

# Global Changes & Society Project Proposal

*SUST 6000 Midterm – Spring 2020*

<i>Title</i>	Promoting Education for Sustainable Visitation to High Elevation Environments in the Wasatch Front
<i>Group Members</i>	Amy Flowers, Jared Watson, Hannah Satein, Taylor Litwin, Tiffanie Fogel, Sayma Khajehei, McKenna Granato
<i>Main Research Theme</i>	Native plant conservation and invasive plant prevention
<i>Secondary Research Themes</i>	Education and awareness via social media campaign and informational handout at Snowbird; provision of boot brushes as intervention tools
<i>Project Problem: Include a short summary of 3-4 lines explaining the project problem.</i>	Increased tourism and recreational use in Little Cottonwood Canyon threatens to exacerbate ecosystem impacts in sensitive high elevation environments, as well as advance the spread of invasive species due to visitors' lack of awareness of appropriate actions to reduce impact.

**CONTENT:**

- I. *Project Scope*
- II. *Background and Rationale*
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## **I. PROJECT ABSTRACT/SCOPE**

The beauty of the Wasatch Front is renowned inside and outside the state of Utah. In particular, the high elevation environments, such as Albion Basin in Little Cottonwood Canyon (LCC), draw millions of

visitors annually from near and far to marvel at their beauty, and in the summertime, the magnificent wildflower blooms. However, stakeholders in LCC, Big Cottonwood Canyon, and Mill Creek Canyon are struggling to manage the impacts of this visitation on the environment, including the destruction of native plant communities and spread of invasive species, and recreational use and tourism is only projected to increase in the future. Currently, stakeholders are working hard to educate visitors to the area about sustainable visitation practices including Leave No Trace practices, prevention of invasive species spread, and special regulations for the canyons. This proposal is aimed at complementing stakeholders' ongoing work to protect high elevation ecosystems in these three canyons through two primary efforts: an educational social media campaign and installation of boot brushes at two locations in LCC.

## ***II. BACKGROUND & RATIONALE***

*LOCATION | geographical location of the project implementation (city, specific location(s), communities)*

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As can be seen in the map below, the primary area of focus, and inspiration, for this project is the Albion Basin (9,800 feet) in LCC. Snowbird Ski and Summer Resort is a secondary area of focus within LCC for this project. The types of ecosystems (upper montane, subalpine, and alpine) found at both of these high elevation locations also occur in other areas of LCC, as well as in Big Cottonwood Canyon and Mill Creek Canyon. Thus, the environmental education information that will be distributed in our social media education campaign will be relevant to all high elevation environments, upper montane through alpine (9,000-10,000+ feet), in these three canyons. In addition, the information pertaining to following watershed restrictions for water quality is also directly relevant to Big Cottonwood Canyon. While the information will be most relevant to these types of high elevation environments in these three canyons, some of the information such as general Leave No Trace practices, methods to avoid the spread of invasive species, or special use regulations on Forest Service lands will likely be applicable to many other natural areas.

