

2018

The Bolton Dome Fundraiser Film Thesis

fraser query
The University of Vermont

Follow this and additional works at: <https://scholarworks.uvm.edu/envstheses>

Recommended Citation

query, fraser, "The Bolton Dome Fundraiser Film Thesis" (2018). *Environmental Studies Electronic Thesis Collection*. 44.
<https://scholarworks.uvm.edu/envstheses/44>

This Undergraduate Thesis is brought to you for free and open access by the Undergraduate Theses at ScholarWorks @ UVM. It has been accepted for inclusion in Environmental Studies Electronic Thesis Collection by an authorized administrator of ScholarWorks @ UVM. For more information, please contact donna.omalley@uvm.edu.

The Bolton Dome

Fraser Query

A senior thesis
submitted in partial fulfillment of the
requirements for the degree of
Bachelor of Science

Environmental Program

University of Vermont

2018

Advisors:

Richard Paradis, UVM Natural Areas Center Director, ENVS Lecturer, Advisor
Brendan Fisher, UVM ENVS Associate Professor
Nilima Abrams, UVM CDAE Assistant Professor

Abstract

The sport of rock climbing has evolved drastically since its conception, nearly 150 years ago. Recently, climbing has experienced a surge in popularity and has begun to leave noticeable impacts on fragile cliffside ecosystems. These cliffside are not only home to rare nesting birds, but also support specialized biotas, like bryophytes, lichen and fragile trees that can grow to be 1,000 years old (Kelly & Larson 1997). Because of this, conflicts have surfaced between the objectives of conserving natural land and the acceptance of climbing in these areas. Though climbing has been proven to have many physical and mental health benefits (Luttenberger, 2015), some argue that the negative effects of climbing outweigh its benefits.

Through a short fundraiser film, I aim to resolve this debate by portraying the strengths of the Vermont climbing community and how the Local Climbing Organization (LCO), CRAG-VT, has been extremely successful at conserving cliffside ecosystems and providing access to cliffs through land acquisitions and land easements. The film explores the ways in which CRAG-VT works with national climbing organizations and collaborates with the community to open cliffs such as Bolton Dome with a strong focus on land conservation and protection against development. The films second aim is to help CRAG-VT raise \$65,000 to pay for the Bolton Dome property by sharing the fundraiser on a national level through popular media organizations. Finally, the film is meant to portray how important and welcoming the Vermont climbing community is to the growing outdoor recreational community in the greater Burlington area and to show the excitement of climbing outside.

Table of Contents

Introduction.....	3
Bolton Dome Overview.....	3
Literature Review.....	5
Climbing Overview.....	5
Physical.....	6
Mental.....	7
Cliffside Ecology.....	8
Geology and Geomorphology of Lone Rock Point.....	11
Objectives.....	13
Methods.....	14
Shots List.....	15
Discussion/Expected Outcomes.....	18
Project Summary.....	20
Link To Film.....	24
Bibliography.....	25
Attachments - Evaluators Agreement	26

Introduction

Rock climbing over the last twenty years has grown in popularity, with over 6 million Americans participating in 2009 (Green, 2016). Though climbing has become a major outdoor recreative sport, little research has been done to quantify the effects climbing has on the environment (Brambilla, 2005). Even less research has been done to quantify the impacts climbing has on the ecology of natural flora and fauna on cliffsides (Clark, 2015). From frequented approach trails, to the base of cliffs, climbing impacts the way vegetation grows on and around rock faces. Cliffside vegetation has been analyzed at numerous popular climbing destinations such as the New River Gorge, West Virginia (Clark, 2015), Southern Ontario, Canada (McMillan, 2002) and Joshua Tree, California (Camp, 1998), where over 2.3 million visitors recreate each year (U., 2016), but no documented research has been recorded in the well-established and regularly visited climbing areas in Northern Vermont. With over 600 established climbing routes north of Vermont's capital city, Montpelier, this highly trafficked area is a hotspot for outdoor climbing and is becoming more popular to recreationists locally and nationally (Climbing in Vermont, 2015). The new development at Bolton Dome is an exciting acquisition for the Vermont climbing community and acts as a perfect framework model for other LCO's and land managers around the country trying to conserve natural areas and provide access to climbers and recreationists alike.

Bolton Dome Overview

A Brief History of Bolton Dome

The Vice President of CRAG-VT, Seth Maciejowski, remarked, “The bottom line is the Bolton Dome project would never have been possible without the support from the Access Fund” (S. Maciejowski, personal communication, April 2018). The Access Fund is the largest climbing organization in the country, fighting to protect and conserve natural land that doubles as accessible climbing land throughout the United States. They annually provide grants and loans to LCO’s to help preserve public and private land. In 2016, they invested \$832,000 towards stewardship and conservation of land, \$378,000 on climbing policy and advocacy, \$94,000 on new land acquisitions and protection, and awarded \$52,000 in grants. Since then, the organization has grown, allowing them to award larger grants and loans, conserve bigger parcels of land and take on more serious projects like taking legal action against President Trump’s proclamation to significantly reduce the size of Bears Ears National Monument in Utah (Access Fund, 2017)—an action a president is not allowed to make, only the U.S. Government.

