 respondents. Nearly nine of ten respondents were male (87.6%). The average age was 28.0 with a median of 26, with 34.4% under the age of 24. The average number of year's bouldering was 7.1 with a median of 5 and the most common response was 2 years. Of the respondents who have dogs (n=76), 43.4% let their dog off-leash while bouldering, with 30.7% "sometimes" doing so. One third (31.4%) of the sample break off rock if they believe it poses a dangerous situation to others, while 16.3% break off rock to reveal new holds. Regarding crowds, 87.6% of the respondents leave a site/problem when it is perceived as too crowded, while 66.0% participate in site maintenance events and 62.7% donate money to preserve the sites they climb at. Concerning site closures, 75.8% stay up to date on closures imposed by land managers. Although 28.8% (n=44) enter sites that are closed, 70.4% of them stay up to date on closures. Additionally, 80.0% are aware of Leave No Trace principles but less than one in ten could identify more than two of the seven principles. Four of ten respondents (44.4%) were members of a climbing coalition group with 31.4% members of the Access Fund.

The remaining questions posed to participants were measured using a 5-point Likert scale (1="never", 2="rarely", 3="sometimes", 4="often", and 5="always"). Each of the items was thought to address an environmental or social practice common in bouldering some of which were considered more positive than others. Concerning the use of chalk, 71.2% of the sample "always" uses chalk while 22.9% "often" use chalk (Table 1). Note: The determination of

whether a practice was considered positive or negative (or potentially detrimental) was based on the literature (see Access Fund, 2006; Access Fund, 2008) and the perception of a panel of boulderers who assisted with item development.

Table 1

Descriptive Results of Environmental and Social Practices

Statement	Percentage	Mean*
How often do you pack out your own trash?	99.3% ₂	4.97
How often do you use chalk?	94.1% ₁	4.61
How often do you scrub chalk off of climbing holds?	47.7% ₂	3.24
How often do you spot a friend when he/she is climbing?	92.8% ₂	4.42
How often do you share your crash pad with strangers?	78.4% ₂	4.03
How often do you pack out other people's trash?	75.1% ₂	4.03
How often do you make "tick marks?" (n=145)	70.6% ₁	3.85
How often do you remove your own "tick marks?"	50.4% ₂	3.21
How often do you brush away other people's "tick marks?"	40.0% ₂	3.13
How often do you spot a stranger?	64.7% ₂	3.76
How often do you bring a dog? (n=76)**	14.5% ₁	2.47

How often do you pick up waste from your dog?	31.5% ₂	3.00
How often do you use tobacco products while at a climbing area?	11.7% ₁	1.61
How often do you brush vegetation (Lichen, Moss, etc...) off a rock?	5.9% ₁	1.84
How often do you place your crash pad on an area with dense vegetation?	6.6% ₁	1.49
How often do you consume alcohol while at a climbing area?	3.3% ₁	1.46
How often do you bring a stereo to a climbing a site?	2.0% ₁	1.16

* Means (average response) are based on a 5-point Likert scale where 1="never" to 5="always."

** n=76 reflects the number of respondents who own dogs.

₁Represents the percent who "often" (equaled 4 on the 5-point Likert scale) or "always" (equaled 5) engaged in this type of negative or potentially detrimental environmental/social practice.

₂Represents the percent who "often" (equaled 4 on the 5-point Likert scale) or "always" (equaled 5) engaged in this type of positive environmental/social practice.