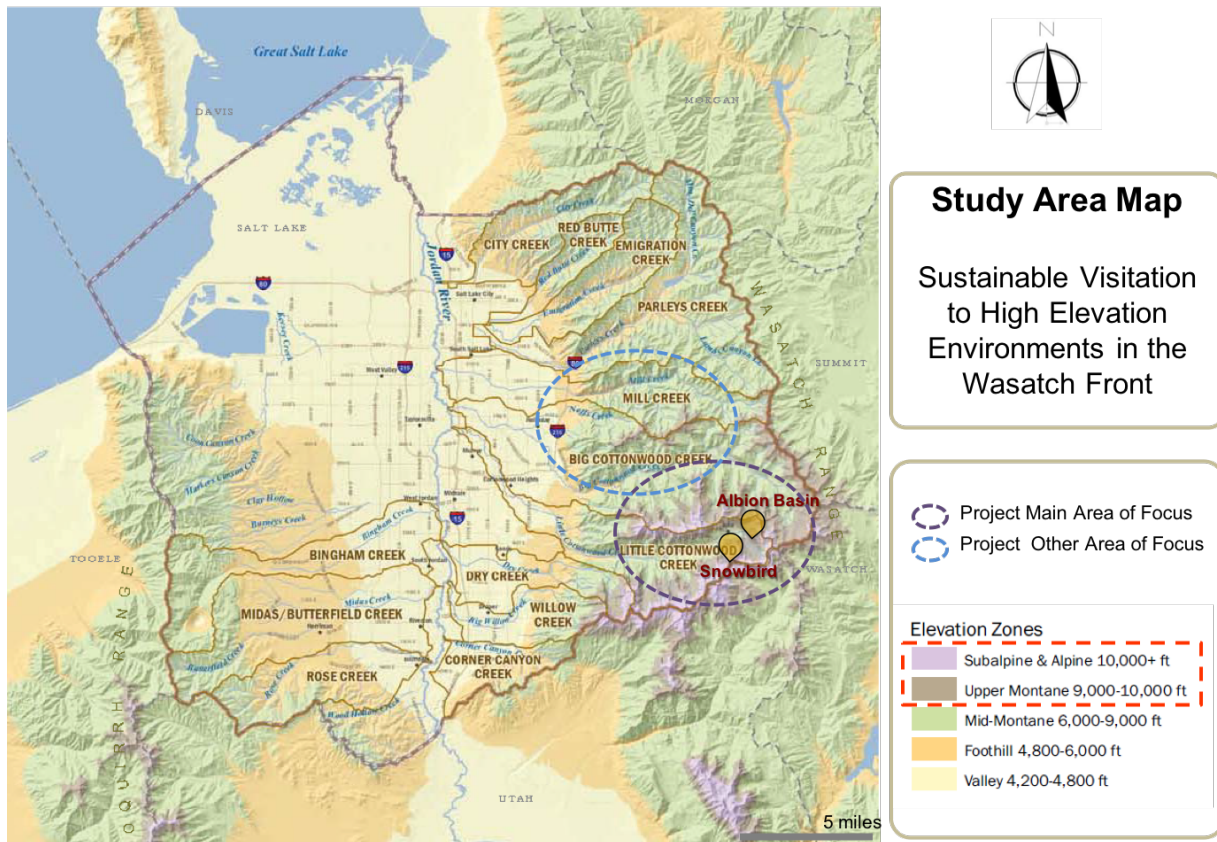


Figure 1. Study Area Map

**BACKGROUND** | environmental, social, economic, political

LCC, located just 15 miles southeast of Salt Lake City, Utah, is a pinnacle destination for local residents as well as tourists from around the world. The canyon is most well-known for all of the recreational activities that occur there, such as rock-climbing, skiing, snowboarding, camping, hiking, fishing, and biking. Although the land in LCC may seem pristine, this has not always been the case. After the early pioneers settled in Salt Lake City, LCC became a booming location due to its natural resources. A few of those resources are timber, silver, and gold. James, Fell, and Notarianni (9) explain that the extraction of natural resources in LCC first began in the 1840s and 1850s (p. 272). Alta, a town within Albion Basin, remained a mining-district hub well into the 1920s (9). The mining industry left behind a lot of waste and ruins in the area. Luckily, stakeholders in LCC were able to repurpose some of these resources and recover from the damage:

The old miners had unintentionally done a good job of blending their operations into the rugged natural setting. Old adits became water reservoirs for newer communities built atop old mill sites, and the larger mine dumps served as waste rock for road construction and parking lots for the Cottonwoods' exciting new industry (9, p. 294).

It is important that lessons are learned from the exploitation of LCC during the early colonization of Salt Lake City, and efforts to restore and preserve the present-day natural environment are continued in Albion Basin and LCC. Local stakeholders are currently working to prevent the spread of invasive species and ensure the preservation of native plant communities in LCC, as well as in Mill Creek and Big Cottonwood Canyons (3, 6). For instance, Snowbird Ski and Summer Resort in LCC has identified invasive species to be a growing challenge to be met on their property and are working with partners such as Cottonwood Canyons Foundation to begin addressing it (H. Arens, personal communication, February 13, 2020). Field Bindweed, Houndstongue, Canada Thistle, Musk Thistle, and Scotch Thistle are examples of invasive species present in the Wasatch Front that can flourish in high elevation environments (7, 8, 15).

However, stakeholders in the canyons, such as individuals at the Alta Environmental Center, Town of Alta, Cottonwood Canyons Foundation, and Salt Lake City Public Utilities, have identified that tourism, and tourists who are unaware of best practices for recreating in sensitive high elevation environments, such as Albion Basin, threaten these efforts: “Albion Basin is probably the prime wildflower-viewing destination in Utah and for decades, the town and our partners have struggled to manage summer recreation visitation and the environmental impacts associated with that visitation” (C. Cawley, personal communication, January 31, 2020). Indeed, high elevation environments are particularly sensitive to impacts from human use such as recreation (5, p. 69).

While Albion Basin is a large attraction year-round, it is especially a draw during its spectacular wildflower blooms that occur in the summer. The wildflower season in LCC occurs in late July and attracts recreators and tourists from far and wide. Thus, stakeholders in LCC such as the Cottonwood Canyons Foundation, the Forest Service, and Snowbird and Alta Ski Area, in partnership with these entities, work annually to educate summer tourists about Leave No Trace practices, prevention of invasive species, and the watershed protection and special use regulations in the canyons, i.e. sustainable visitation, in events such as the Wasatch Wildflower Festival and through interpretive guides and rangers present on trails during the summer (T. Mazzacavallo, personal communication, February 3, 2020).