The Bolton Dome property includes a 40-acre plot of land, a small house and a brilliant cliff face with a surrounding boulder field. The house at the base of the cliff was purchased 40 years ago and was made into private land. This meant the previously climbed cliff was made off-limits to the public, and to dedicated climbers like Dr. Dick Katzman, who had spent years there developing climbing routes. Once the property went back up for sale in January, CRAG-VT applied for the comprehensive loan from the Access Fund for \$380,000 to purchase the land and the house. Their main goal is to preserve a piece of climbing history that has been closed off to climbers for nearly 40 years and to ensure no new buyers would develop this

natural area and close the cliff forever. Since it's new purchase, CRAG-VT has taken action to preserve the cliff and the surrounding woodlands around the property.

Access Fund's loan allowed CRAG-VT to make this dream a reality. For many years, these two climbing organizations have had a prosperous relationship consisting of many successful land acquisitions and easements, with a total of 7 cliffsides permanently conserved in Vermont over 15 years. CRAG-VT's mission is not only to conserve and protect climbing areas, but also to "serve climbers, landowners, land managers and the general public as an educational resource for responsible climbing, access status, historical information, species and habitat protection, and legal matters" (CRAG, 2016). They hold beginner climbing and safety courses year round and strive to make the climbing community as welcoming and accessible as possible.

Literature Review

Climbing Overview

There are many different styles of climbing, such as traditional, sport, top rope, and bouldering, each of which has a different effect on the rock and surrounding vegetation (Javier, 2016). Traditional climbing, although thought of as the most dangerous form of climbing, is also the most sustainable and least impactful because the climber often carries out all of the protective gear used to scale the rock (Achey, 2005). Other types of climbing, such as sport climbing, which uses mechanical tools to drill permanent metal bolts into the rock, leaves signs of use and could potentially harm the rock if drilled incorrectly. Top roping, is another style of climbing that usually involves access trails and bolted anchors at the tops of cliffs. In addition, strong trees at the tops of cliffs are often utilized as anchors, which can cause excessive wear on the bark and contribute to a larger environmental impact (Aleksey, 2014). Another impact climbing can have

on cliff ecosystems is from the white marks left behind from chalk that climbers often use to keep their hands dry and grippy (Revolv, 2017). Some national parks, such as Arches National Park in Utah, have banned the use of white chalk, because of the unnatural stains it leaves on the rock (Green, 2017). However, for certain types of rock, like sandstone, white chalk stands out strongly, and for this reason, colored chalk has been made to replicate the color of the natural walls, so that climbers can still use chalk, while having less of an impact on the aesthetic of the cliff (Arches, 2017). Additionally, conservation efforts around rock climbing areas in national parks and on private lands vary significantly. Some areas have banned climbing completely, while others encourage its growth and development (Schmidt, 2003).

There is a strong debate as to whether climbing is a nuisance and unsafe, or if it is a stress relieving activity that provides good exercise and gets people outside into nature. In Vermont, CRAG-VT aims to satisfy both parties by holding beginner climbing workshop classes that teach people how to climb safely, and also connect beginners with mentors so that new users learn from experienced climbers. CRAG-VT strongly encourages legal climbing by purchasing and acquiring land easements from property owners so that recreationists better follow the rules (CRAG, 2016).

Physical

Rock climbing provides a rigorous physical workout, whether practicing climbing skills in the gym or enjoying the beauty and variety of climbing outdoors (España-Romero, 2012). Regardless, rock climbing for an hour burns more calories than many other highly aerobic exercises like road cycling or trail running, and an hour of climbing can burn over 800 calories (Koch, 2017). Not only does climbing help tone various different muscle groups in the body

from all of the twisting, pulling and pushing motions used, but it also helps enhance mobility and raise functional fitness levels (Fetters, 2014). Professional climber Sasha DiGiulian says that “your core and your hips are essentially what drives your power and provides [you with] balance.” Digiulian goes on to say; “the physique you get from climbing is...well, it garners quite a few compliments” (Fetters, 2014).

Mental

It is clear that climbing has many positive physical effects, but there is also evidence to prove that climbing has mental health benefits as well. Studies have shown that indoor rock climbing has positive effects on measures of depression for adults, and has even been prescribed by doctors to treat varying levels of depression and anxiety (Luttenberger, 2015). Other research has shown that the prolonged rhythmic exercise that climbing offers, can have therapeutic effects that relieve stress and positively engage the brain (Thoren,1990). In addition to the exercise of climbing, the exposure to outdoor rock climbing proves to have even greater health benefits (Pearson, 2014). A side effect of spending long durations of time in urban environments, is cognitive fatigue, a harmful mental state induced by the constant stimulation of urban life. By spending extended time in a natural area, studies have shown that “exposure to natural environments can be associated with mental health benefits” and linked with lower levels of stress, anxiety, and depression (Pearson, 2014). Professional rock climber, Ethan Pringle, who has suffered from depression and anxiety disorders recalls that some of his most clear-headed and peaceful moments were during “periods of time where I was on a road trip, outside climbing every day” (Chrobak, 2017). Fortunately, a majority of climbing crags (short for ‘climbing areas’) require at least a 10 to 15-minute walk, just to reach the climbs. This offers climbers

additional cardio exercise as well as the positive effects of spending time in nature. Other studies have shown that climbing and exercising in natural landscape settings can decrease symptoms of attention-deficit/hyperactivity disorder (ADHD) (Kuo, 2004).