A series of independent sample t-tests were performed examining whether respondents differed in their environmental and social practices given eight dichotomous (yes/no) questions (e.g., "Do you stay up to date on area closures?"). Twelve of the practices, seven environmental and five social, revealed statistically significant differences ($p < .05$). In other words, the group of respondents who answered "yes" to a question differed statistically speaking from the group that

answered “no.” Regarding whether boulderers stay up to date on area closures, six statistically significant differences ($p < .05$) were found across the 12 practices with the most pronounced difference concerning whether one brushes away other people’s tick marks. Those that stay up to date on closures ($n=116$) were more likely to brush away other people’s tick marks (mean=3.39) than those that did not (mean=2.32) (Table 2). Respondents who are aware of Leave No Trace (LNT) principles ($n=122$) are also more likely to scrub chalk off than those who are not aware of LNT. Three statistically significant differences were found concerning membership in a climbing coalition/group (“yes”, $n=68$) or not linked to brushing away tick marks and tobacco use (Table 2). Three statistically significant differences were also found concerning membership in the Access Fund (“yes”, $n=48$) or not linked to brushing away tick marks and picking up other people’s trash. Five statistically significant differences were found concerning breaking off dangerous rock (“yes”, $n=50$), while four were found concerning breaking off rock to reveal new holds (“yes”, $n=25$). Five differences were also found regarding whether respondents donate money to preserve climbing sites (“yes”, $n=96$), with seven differences found based on whether they had ever participated (“yes”, $n=101$) in cleanup maintenance events (Table 2).

Table 2

Independent Sample T-test Findings Concerning Environmental and Social Practices

Practice	Item															
	Stay up to date on closures?		Aware of LNT principles?		Member of a climbing group?		Member of the Access Fund?		Break off rock that is dangerous?		Break off rock to reveal new holds?		Donate money to sites?		Have in participated in cleanups?	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Brush away other people's tick marks?	3.39	2.32			3.49	2.85	3.60	2.91	3.46	2.97			3.46	2.58	3.45	2.52
Brush away own tick marks?	3.48	2.38			3.53	2.96	3.67	3.00					3.55	2.65	3.54	2.58
Pick up other people's trash?	4.11	3.76					4.31	3.89					4.15	3.82	4.14	3.81
Pack out own trash?															5.00	4.92
Share a crashpad?	4.14	3.70									3.64	4.11	4.17	3.81	4.15	3.81

Spot a friend?											4.16	4.47					
Spot a stranger?	3.85	3.45												3.88	3.56	3.86	3.56
Scrub chalk off?	3.36	2.86	3.40	2.63						3.62	3.01					3.45	2.85
Bring tobacco to sites?					1.23	1.90											
Brush off vegetation?										2.18	1.68	2.24	1.76				
Pad on dense vegetation?										1.80	1.34	2.00	1.39				
Bring alcohol to sites?										1.74	1.32						

Note: Only statistically significant differences ($p < .05$) between means (average responses) are represented in the Table (there were no statistically significant differences found concerning whether respondents climb in closed areas or not). Means (average responses) are based on a 5-point Likert scale where 1="never" and 5="always."

In an attempt to examine how years of experience differentiated boulderer's across environmental and social practices three categories of boulderer's were determined – 2 or less years of experience (28% of the sample), 3 to 5 years (28% of the sample), and more than 5 years (44% of the sample). ANOVA results revealed that boulderer's with more than 5 years of experience were statistically different ($p < .05$) for seven of the 17 practices as compared to the other boulder groups, particularly compared to boulderer's with two years or less experience (Table 3). Boulderer's with more than five years of experience were distinctly different from the other two groups concerning how often they brush away other people's tick marks.

Overall, and regardless of statistical significance, experience generally translated to more responsible environmental and social practices, with the exception of brushing vegetation off a rock and placing a crash pad on dense vegetation where respondents with more than 5 years experience were slightly more likely than the other groups to engage in this practice (Note: Not many boulderers in the study engaged in either one of these practices very often).