Currently, LCC receives 2.1 million visitors annually and together Big Cottonwood Canyon and LCC receive around 4 million visitors annually, a rate on par with large national parks such as Yellowstone and Zion (2). However, current visitation rates are not the only challenge: the population of Salt Lake City and Utah is rapidly rising; in fact, Utah has the fastest population growth rate in the United States (4). With this growing population, recreational use of LCC is expected to increase, as are visitation rates from out-of-state visitors (11). As Chris Cawley, Assistant Town Administrator of the Town of Alta, said “recreation use in the summertime is exploding” (C. Cawley, personal communication, February 20, 2020). Thus, increased recreation in LCC has the potential to further threaten the biodiversity of Albion Basin. It also threatens to hasten the spread of dominant invasive species: according to Anderson et al. (1), significantly higher numbers of non-native vegetation species were found in areas of United States National Parks with high visitor concentrations.

For this project, our goal is to support and further stakeholders' ongoing education efforts to teach visitors about how they can minimize their impacts to Albion Basin and other similar environments in LCC, Big Cottonwood Canyon, and Mill Creek Canyon. This will include education on protecting native species through Leave No Trace practices, how to minimize the spread of invasive species and the provision of boot brushes to help further this, the watershed protection rules in LCC and Big Cottonwood Canyon, and special use regulations relevant to visitors, i.e. commercial photography permits, on Forest Service land. Our goal is to neither promote increased tourism to Albion Basin or these other areas, nor discourage it. Our focus is on increasing awareness of sustainable practices for the visitors to these areas.

*RATIONALE | importance, experiences and added-value*

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The overarching problem that LCC is facing is managing the impacts from current and projected increased recreational use, specifically native species and biodiversity harm, the spread of invasive species, and the violation of watershed protection rules and special use regulations. After reaching out to various stakeholders in LCC (Alta Environmental Center, Cottonwood Canyons Foundation, Town of Alta, Friends of Alta, Snowbird, and Salt Lake City Public Utilities), we have come to the conclusion that easily accessible education with a broad reach is necessary to mitigate harmful impacts that can be caused by recreation. Indeed, these stakeholders are working independently and in partnership to educate visitors about how to visit Albion Basin, LCC, and the other canyons in a sustainable manner and are focusing their efforts on these three major areas of information (T. Mazzacavallo, personal communication, February 3, 2020).

Our proposal for this project is to help reduce the negative impacts of recreation in LCC, and specifically Albion Basin. Our primary method for achieving this goal will be through creating a social media campaign, to broaden knowledge about the impacts of recreation and ways to mitigate them. Discussions with local stakeholders in LCC have shown there is support for using a social media campaign to bolster and further spread their ongoing environmental education efforts in LCC and the other canyons. As Beth Yetter of the Alta Environmental Center said, "I think that is the crux of the issue all parties in LCC are facing: what is effective communication and how do we broaden our reach?" (personal communication, January 24, 2020). Similarly, Chris Cawley, Assistant Town Administrator of the Town of Alta, stated, "I think consistent, accessible communication is critical to the future success of the Alta summer program" (personal communication, January 31, 2020). Several stakeholders in LCC also indicated that there are problems specifically with social media users in Albion Basin, i.e. individuals coming to the basin and going off trail to get a photo in the wildflowers to post on social media. Thus, using social media as a tool to share educational information is likely to be particularly useful to target this problematic population in addition to other users. Therefore, we believe that using social media for this campaign complements the ongoing efforts in the canyons, can reach a particularly relevant audience, while also offering the potential to broaden the reach of the message at the same time, as local stakeholders desire.

In addition to these practical reasons, there is also support for using this approach in the literature on interventions to encourage sustainable behavior. For instance, summarizing the literature on environmentally-friendly behavior, Pearson et al. (12) assert that a lack of knowledge is a barrier to individuals' pro-environmental behavior in terms of an absence of awareness that a problem exists, as well as specific actions that individuals can take to help ameliorate impacts. The authors further illustrate that social media is a tool that can successfully help combat these barriers to create or facilitate pro-environmental action (p. 390). Findings by Kaur and Chahal (10) also support the use of social media to encourage environmentally-friendly behaviors. Pearson et al. state that while social network use is highest among young adults, around half of people ages 65 and up are also using social media in the U.S. (12). Therefore, our campaign is likely to effectively reach a core-intended audience, younger social media users, while also spanning a wider audience, which we believe will also be achieved by sharing our campaign content on two different platforms, Facebook and Instagram.