One form of climbing, called bouldering, that only uses pads on the ground for protection, and that is performed at much lower heights than rope climbing, is utilized to practice harder level climbing moves and advanced techniques (Lisa, 2008). Consequently, a bouldering climb is called a “boulder problem,” and focuses much more on technique and specific sequences of dynamic movements, than sheer power or strength. This form of climbing is thought to help strengthen cognitive problem-solving skills, allowing climbers to have a heightened sense of focus that can even help them push through muscle fatigue by blocking pain receptors in the brain (Wise, 2014). Climber, Ethan Pringle summarizes the feeling many climbers get by saying, “You’re just 100 percent focused and present and attentive for 20, 30, 40 minutes at a time,” he says, “It’s just so hard to get that in day-to-day life” (Chrobak, 2017). Climbing encompasses many positive aspects of physical and mental wellness and allows participants to push their limits.

Cliffside Ecology

Although cliff environments have grown in popularity, little research has been done to quantify climbing effects on cliffside ecology (Clark 2015). The impacts of climbing depend on multiple different variables, such as the slope and aspect of the cliff face, and the general environment of the climbing area. This ranges from dry desert ecosystems to temperate boreal forests, similar to what we find in Vermont (Vogler, 2011). The greatest factors for environmental disturbances on cliffside biota is from natural disturbances such as falling ice,

rock, and organic material. Anthropogenic impacts are due largely to recreational activities such as hiking and rock climbing (Farris, 1998). The most commonly documented impacts of rock climbing include cliffside vegetation removal, access trails at cliff tops, and trampling of soils at cliff bases (Nuzzo, 1996).

The majority of research done to quantify climbing's effect on vegetative species only describes if the area was generally affected or not, while an important aspect to also consider is the popularity of certain climbing routes (Thiel, H. & Spribille, 2007; Clark, 2015). The more frequently a route is climbed, the more trampled the soils at the cliff base will become from belaying, and the more wear the rock will generally experience (Baur et al., 2007). Clark, 2015 determined that frequency and popularity of certain climbing routes play a large role in the vascular plant and lichen species that can grow on the rock. For example, Nuzzo, 1996 and Clark, 2015 both found little evidence that climbing affected vascular plant species, but both determined that lichen cover varied significantly based on how frequently a route was climbed.

Five cases concluded that rock climbing has negative effects on species richness and density of vascular plant communities (Lorite 2017; Camp, 1998; Vogler 2011; Kelly & Larson 1997; Kuntz, 2006), while three other case studies have shown climbing had little to no effect on cliffside vascular vegetation (McMillan, 2002; Clark, 2015; Nuzzo, 1996).

Since climate and composition of local ecosystems and conservation efforts play such a prominent role in the varieties of species that can grow in an area, much of the research that has been done for cliffside ecology varies in results. Because of the limited research and the contradictory nature of the results, strong debates still stand between rock climbers and

landowners, with a request from both sides to conduct further studies (McMillan & Larson, 2002).

Though previous work proves to be useful for comparison and analysis, most climbing habitats have unique and varying weather, biodiversity, geologic features, levels of disruption and erosion, which makes every area a case by case evaluation (McMillan, 2002). Since there has only been a handful of studies conducted on North American cliffsides, the data is easily quantified and analyzed. One area that is similar to Bolton Dome's cliffside ecology, however, is Southern Ontario's Niagara Escarpment (McMillan, 2002). An in-depth study on the ecological impacts rock climbing has on "vascular plant, bryophyte, and lichen communities" was conducted by McMillan & Larson in 2002. Since many of the same vegetative plant species grow in this area, especially northern white cedar trees, their data is exceptionally relevant. Their research emphasized the rarity and presence of northern white cedar trees within the Niagara Escarpment cliffside ecosystem. They concluded that rock climbing has "significant negative effects on all aspects of the vegetative community of cliffs" and suggest that in newly developed climbing areas, conservation plans be amended to include new and specific policies for climbing on exposed cliffside ecosystems.

Bolton Dome is home to a delicate stand of northern white cedar trees that are typically only found on cliff tops. Though cedars are resilient trees that can thrive in nutrient deficient soils like in the cracks of cliffs, their wellbeing at Bolton Dome is at risk. The potential threat to the health of the cedar trees comes from climbers rappelling, route clearing, and anchoring top ropes, which could cause excess strain. Right now, the well-being of the cedars and other plant species is healthy because no one has been allowed to climb on the property for nearly 40 years.

But since the property has been purchased by CRAG-VT, precautionary measures have been taken to preserve the cedars as well as flora on the cliff and forest floor. They used funding from the Access Fund to create a parking lot and new climbing routes to keep recreationists from climbing undeveloped routes which degrades the health of the cliff species. They also installed a kiosk, which informs users of the rules (stay on paths, leave no trace, etc...), and single lane footpaths with markers to keep visitors from walking on and damaging the understory species (Query, 2018). Additionally, in collaboration with Peter Clark, a cliffside ecologist, they have begun analyzing the density and richness of cliffside species, such as the lichen, biota and the cedar tree population living on top of the cliff. This baseline data is valuable for assessing the cliff's health before climbing is introduced. Data will also be assessed after climbing and route development have been underway to learn how climbing routes affect the cliffside species. By creating anchors at the top of each climb, users will rely on this safety method instead of anchoring their ropes onto the cedar trees, thus having less of an impact on the species. Their conservation efforts will help to keep the Bolton Dome property pristine and healthy, while also creating safe access to the land for recreationists to enjoy.