Table 3

ANOVA Findings Concerning Environmental and Social Practices and Years Bouldering

Item and Group Size	Means*
Do you scrub chalk off?	
2 years or less (n=42)	2.74 ₁
3-5 years (n=42)	3.31 ₂

More than 5 years (n=66)	3.56 ₂
How often do you pack out other's trash?	
2 years or less	3.76 ₁
3-5 years	3.93 _{1,2}
More than 5 years	4.27 ₂
How often do you brush away your own tick marks?	
2 years or less	2.48 ₁
3-5 years	3.17 _{1,2}
More than 5 years	3.74 ₂
How often do you brush away other people's tick marks?	
2 years or less	2.36 ₁
3-5 years	3.09 ₂
More than 5 years	3.67 ₃
How often do you spot a friend?	
2 years or less	4.26 ₁
3-5 years	4.59 ₂
More than 5 years	4.39 _{1,2}
How often do you consume alcohol while at a climbing site?	

2 years or less	1.48 _{1,2}
3-5 years	1.73 ₂
More than 5 years	1.27 ₁
How often do you use tobacco products while at a climbing area?	
2 years or less	1.44 ₁
3-5 years	2.02 ₂
More than 5 years	1.47 _{1,2}

*Different subscripts (e.g., ₁) represent statistically significant differences ($p < .05$) between groups. Means (average responses) are based on a 5-point Likert scale where 1="never" and 5="always."

Discussion

The purpose of this research was to discover what environmental and social practices are being utilized by "boulderers" to provide some insight for service providers and public land managers generally charged with maintaining and managing bouldering sites. For the most part, boulderers in this study are pretty responsible both environmentally and socially at climbing sites with the exception of dog owners letting their dogs off leash and not picking up after them, as well as the prevalent use of chalk and tick marks, although many boulderer's do remove their tick marks and scrub off chalk. As well, most boulderer's have heard of Leave No Trace principles and while the majority could not specifically identify actual principles, it seems they apply many of the principles at bouldering sites to reduce impacts. Additionally, while there is

not a great percent of respondents who claim membership in climbing organizations, such as The Access Fund, most respondents participate in site maintenance events and donate money to preserve the sites they climb at.

Overall, three-fourths of respondents stay up to date on closures imposed by land managers, yet there are some (28.8%) who enter sites that are closed. As Frauman, Collette, and Weller (2007) found boulderers who feel they have no voice in a closure may be less likely to comply with the closure. As such it seems imperative, much as the Access Fund has advocated (2006), that “when climbers feel that they have been included in the decision-making process they are more likely to comply with restrictions and to help enforce those restrictions among their peers” (p. 11).

In taking a closer look at how environmental practices might be influenced by other variables there was evidence that boulderer’s who stay up to date on closures are significantly more likely to brush away tick marks, whether their own or others, and pick up other’s trash, then boulderer’s who don’t stay up to date. This also held true if the respondent had participated in site maintenance events, donated money to preserve sites, or was a member of a climbing group (e.g., local, regional, or national advocacy - Access Fund). In addition, those respondents who were aware of LNT principles, stayed up to date on closures, or participated in maintenance events were also more likely to scrub chalk off rock surfaces than those who were not or did not. Lastly, boulderer’s who break off rock, whether to reveal new holds or remove potentially dangerous pieces, were also more likely to brush vegetation off rock surfaces and put pads on dense vegetation at staging areas than those who did not.

In terms of social practice differences, boulderer’s who stay up to date on closures, donate money to preserve sites, or have participated in maintenance events are statistically more

likely to share a crash pad or spot a stranger than those who do not. On the other hand, respondents who break off rock to reveal new holds are less likely to share a crash pad or spot a friend than someone who does not. Lastly, respondents who break off rock that is perceived as potentially dangerous are more likely to bring alcohol to a climb site.

In evaluating how bouldering experience differentiates across environmental and social practices, the findings reveal that respondent's with five years or greater experience are statistically more likely to brush away other climber's tick marks than those with less experience. Moreover, respondents with greater than five years of experience were more likely to scrub off chalk, pack out other's trash, and remove their own tick marks than those with two years or less experience. On the other hand, respondents with two years or less experience were similar to those with more than five years when it came to spotting a friend (Note: each group "often" to "always" engaged in this practice), and bringing alcohol and tobacco to climbing sites (Note: each group "never" to "rarely" engaged in this practice).