In terms of more specifics for our campaign, it will focus on:

- Leave No Trace principles
- Invasive species prevention, including education on use of boot brushes
- Watershed protection and special use regulations

Since visitation to Albion Basin skyrockets during wildflower season, and with peak visitation occurring in mid to late July, we are planning to launch our social media campaign in the late spring or early summer. We envision our campaign occurring over a month time period with a total of 4-8 written posts, either one or two posts per week, and covering our three topic areas more or less equally in terms of number of posts. Our intent is to make our content catchy, engaging, and concise; we will be tailoring our content towards a target audience of casual recreators, both locals and out-of-town visitors, based on feedback from LCC stakeholders. We will also research germane, fun hashtags we can use to help spread the message and/or create our own as needed. Finally, we will contact local photographers and ask if they would be willing to allow us to use photos to go with our posts with appropriate credit given.

We will create the campaign content in a master document with a calendar of proposed post dates. We plan to offer the local stakeholders we have been in contact with during the project formulation the opportunity to comment on our draft master content document before we send it out to ensure it fits with the ongoing messaging efforts in the canyons, as well as to see if they would be willing to list their names in support of the effort. We will then go to large, relevant social media accounts to ask them to voluntarily support our effort by sharing the content on their accounts, both Instagram and Facebook (if applicable). Some ideas for accounts we will reach out to include: @visitsaltlake, @visitutah, and @universityofutah. We will also contact relevant social media influencers to either post the content or share it to help further spread our reach such as @katieboue, @savannahsomewhere, @outdooradvocacy, and @briannamadia. Finally, we will also reach out to stakeholders in LCC and the other canyons to see if they want to share the content such as Alta Ski Area, Snowbird, Brighton, Solitude, Friends of Alta, and Cottonwood Canyons Foundation. In sum, we will be reaching out to a diversity of accounts likely to have followers who match our intended audience of casual local and out-

of-town recreators. Even getting a few of these accounts and influencers to share our content provides the potential to reach hundreds of millions of people, e.g. @briannamadia has 294 million followers. Finally, we will create and use a group Gmail account for all communication with partners. Since this campaign will launch after the semester ends, we will use Boomerang for Gmail to setup and send out automatic emails with reminders and specific post content to each partner in advance of each proposed post date. We will continue checking this email and maintaining any necessary correspondence with partners throughout the campaign.

While the inspiration for this project is Albion Basin, the content of our social media campaign will be relevant to the other upper montane and alpine environments in Little Cottonwood, Big Cottonwood, and Mill Creek Canyons. Thus, our project strives to help reduce negative impacts of tourism in these areas beyond the extent of the Albion Basin and will provide added value throughout the Wasatch Front. In doing so, we will be supporting the ongoing educational efforts of local stakeholders in LCC and the other canyons and our coordination with them will help ensure our social media campaign content is aligned with the clear, consistent messaging they are working to achieve across these three canyons (T. Mazzacavallo, personal communication, February 3, 2020).

In addition to a social media campaign, we plan to install boot brushes at popular trailheads in Albion Basin and on Snowbird's property to reduce the spread of invasive plants. Boot brushes are a common tool used to help reduce the spread of invasive species by helping recreators remove seeds from their shoes before going on trail. Several of the aforementioned invasive species in the Wasatch Front spread via seed: Houndstongue, Musk Thistle, Canada Thistle, and Scotch Thistle. Houndstongue in particular is noted for thriving in disturbed areas along travel corridors such as trails and dispersing widely due to its "bur-like" seed that easily attaches to clothing (8). We plan to work with project partners in Albion Basin (Alta Environmental Center and the Forest Service) and Snowbird to place two boot brushes and an interpretive sign at the entrance to highly trafficked trails at each location (see Figure 2). We believe this will help prevent the introduction and/or spread of invasives from other locations outside of LCC to these areas or within the canyon such as from trails on Snowbird's property up to Albion Basin. Partners have expressed interest in this project and we have reached out to all of them to begin further ascertaining the feasibility and logistics of this project. We plan to work in coordination with partners to determine the location of these installations, receive approval for the design and informational content, and coordinate the installation, including going through any needed administrative approval processes. We are also currently working with the Forest Service and Cottonwood Canyons Foundation to try to create a list of the exact invasive species present at these two sites; we will include the most predominant species on our signs to help educate visitors. As briefly mentioned, we plan to complement these efforts by using our social media campaign to educate individuals on how to use the boot brushes in addition to the information contained in the interpretive signs.