Geology and geomorphology of Bolton Dome (Through data personally collected)

The soils found around Bolton Dome include surficial materials deposited from the latest glacier that receded around 10,000-12,00 years ago (Query, 2018). As the glacier moved north, it deposited pebbly glacial till. After its recession, the Champlain Sea was able to form, which deposited pebbly marine sand and an assortment of other finer grained minerals at an elevation of around 120-150 feet above sea level. The glacial recession, the Champlain Sea, and Lake Vermont were the last major geomorphological events to occur and have left the landscape with

rich deposits of pebbly soil. To be more specific, however, the main soil type found at Bolton Dome is Lyman-Marlow very rocky loam, sparse of many nutrients (NCAS, 2017). This soil is found on mountains and sidehill landscapes with a slope angled from 30-60 degrees, and usually has a relatively shallow depth of about 11-24 inches before reaching bedrock (NCAS, 2017). The parent material comes from loamy lodgement till derived from granite. The rocky soil and sloping landscape contributes to the species that can grow there and how the hydrology of the area functions. This type of soil also explains why northern white cedars dominate the cliffside tree cover. They are able to grow on virtually any surface, where other species simply cannot compete. On the forest floor below the cliff, white pines and other coniferous trees dominate the landscape, but closer to the cliff, more hardwood trees are found, such as oak, sugar maple and beech (Query, 2018).

There are many large boulders that line much of the property around Bolton Dome. Massive 30-foot rocks that have fallen or calved from the top of the mountain are perfect for climbers to practice their bouldering skills on. This adds to the diverse variety of climbing for all ability levels and styles at Bolton Dome.

The wildlife throughout Bolton Dome is surprisingly rich considering its nearness to interstate 89. The 40 square miles of land provides a valuable habitat for many mammals such as squirrels, rabbit, and foxes and many species of birds such as pileated woodpeckers, chickadees, cardinals and barred owls. The bird species feed on the insect community found at the neighboring powerline field, such as bees, wasps, ants, spiders, ticks and praying mantis. Vermont cliffs are typically home to raptor species such as peregrine falcons. Because of the raptor populations nesting on the cliffside, closures in the spring for rock climbing is enforced,

though none have been found yet at Bolton Dome. CRAG-VT keeps a close eye, ready to temporarily shut down the cliff if Falcons are spotted (CRAG-VT, 2017).

Objectives

There are three main objectives of this fundraiser film. The first is to highlight the complex relationships between all of the stakeholders involved in opening a new rock climbing area, and more specifically the dynamic relationship between the private landowners and rock climbers at Bolton Dome. Through strong supplemental footage (b-roll) and visual interviews with professional climbers, climbing route developers and organizational managers, the film portrays the emotion, passion, and drive of the climbers fighting to preserve this land. In contrast, an interview with the president of CRAG-VT, Kris Fiore, aims to depict the process and complications with opening the climbing area to the public. Kris also mentions the need for community support and fundraising efforts to feasibly develop and open this climbing area for public use.

The second objective is to tell the story of the unique history and ecological significance of the Bolton Dome property. As a whole, this section of the film is to also advocate and highlight the importance of conserving and protecting this natural land. To capture this sense, I utilized wide landscape shots of the land around Bolton Dome with a drone, showing off its brilliant cliff face. I also incorporated tight and close up panning shots of the wooded landscape and the subjects interacting within the surrounding forest to depict the connection climbers have with the outdoors. The cinematic aerial videography and action shots of climbing aims to illustrate the exciting and realistic visuals of the sport.

The final objective is to portray the importance of climbing to the community and to individuals. This entails describing the strong community fostered by climbing as well as the importance of accessibility to the outdoors and to natural areas.

Methods

Through this short film, the goal is to show the importance of Vermont's climbing community in opening a cliff alongside Vermont's natural land. The individuals within the community are the fundraisers, and in numbers, the community is what helps bring the project to fruition. The film also aims to highlight how successful CRAG-VT has been in the past at conserving cliffside ecosystems and providing access to cliffs through land acquisitions and land easements. Focusing on the importance of land conservation and protection from development, the film explores the ways in which CRAG-VT works with organizations and collaborates with the community to open cliffs such as Bolton Dome. The film is meant to portray how important and welcoming the Vermont climbing community is to the growing sports community in the greater Burlington area and to show the excitement of climbing outside. As previously mentioned, the ultimate goal is to help CRAG-VT raise the remaining \$65,000 to pay for the Bolton Dome property.

The film's storyline is shaped by several interviews from different important players of Vermont's climbing community, such as the president of CRAG-VT. In the film, Kris addressed the needs CRAG-VT is asking for to make the Bolton Dome project possible. He was also a main climbing actor and assistant director of the film. Additionally, I shot b-roll of Peter Clark, the local PhD student and Cliffside Ecologist, who was involved in the development and ecological analysis of Bolton Dome. I filmed him sampling tree cores, to show the process of his

ecological work. I also interviewed the Vice President of CRAG-VT, Seth Maciejowski along with the author of VT's rock climbing book, *Tough Schist*, Travis Peckham. They were both able to tell the history of CRAG-VT's relationship with the Access Fund and how the Bolton Dome project came to fruition. I interviewed two women, Melissa McNell and Anna Gutwin, who spoke towards the accessibility of the cliff and how diverse it is. Finally, I was able to interview Dr. Dick Katzman, who had climbed at the Dome before it was closed off to the public over 40 years ago. By piecing the interviews together with relevant b-roll, I was able to create a cohesive story that was attention-grabbing and (hopefully) inspiring enough to get people to donate.