Putting it all together the findings suggest that there are certainly some practices and behavior that should be studied further. For instance, closer examination of the prevalence of dogs at climbing sites, whether on or off leash should be explored. How much of an impact do dogs have both on the natural environment (e.g., soil, vegetation, wildlife) and social experience of other boulderer's, some of whom may be uncomfortable around dogs? How about members of the general public who might also be using the same natural resource for other purposes? Do boulderers get displaced from favorite sites due to the actions or inactions of other boulderers? Does witnessing someone break off rock, place a crash pad on vegetation, or clean a rock surface of vegetation, influence the experience of other climbers in a negative way? Does this ultimately lead to public land management officials having to reevaluate the use of a bouldering site,

particularly those frequented by other recreation user groups, when a minority of climbers is detrimentally impacting the natural and social environments?

The findings from this study clearly point to the fact that the more engaged a boulderer is in the climbing community, be it locally or greater, the more likely they are to use responsible environmental and social practices. This holds true for some practices linked to years of bouldering experience too. Beyond a call for more research of this type, there particularly needs to be more research examining some of the linkages found in this study, with an additional attempt at studying the relationship between practice and impacts.

While this study did not examine the full spectrum of bouldering practices promulgated by organizations like the Access Fund and Bureau of Land Management, it did provide some insight into the bouldering experience of a group of southeastern US climbers. With the increasing popularity of bouldering and recognizing the relative newness of the activity among the sample studied (a third of sample was under the age of 24), continued efforts by advocacy groups such as the Access Fund and local climbing organizations, as well as service providers (e.g., camps, college and school groups, outfitters and guides, and retailers) should be made to help educate the new legion of boulderers competing for limited climbing resources. In partnership with public land management agencies, climbing organizations and service providers who have a vested interest in bouldering should continue to develop educational tools at outdoor climbing sites (e.g., kiosks, brochures, trail signs) and indoor sites to facilitate an understanding of responsible practices for current and future boulderers. This should in turn go a long way in ensuring the protection of the natural resources as well as help less engaged boulderers become advocates for the sites they value, be it through individual mentoring of other climbers or becoming more involved with an organized climbing group. In addition, having more

experienced boulderers who model responsible practices become on and off site mentors to new climbers should also prove beneficial to the natural resource and help public land managers make more informed decisions about bouldering site policy and administration.

Recent efforts have been undertaken to address practices at popular bouldering sites. In Bishop, California, US, the Bureau of Land Management (BLM) (2007) has and continues to work with boulderers to provide information related to access, camping, the use of trails, chalk, crashpads, and tick marks, as well as dealing with dogs, litter, noise, bodily waste, vegetation, and tampering with rock. This information has been posted both on the BLM's website as well as bouldering websites. While other efforts have been undertaken at popular bouldering sites around the country to limit impacts and encourage responsible behavior (see Access Fund, 2008), Steelhammer's (2000) examination of rock climbing in West Virginia's New River Gorge area revealed a variety of ideas that may also have merit at heavily used bouldering sites - deciding whether or not new parking areas and access points are needed, developing educational programs to benefit *all* visitors at or near climbing sites, the possibility of creating a climbing reservation system via e-mail or Web site postings, and the building of sign-in stations at trailheads for popular climbs.

Lastly, while it could be argued that chalk isn't detrimental to bouldering sites, the author believes that chalk is an addition to climbing that cannot be completely eliminated because of the obvious benefit it provides. On the other hand, some bouldering purists suggest chalk has no place in bouldering (see van Hilvoorde, 2007). It is difficult to say whether the use of chalk is irresponsible when safety comes into play. At a minimum, it seems chalk should be used minimally and brushed off when possible due to its visual impacts. Moreover, pressure from climbing advocacy groups should be put on major chalk producers to make an efficient colored

chalk, so that in combination with scrubbing chalk off holds, chalk blemishes will turn into a more natural color. It is recognized that it takes time and research to create such a product but, it could be worth the wait!

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