Figure 2. Example of a boot brush and interpretive sign

Source: <https://www.mipn.org/preventingthespreadofinvasivespecieswhilerecreating/>

Finally, there is one additional component to our project. During a conversation regarding our project, Hilary Arens, Director of Sustainability and Water Resources at Snowbird, mentioned that an informational sheet to be placed at trail information signs describing the invasive species present on Snowbird’s property, providing information about why they are problematic, and including pictures and descriptions for identification, would be a great benefit to Snowbird. A member of our group, Amy Flowers, has agreed to complete this additional project for Snowbird. While the details are not fully finalized, the idea is to create an informational sheet that will remain at trailheads for visitors to reference before they head out on the trails and that could be distributed as hand-outs at events such as weed-pulls or the Wasatch Wildflower Festival. There is also the potential for a similar informational sheet to be created for the native flowers on Snowbird’s property.

### **III. OBJECTIVES & EXPECTED RESULTS**

*OBJECTIVES | immediate, long-term*

#### **Immediate objectives:**

This project offers the potential to have direct benefits for the stakeholders of LCC that are working to protect native plant species and prevent the spread of invasive species in high elevation environments such as Albion Basin. This project also offers benefits to stakeholders in Big Cottonwood Canyon and Mill



Creek, as well as individuals outside these canyons, as will be further discussed in the beneficiaries section. It is critical that this project be implemented now to help stakeholders in their work to educate visitors to these environments about sustainable visitation practices in advance of the wildflower season. As stated, stakeholders are working to do this, but find managing the impacts of visitation in Albion Basin and other environments a challenge every summer. Thus, this additional assistance may play an important role in helping stakeholders achieve their goals this year.

Our immediate objectives focus on the impacts from this project in these high elevation environments during 2020. In terms of environmental impacts, the project aims to reduce visitors' impacts on native species and reduce the spread of invasive plants. Social impacts or benefits include: providing consistent educational material on social media platforms; creating community awareness of and support for sustainable tourism in the Wasatch Front; and increasing pro-environmental behavior for visitors to these high elevation environments. Finally, the project may provide economic benefits in terms of reduced maintenance costs from fewer tourists violating leave-no-trace practices, disturbing native plant communities, and spreading invasive species. It may also indirectly bolster revenue from tourism through stimulating curiosity and excitement about visiting the high elevation environments in these canyons through engaging social media posts.

#### **Long-term objectives:**

This project also aims to have impacts on stakeholders and a broader community over a longer time period. The long-term goal of the project is to educate visitors to sensitive upper montane and alpine environments in the three canyons about Leave No Trace practices to protect native plant species, prevent the spread of invasive species, and follow the watershed protection rules and pertinent special use regulations.

More specifically, the long-term environmental objective of the project is to minimize the impacts on native species, reduce the proliferation of invasive species, and maintain healthy ecosystems in high elevation environments in LCC, Big Cottonwood Canyon, and Mill Creek Canyon.

There are multiple long-term social goals for the project. These include:

- Creating behavioral change i.e. sustainable visitation practices are adopted by tourists.
- Having more informed and educated recreators.
- Preserving these environments for future generations to experience.
- Reducing the Instagram "wildflower trampling phenomenon".
- Support educational initiatives focused on sustainability.

In terms of economic impacts, similar to the immediate objectives, we hope this project will help reduce stakeholders' expenditures on maintenance, invasive species removal, and restoration due to more visitors using sustainable visitation practices. We also hope that this project will help ensure that summer tourism remains a viable economic activity in these canyons, by helping ensure the native ecosystems remain and thrive.

***BENEFICIARIES** | stakeholders, partners, communities*

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Direct beneficiaries of this project will be anyone who values and appreciates the scenic beauty of Albion Basin’s native plant ecosystem, as well as similar ecosystems in Big Cottonwood Canyon and Mill Creek Canyon. It seems a safe assumption that the majority of the residents living in LCC would place a high value on tourists visiting Albion Basin, and other similar environments, practicing behaviors that reduce their environmental impacts. Other direct beneficiaries will be stakeholders in the canyons who are already working to increase sustainable behaviors, such as Leave No Trace practices and ensuring the watershed protection rules are followed, in the canyons. This includes organizations such as the Cottonwood Canyons Foundations, Friends of Alta, the Alta Environmental Center, and the Forest Service. Finally, there are many businesses that are supported by tourists who come to see the beauty of the canyons in the summertime and the conservation of the natural beauty will help ensure that visitors will continue to come and support these businesses during their visits. Finally, while not a human beneficiary, this project will benefit the natural environment in these upper montane and alpine environments and help ensure that the conditions native plants and animals need to thrive are maintained.

Additionally, there are other less direct beneficiaries. Maintenance of the native ecosystems in the canyons helps ensure higher quality drinking water, as does adherence to the watershed protection rules. Thus, Salt Lake Public Utilities will benefit from a more educated tourist population, as will the consumers of the utilities’ treated water in terms of the prevention of increased costs to mitigate environmental degradation. Future generations will also benefit from this project because it will help ensure that these beautiful ecosystems continue to exist for them to experience.