Shots List Interview Questions

Mood of the film-

Motivated, positive, excited

“We're excited this project is finally happening! We wanna share it with you”

Fast paced/concise

Shots list:

Drone Footage - various angles with the dome

-wide and far shots

-sweeping/panning shots

-tracking and moving shots (far to close or fly by)

-(if possible) a raising shot from bottom to top of cliff passing by people

-filming climbers

Cliffside shots

- Filming Travis rapping down, drilling/bolting, inspecting old bolts, tapping on/ ripping out old bolts, all parts of the process... try to get plenty of wide **and** tight shots from as many angles as possible. Above the tree line if possible for better, less cluttered shots

- A panning shot of Grandma's House Boulder

-Travis juggling a rope

-fix hardware/tearing out old bolts

-pointing around

-planning out his moves

-Peter Clark performing tree core sample and looking up inspecting lichen and talking with Kris, pointing around at different parts of the cliff.

Climbing shots

- few different shots of brief scenic climbing on lead, pulling some cool moves
- shot from directly above, from the side...
- close up shot of clipping, trying hard
- might be able to take film from previous days?
- Classic old route climbing (kris knows)
- Kris pulling out an old bolt

Crew shots

- Group walking up to the cliff in single file, passing the camera
- Shots of the group talking/laughing/hanging out
- passing off gear, setting up ropes
- flaking rope
- belayer feeding rope

Interviews

Have everyone say “The Bolton Dome” (for outro)

Travis Peckham

Could you say your name and role for CRAG-VT and how long you’ve been involved?

What sets CRAG-VT and the VT climbing community apart from other climbing organizations and climbers?

What do you think CRAG-VT’s strengths or success’ have been?

Could you talk about the relationship between the Access Fund and CRAG-VT (how this is the biggest project they’ve done)

Why should people be psyched on this project or donate?

Anything else you wanna mention?

Dick Katzman:

Could you say your name, your affiliation with CRAG-VT and how long you've been involved?

What has climbing in Vermont meant to you?

What's your relationship or history with the Bolton Dome?

What does it mean to see this cliff re-opened?

What do you think CRAG-VT's strengths or success' have been?

What are you excited about when thinking about the future of Vermont climbing?

How has the community grown stronger over the years?

Seth Maciejowski

Could you say your name, your affiliation with CRAG-VT and how long you've been involved?

What do you think CRAG-VT's strengths or success' been?

Could you talk about the relationship between the Access Fund and CRAG-VT (how this is the biggest project they've done)

What does it mean to be a Vermont climber?

Kris Fiore

Climbing has come a long way in terms of buying cliffs and jumping through all the hoops to climb legally and be responsible. Could you speak to CRAG-VT's role in this and how the VT climbing community has led the charge?

Could you talk about how climbers connection to the land and sense of place, maybe more profound than other sports?

Could you talk about the relationship between the Access Fund and CRAG-VT (how this is the biggest project they've done)

How could Bolton dome help build the climbing community?

What is CRAG-VT asking for, what do you need to pay off? Could you talk about the fundraising efforts?

What are you excited about when thinking about the future of Vermont climbing?

Why should people be psyched on this project or donate?

Schedule of the day (ideas) to portray:

Strong community

Diversity of climbing

 Bouldering from v2-v10

 Sport climbing from 5.4-5.13

 Easily accessible cliff from parking lot

Huge thanks to Access Fund

Cliffside ecology

Fundraiser part

Discussion/Outcomes

What Bolton Dome means for the community

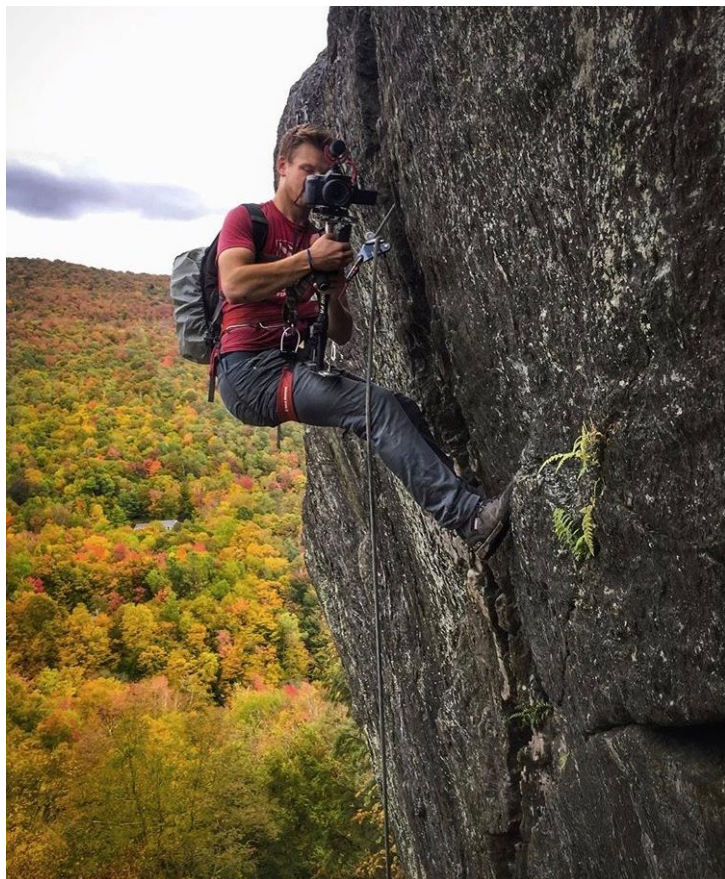
Access to Bolton Dome allows recreationists easy access to a local climbing area only a few minutes off the highway. Its distance from Burlington, Williston, Richmond and other surrounding towns allows a wide audience ability to use the cliff. Since the approach from the parking lot is less than a minute walk, it will be easily accessible for everyone. This area will be a great, approachable cliff for families and experts alike. There are routes ranging from easy 5.2 top rope climbs all the way to 5.13 trad routes with plenty in between.

Vermont has limited climbing areas due to a lack of cliffs on public land. Because of this, there are only a handful of developed climbing areas in Northwestern Vermont. With a largely growing climbing community because of climbing gyms like Petra Cliffs and Metrorock, there has been higher traffic around the few outside areas the public has access to. The opening of Bolton Dome offers another space for beginners to get experience outside and for experts to train as well, while diverting some of the traffic away from other popular areas like Lower West Bolton, Upper West Bolton and the Bolton Quarry. Additionally, this opened cliff will keep people away from closed cliffs and private property.

My desired outcome for this project was to create a comprehensive and compelling short fundraiser film that improved the effectiveness of the fundraiser campaign for the Bolton Dome. Secondly, the goal was to share the film through many networks within the climbing community locally and nationally. To gain more traction with the film, I reached out to many climbing media companies and was lucky enough to be published by Rock and Ice Magazine, The Access Fund and The Alpinist, which have a large online presence and a much bigger reach than CRAG-VT does alone. Both Rock and Ice Magazine, and The Access Fund, are large media platforms that each have a following of more than 200,000 subscribers on Facebook. Additionally, via Facebook the film's "sneak peek" and the full-length video were shared by other LCO's, rock climbing publications and many excited rock climbers. All of the media attention will be crucial in the fundraising efforts for the Bolton Dome and will help give the film more traction. The Bolton Dome fundraiser campaign, with the attached film, has raised more than \$3,700. This is a good start, but hopefully the more attention the film gets nationally, and the more shares it receives over social media, the more funding it will receive. The audience for the film is mainly

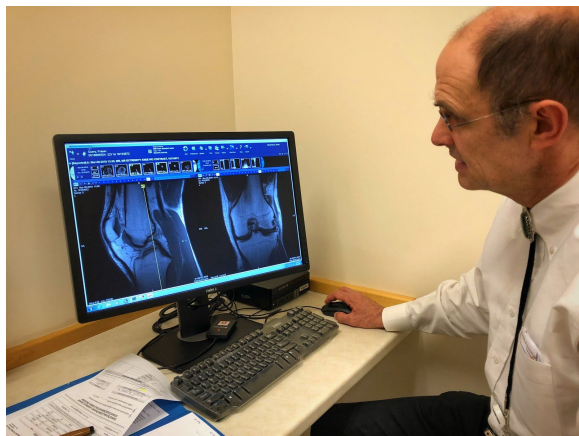
climbers, though I intended to make it as approachable and relatable as possible to prospect outdoor recreationists, landowners, and other local climbing organizations around the country trying to accomplish similar projects.

Project Summary (Personal Involvement/Conclusion)



(Filming for the cliffside ecology project // Upper West Bolton, Vermont)

In early February, I tore my ACL and meniscus skiing. After surgery I missed the following 2 weeks of school and was unable to put any weight on my leg for 6 weeks. My original thesis project, which involved a feature length documentary film analyzing the impacts of climbing on cliffside ecosystems, posed to be impossible because of my inability to film while hanging off of cliffs.



Left:
(Doctors visit with the Surgeon examining my torn ligaments).

Right:
(Day of surgery, mentally prepping).





I had already started filming for this project and had reached out to the stakeholders, but unfortunately had to abandon the project because of my injury. Though I was disappointed since I had put so much time and energy into this project, I was equally motivated to find a new project that included film production and rock climbing.

(Crag-VT logo)

A friend recommend that I reach out CRAG-VT because they had recently purchased a new property in Bolton, Vermont, called Bolton Dome, and needed help repaying the loan they received from The Access Fund.



(Bolton Dome Climbing Area // Bolton, VT)

A few minutes after reaching out to CRAG-VT to pitch them the idea of filming a fundraiser video for the Bolton Dome, I received an enthusiastic response from the president, expressing his interest in my proposition. The project quickly took off with the goal to help fundraise the last \$65,000. I began attending CRAG-VT board meetings and went out to film

with CRAG-VT board members and local climbers multiple times. One session, I went out to film a few hours after getting bi-lateral quad biopsy surgery (a secondary research surgery that required the removal of muscle tissue from both of my quad muscles). I hobbled around the snowy woods with a tripod as a crutch.