While it is difficult to quantify the exact number of direct and indirect beneficiaries for this project, the numbers below can help provide context:

- 385 people live in the Town of Alta.
- 2.1 million people visit LCC annually (2).
- 352,000 drinking water customers are served by Salt Lake City Public Utilities (14).
- 2,000,000 people live along the Wasatch Front.

### *EXPECTED RESULTS | impact*

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There are several different types of results that we anticipate from this project. We expect that our social media campaign will support the ongoing environmental education efforts of stakeholders in LCC and specifically will broaden the reach of this messaging, which could be described by several quantifiable results: the total number of followers on the social media accounts that agree to share our content, the number of people reached per post (if partners track these statistics), and the number of shares and likes per post. We may also see growth in the reach of this content over the campaign such as via increased likes and shares as the campaign progresses or an increase in the number of people reached from the beginning posts to the final ones. We also anticipate that the project will reduce invasive species spread in Albion Basin, Snowbird, and other upper montane and alpine environments in LCC, Big Cottonwood Canyon, and Mill Creek Canyon. We also anticipate our project to have an impact on native species in terms of helping maintain healthy populations and diversity and prevent

degradation. Finally, we also expect to see a decrease in negative environmental practices and an increase in pro-environmental actions, such as use of the boot brushes, as well as adherence to the watershed protection and special use regulations among visitors to Albion Basin and other similar environments in these canyons.

If we focused our social media campaign only on Albion Basin there is the potential for an unintended consequence to arise. Specifically, if we did this, we could unintentionally draw more visitors and increase impacts on the basin due to the sheer magnitude of increased visitors to this one location. Therefore, to avoid this we will make the content relevant to all high elevation areas in LCC, Big Cottonwood Canyon, and Mill Creek Canyon rather than solely Albion Basin. Again, we seek neither to promote nor discourage visitation to these environments.

#### **IV. MANAGEMENT & IMPLEMENTATION**

##### *PROJECT GOVERNANCE | management and coordination mechanisms*

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While still in the early stages of our project, we will have two focus areas among our group members: **Social media content** (Sayma, Tiffanie, Amy, and Hannah) and **Boot brush project development** (Taylor, Jared, McKenna). The social media content team members will be working in pairs to create campaign post content, which will then be reviewed by our team as a whole. This will allow for individual creativity and peer editing while still maintaining group communication. This group will discuss the subject matter of the posts prior to working in pairs to avoid overlapping information. The content of each post that is created and finalized will be added to the “master document” which will be distributed to the social media accounts that wish to share it. Social media members will also be responsible for reaching out to photographers for images to be used in campaign posts. Each team member will be assigned specific partners, i.e. social media accounts and photographers, to maintain communication with throughout the development of the project. Each team member will be responsible for regularly checking the group Gmail account for inquiries or updates from partners, including after the semester finishes when the campaign launches. The team members will also be responsible for ensuring the content is posted i.e. checking partner’s accounts on scheduled post dates.

The boot brush project development team members will be responsible for all elements of this project, unless additional assistance from other team members is needed. This includes: project design; content development; supply purchasing and acquisition; and communication and coordination with project partners. These team members will also be responsible for applying for the SCIF grant and managing the funds provided from this and the class budget to carry out this project. If these responsibilities finish prior to the semester’s end, these team members will then rejoin with the rest of the group for the remainder of the project.

Finally, Amy Flowers will primarily be responsible for the creation and coordination of the informational sheet on invasives and/or native flowers for Snowbird. Other team members will assist if needed.

While our team is made up of highly qualified individuals, we do have some gaps in our collective skillset. We are hoping to utilize the U of U social media and marketing office to help us groom and develop our content so the information is accessible and aesthetically appealing. Our group does not have experience with professional photography, so we will also be seeking help from professionals that would like their photos shared. We will be reaching out to Snowbird’s marketing director, wildlife photographers on Instagram, Black Diamond, the Natural History Museum of Utah, and others. We are also hoping for collaboration with the following influencers to boost our posts: @katieboue, @savannahsomewhere, @outdooradvocacy, @briannamadia. For the boot brush project, we will design the informational content, but will need project partners to review and give approval, as well as assist with installation of the brushes and signs.

*DURATION & TIMELINE* | implementation steps

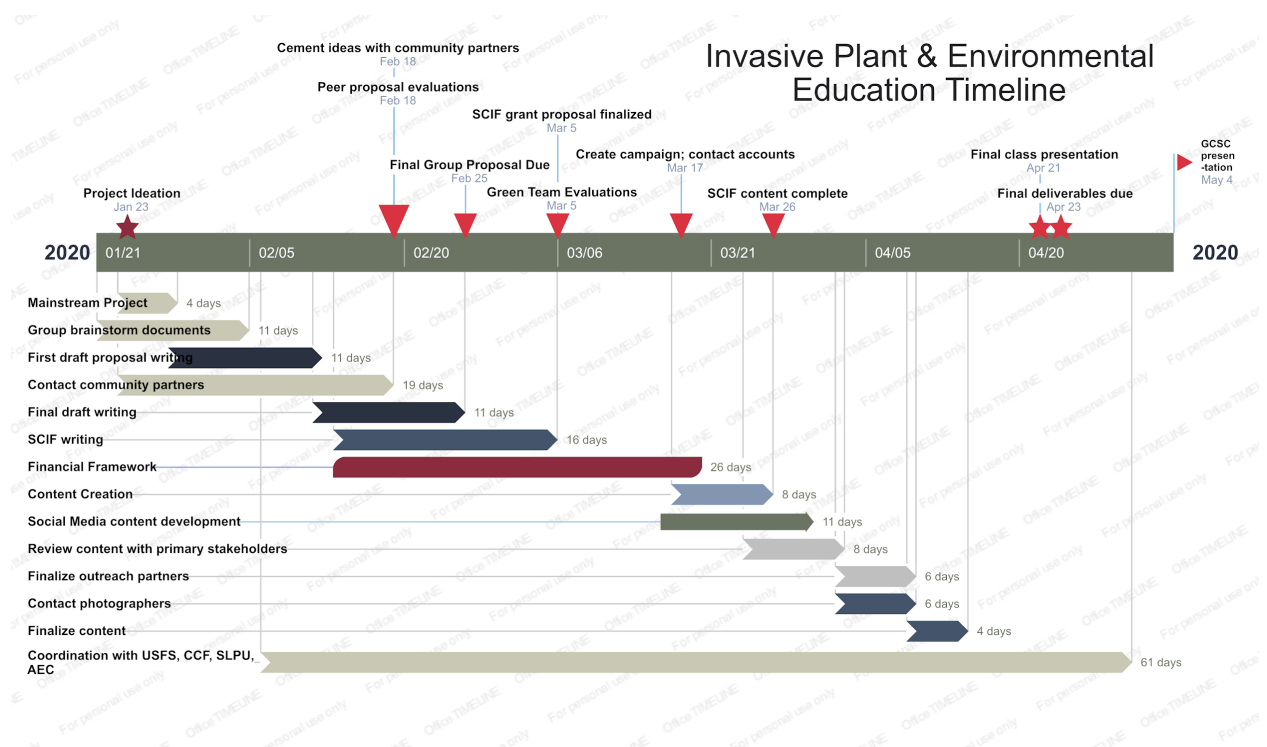


Figure 3. Gantt Chart

**V. MONITORING & EVALUATION**

*RISKS and ASSUMPTIONS*

Risks and Assumptions	Mitigating Measures
The SCIF grant application may be rejected.	Look for alternative sources of funding.
Lack of engagement/interest from stakeholders for social media campaign: If stakeholders do not want to be involved with the campaign it may slow momentum and reach.	Try to gather support from recognizable names, nonprofits, and social media accounts (we already have a few) and use that support as leverage for bigger stakeholders.
Competitive tension between social media accounts: Some accounts may not want to post similar/identical content as others.	Ask the account ahead of time if they would like unique imaging/watermarks/logos/content to promote their own name. We can help tailor posts to each entity involved.
Losing traction after the semester ends: the most critical time for addressing foot traffic and stewardship through our campaign will be late spring/summer. How do we keep the campaign going when it's most important?	Set up auto-emails to be sent throughout the summer (weekly/biweekly). Be sure the master document is finalized before the end of the semester so that all content is ready to be distributed. Clearly assign roles and responsibility prior to the semester's end.
Photos: Gathering photos to use for social media posts without running into photo credit issues.	Ask local photographers if they're interested in promoting their images through our campaign. Involve them in the process.
Partners can't donate labor for installation of signs and boot brushes.	Find a volunteer crew to help install the signs and boot brushes.
Boot brushes may be vandalized or stolen.	Ask project partners to consider some solutions for protecting boot brushes similar to the other facilities in the area.
Boot brush project may not be feasible in the timeframe of this course due to partners' constraints such as administrative procedures or time available for coordination or installation may be delayed due to the timing of snow melt.	Pass off the project in such a way that it is seamless for partners to implement after the class or the boot brush team helps partners to implement the project after the course ends.
Partners don't want the boot brushes after further discussion.	Ask if there is another more viable and helpful option instead of boot brushes that can be implemented.
Project partners want more boot brushes or interpretive signs.	The team evaluates feasibility in terms of timing and additional funding sources.