Though I've filmed for many projects over the years in classes, for clients, and from personal projects, I have never made a fundraiser video. For this project, I had to spend a long time researching techniques on how to make an effective fundraiser pitch and storyline. Additionally, I reached out to my old film teachers for their advice and watched hours of different fundraiser videos to get inspiration. I also spent countless hours contacting local climbing celebrities, professional climbers, CRAG-VT board members, and cliffside ecologists. After gathering a crew of actors and climbers, I began writing and scripting the storyline for the film. Finally, I reached out to my good friend, classmate, and fellow filmmaker, Colby Yee to help film the project with me. He was a major asset for this project because he was able to hang off the cliff to get quality shots of climbing that I was unable to get. He also helped move my camera while I navigated around the uneven wooded terrain with my crutches. The production of the film consisted of a drone, high-end cameras, and professional microphones.



(Far left- Rock climbing author, Travis Peckham // Middle- Filmer, Colby Yee // Far right- me)

After a full week of filming at the cliff, I was under time restraint to finish editing. My deadline for the film was a premiere at Petra Cliffs

Climbing Gym on April 19th for the Spring Kick-Off, only a week after we stopped filming. I spent at least 15 hours just editing the 3-minute film and finished the final version on the day of the film premiere.



(Editing and editing and editing)

(A view from the crowd at the premiere)



The premiere had a turn out of about 100 people and received a strong applause, with endearing compliments after the film showed. What I was able to produce for CRAG-VT posed to mutually beneficial for both the organization and myself. For me, I gained valuable experience in the field, directing my first serious (short) film with major actors. It was a strong learning experience and helped me gain confidence as a young film producer. I also utilized and developed my communication skills through constant correspondents with all of the players involved in the film, especially CRAG-VT's social media director, whom I corresponded with daily about edits and critiques for the film. Finally, in producing this project I applied many of

the core environmental aspects into the film and through the writing of my thesis. I ultimately felt like I was able to contribute and give back in a positive way to the climbing community that has given me so much inspiration during my time in Burlington, Vermont. For CRAG-VT, they received a free fundraiser film that otherwise would have cost them a significant amount of money. The film helped provide effective marketing material, national attention through social media and hopefully a substantial amount of fundraising. Finally, the film stands as a testament to CRAG-VT's success, expertise and professionalism, and will help the organization receive funding for future projects.

Link to Film

<https://www.gofundme.com/BoltonDome>

Bibliography

Access Fund (2017). The Fight Is On: Stand With Bears Ears.

Achey, J. (2005, 07). Traditional trad. *Climbing*, 12. Retrieved from <https://search-proquest-com.ezproxy.uvm.edu/docview/236451139?accountid=14679>

Aleksey. (2014, September 5). Types of Climbing. Retrieved December 09, 2017, from <http://climbingschool.org/types-of-climbing>

Baur, B., Froeberg, L. & Mueller, S.W. 2007. Effect of rock climbing on the calcicolous lichen community of limestone cliffs in the northern Swiss Jura Mountains. *Nova Hedwigia* 85: 429–444.

Brambilla, M., Rubolini, D.& Guidali, F. 2004. Rock climbing and raven *Corvus corax* occurrence depress breeding success of cliff-nesting peregrines *Falco peregrinus*. *Ardeola* 51: 425–430.

Burr, Andrew. “Flash: The Many Different Types of Rocks.” *Climbing Magazine*, 2 May 2016, www.climbing.com/photos/flash-the-many-different-kinds-of-rocks/.

Camp, R. J. and R. L. Knight (1998). "Effects of rock climbing on cliff plant communities at Joshua Tree National Park, California." *Conservation Biology* **12**(6): 1302-1306.

Chrobak, U. (2017, August 3). A Potential Natural Treatment for Attention-Deficit/Hyperactivity Disorder: Evidence From a National Study. Retrieved December 06, 2017, from <http://ajph.aphapublications.org/doi/abs/10.2105/AJPH.94.9.1580>

Clark, P., & Hessel, A. (2015). The effects of rock climbing on cliff-face vegetation. *Applied Vegetation Science*, *18*(4), 705-715. doi:10.1111/avsc.12172

Climbing in Vermont. (2015). Retrieved December 06, 2017, from <https://www.mountainproject.com/area/105891603/vermont>

CRAG-VT. (2017, October 29). Retrieved December 09, 2017, from <https://cragvt.org/>

DiAngelis, S. (2016, September 12). A Brief History of Rock Climbing. Retrieved December 08, 2017, from <https://mojagear.com/learn/2015/12/09/a-brief-history-of-rock-climbing/>

España-Romero, V., Jensen, R. L., Sanchez, X., Ostrowski, M. L., Szekely, J. E., & Watts, P. B. (2012). Physiological responses in rock climbing with repeated ascents over a 10-week period. *European Journal of Applied Physiology*, 112(3), 821-828. doi:10.1007/s00421-011-2022-0

Farris, M. 1998. The effects of rock climbing on the vegetation of three Minnesota cliff systems. *Canadian Journal of Botany* 76: 1981–1990.

Fetters, A. (2014, 2014/09//). The fast route to a rock hard body. *Women's Health*, 11, 134.

Green, S. (2017, November 30). Use Colored Climbing Chalk to Leave No Trace. Retrieved December 09, 2017, from <https://www.thoughtco.com/use-colored-chalk-to-leave-no-trace-755626>

Green, Stewart. “Outdoor Recreation Study Shows Popularity of Climbing.” ThoughtCo, 2016, www.thoughtco.com/popularity-of-climbing-lessons-3972254.