## *MONITORING AND SUSTAINABILITY*

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We plan to measure our progress on this project during the semester by aligning what we do with deadlines that we have created in the Gantt chart, as shown in the “Duration and Timeline” section of this proposal. Since our social media project campaign will not be executed until summer 2020, we are focusing our measures of progress primarily on our work during the semester and we have designed our social media campaign to be essentially complete by the end of the semester. After the campaign is carried out, we will be able to monitor our progress based on reach and growth numbers for the social media posts, to ensure that we are reaching a wide audience. Similar to the social media campaign, the progress of the boot brush project will be measured against our Gantt chart. Progress for this part of our project and the social media campaign could also be measured further in the future via changes to measures of native species presence and diversity and the spread and presence of invasive species if partners such as the Forest Service collect this data.

Our project will be sustainable in the long term due to our intensive preparation in creating social media content and planning its delivery. Our aim is to make the content delivery as effortless as possible for stakeholders to push out to ensure the success of our campaign and on our end, we have designed it to be more or less auto-launching with only minimal oversight and communication required after the semester for it to succeed. We will also use and/or create hashtags that will live on post-campaign and continue our efforts of educating visitors to Albion Basin and other natural areas. Project partners may also choose to reuse or build on the content and idea of this social media campaign in the future and will have the master document as a foundation for this. We are hopeful that our partners for the boot brush project, the Forest Service, Alta Environmental Center, and Snowbird, will be willing to provide assistance with boot brush maintenance, so that we will be able to ensure the sustainability of the boot brushes as well. Finally, we anticipate Snowbird will be happy to ensure the preservation and/or maintenance of the information sheet as the project is in direct response to a request from them.

## ***VI. BUDGET & FINANCIAL PLAN***

### *BUDGET | cost and expenses*

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Our budget for this project is as follows:

- \$1800 for 2 Interpretive Trail Signs
  - \$350 for the sign production (x2)
  - \$500 for the base (x2)
  - \$0 for installation (donated labor or volunteer work)
- \$500 for the boot brushes
  - \$25 each boot brush (x4)
  - \$100 each boot brush base / installation (x4)
- Snowbird Information Sheet:
  - \$100 for the design of the sheet
  - \$100 for printed materials

- \$25.88 for mileage reimbursement to Alta (1 trip)

**Total Budget: \$2425.88**

### *FINANCING PLAN |*

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\$1425.88 of the budget will come from our class fund, sponsored by a grant from the Alta Environmental Center. The remaining \$1000 will come from a small SCIF grant. We plan on contacting Emerson Andrews, SCIF manager, about applying for this grant.

## **VII. PROJECT DELIVERABLES**

### *DEFINITION |*

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In the most basic sense, a deliverable is a product that is produced as a result of a plan, project, or process. A project deliverable can take a variety of forms. They can be tangible, conceptual, quantifiable, and qualitative.

### *EXPECTATION |*

Our expected project deliverables are both tangible, conceptual, quantifiable, and qualitative. There are several tangible and quantifiable deliverables for this project. These include:

- Four boot brushes and two interpretive signs installed at Snowbird and Albion Basin.
- A completed SCIF grant and awarded funds for the boot brush project.
- The master document of social media post content.
- A reduction in the spread of invasive plant species.
- The number of partner social media accounts and email reminders set-up.
- The information sheet on invasive species for Snowbird.

We have two conceptual deliverables. The first is the idea of using a social media campaign to help educate visitors to the canyons in advance of the summer season. The second is spreading the idea of using boot brushes in the canyons; we see this project element as a proof of concept, that if found to be useful, can be further spread in the Wasatch Front. Our expected qualitative project deliverables include changes in behavior to visitors to LCC, Big Cottonwood Canyon, and Mill Creek Canyon, increased awareness and knowledge for visitors to the canyons, and through this the maintenance of healthy and thriving native ecosystems in the canyons.

### *GCSC EXECUTIVE MEETING & GCSC WEB CONTENT |*

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Presentation at GCSC Executive Committee Meeting: Tiffanie, Sayma, and Amy will be available to present at the meeting on 5/4/2020.

Web Content: Jared, Hannah, McKenna, and Taylor will prepare the content for the GCSC webpage. Hannah will be responsible for submitting the content to Laurie Mecham.

## VIII. SUPPLEMENTAL INFORMATION: PROJECT DATA, CHARTS, AND INFOGRAPHICS

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### *Definitions & Abbreviations*

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LCC: Little Cottonwood Canyon

Invasive species: A species not native to the area known to cause harm.