Javier, A. (2016, Apr 08). Show me the ropes: Learn about O'ahu's climbing scene. *University Wire* Retrieved from <https://search-proquest-com.ezproxy.uvm.edu/docview/1779604496?accountid=14679>

Kelly, P. E. and Larson, D. W. (1997), Effects of Rock Climbing on Populations of Presettlement Eastern White Cedar (*Thuja occidentalis*) on Cliffs of the Niagara Escarpment, Canada. *Conservation Biology*, 11: 1125–1132. doi:10.1046/j.1523-1739.1997.96248.x

King, Hobart. “Dolomite.” *Geology*, Feb. 2016, geology.com/rocks/dolomite.shtml.

Koch, P. (2017, 11). 5 Outdoor Workouts. *Joe Weider's Muscle & Fitness*, 78, 136-141. Retrieved from <https://search-proquest-com.ezproxy.uvm.edu/docview/1959094024?accountid=14679>

Kuntz, K. & Larson, D. 2006a. Microtopographic control of vascular plant, bryophyte and lichen communities on cliff faces. *Plant Ecology* 185: 239–253.

Kuo FE, Faber Taylor A. A Potential Natural Treatment for Attention-Deficit/Hyperactivity Disorder: Evidence From a National Study. *American Journal of Public Health*. 2004;94(9):1580-1586.

Lake Champlain Thrust Fault: Geologic History. Retrieved September 15, 2016, from <http://www.uvm.edu/giv/givsummer2010/westernskunkcabbage/ThrustFaultHistory/LakeChamplainThrustFault.html>

Lisa, B. (2008, 2008/07/19). Weekend: Body: Climbing vs Bouldering, Brief article. *The Guardian (London, England)*, p. 85. Retrieved from http://bi.galegroup.com.ezproxy.uvm.edu/essentials/article/GALE%7CA181567994/9b9b5625d1f54224d73e61cca9f4ada8?u=vol_b92b

Lorite, J., Serrano, F., Lorenzo, A., Canadas, E. M., Ballesteros, M., & Penas, J. (2017). Rock climbing alters plant species composition, cover, and richness in Mediterranean limestone cliffs. *Plos One*, 12(8). doi:10.1371/journal.pone.0182414

Luttenberger K, Stelzer E-M, Först S, Schopper M, Kornhuber J, Book S. Indoor rock climbing (bouldering) as a new treatment for depression: study design of a waitlist-controlled randomized group pilot study and the first results. *BMC Psychiatry*. 2015;15:201. doi:10.1186/s12888-015-0585-8.

Maciejowski, S. (April, 2018). Personal Interview

McMillan, M. A., & Larson, D. W. (2002). Effects of Rock Climbing on the Vegetation of the Niagara Escarpment in Southern Ontario, Canada. *Conservation Biology*, 16(2), 389-398.

Natural Resource Conservation Service. Web Soil Survey - Home, USDA, 21 Aug. 2017, websoilsurvey.nrcs.usda.gov/app/

Nuzzo, V.A. 1995. Effects of rock climbing on cliff goldenrod (*Solidago sciaphila* Steele) in Northwest Illinois. *The American Midland Naturalist* 133: 229–241.

Outridge, P. M., et al. (2017). "Holocene climate change influences on trace metal and organic matter geochemistry in the sediments of an Arctic lake over 7,000 years."

Pearson, D. G., & Craig, T. (2014). The great outdoors? Exploring the mental health benefits of natural environments. *Front Psychol*, 5. doi:10.3389/fpsyg.2014.01178

Query, F. (2018.). Environmental Studies at the University of Vermont.

Revolvy. (2017). "Simeiz" on Revolvy.com. Retrieved December 09, 2017, from https://www.revolvy.com/topic/Simeiz&item_type=topic

Schmidt, D. (2003, Jun 15). Leave no trace - ecologically friendly sport climbing. *Climbing*, , 72. Retrieved from <https://search.proquest.com/docview/236371887?accountid=14679>

“Stewardship & Conservation.” Access Fund - Home - Access Fund, www.accessfund.org/meet-the-access-fund/our-approach/stewardship-conservation.

Thiel, H. & Spribille, T. 2007. Lichens and bryophytes on shaded sandstone outcrops used for rock climbing in the vicinity of Göttingen (southern Lower Saxon, Germany). *Herzogia* 20: 159–177.

THORÉN, P., FLORAS, J. S., HOFFMANN, P., & SEALS, D. R. (1990). Endorphins and exercise: physiological mechanisms and clinical implications. *Medicine & Science in Sports & Exercise*, 22(4), 417-428.

U. (2016, May 24). Park Statistics. Retrieved December 08, 2017, from <https://www.nps.gov/jotr/learn/management/statistics.htm>

Vogler, Frank, and Christoph Reisch. “Genetic Variation on the Rocks — the Impact of Climbing on the Population Ecology of a Typical Cliff Plant.” *Journal of Applied Ecology*, vol. 48, no. 4, 2011, pp. 899–905. *JSTOR*, JSTOR, www.jstor.org/stable/20870016.

Wise, Abigail. “How Rock Climbing Does Your Mind -- And Body -- Good.” The Huffington Post, TheHuffingtonPost.com, 30 Aug. 2014, www.huffingtonpost.com/2014/08/30/health-benefits-rock-climbing_n_5708847.html.