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Climbing Management on National Forests

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CLIMBING MANAGEMENT ON NATIONAL FORESTS

By

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Introduction

The following handbook and accompanying Story Maps are designed to assist land managers considering instituting Climbing Management initiatives on National Forest land. Climbing Management is currently a dynamic environment with clear directives lacking, legal interpretation changing, contexts and strategies varying, and the sport of climbing ever evolving as it grows in popularity.

A lot of this work was inspired by the author's involvement in the development of a Climbing Management Plan on the Bitterroot National Forest, but it was also informed by the author's experience working six seasons for the Forest Service as well as education at the University of Montana.

Using the Handbook

This handbook has been created with the goal of providing land managers a crash course in climbing, climbing management, and tools to assist in any potential processes determined appropriate at the local land unit level.

Conceptually, the handbook has three main parts:

- Part One: Theoretical Framework ("Managing the Commons")
- Part Two: Knowledge of Climbing Context ("Land Managers" and "Climbing")
- Part Three: Process Design Considerations ("Process Design" and "Doing What We Say")

Supplementary material is included after these three main parts and includes examples from existing climbing management plans, recommended resources for consideration, a glossary of climbing terms, and maps displaying Forest Service units that have developed or are currently developing climbing management plans.

Much of the information provided in this handbook is provided in a summarized form within the accompanying Story Maps ("Climbing Management on National Forests" and "Process Design"). The Story Maps are intended to function as both "executive reports" and sources to be used in processes (internal, external) to develop and communicate Climbing Management Plans.

Part One: Theoretical Framework

This part of the handbook provides a theoretical framework for considering sustainable management of the commons. Given the increasingly collaborative nature of public lands management, this part explains how Elinor Ostrom's work on common pool resources (CPRs) can provide insights into complementary and cooperative opportunities for involving recreational communities in the management of public lands.

Managing the Commons: A theoretical framework for sustainable recreation in the 21st century

Public lands agencies in the United States have been experiencing steady increases in the numbers of people recreating, and this is certainly true for the sport of rock climbing. The National Park Service (NPS) is tasked with preservation, and the Forest Service (USFS) is tasked with managing for multiple use. Managing for multiple use implies that some forms of development are to be expected. In order for this development to be sustainable it is important to acknowledge the definitions of sustainability and sustainable development. The 1987 Brundtland Commission report titled *Our Common Future* defines sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs"[1]. The EPA provides a definition of sustainability tailored for policy: "the satisfaction of basic economic, social, and security needs now and in the future without undermining the natural resource base and environmental quality on which life depends"[2]. The influence of these two definitions reverberates in the USFS definition of sustainable recreation provided in the 2016 Planning Rule: "The set of recreation settings and opportunities on the National Forest System that is ecologically, economically, and socially sustainable for present and future generations"[3]. A practical measure of sustainability is the number of individuals doing an activity multiplied by the quality/quantity of the impact per individual. While the number of climbers/recreationists is definitely on the rise, the impacts are not necessarily increasing per person or overall. To achieve sustainable climbing/recreation, the number of climbers/recreationists in an area could be addressed (e.g. limiting group size, creating limited entry areas and instituting a permit system) and/or the impacts from the activity (e.g. enforcing regulations, educating about best practices that include Leave No Trace principles, and building

[1] World Commission on Environmental Development (1987) *Our Common Future*
[2] Tonto National Forest "Sustainable Recreation FAQs"
[3] Ibid.

infrastructure such as approach trails or belay boxes to address erosion on steep slopes in the case of climbing). Managing for sustainable recreation entails balancing the tension between providing recreational opportunities and managing ecological and cultural impacts.

Public land managers are tasked with administering large tracts of the commons for the common good. The administration of public lands has been slowly opening up to greater amounts of public participation in planning, decision-making, and implementation since the passing of legislation such as NEPA in 1969. Forest Service initiatives such as Shared Stewardship and the formation of collaborative groups promote the public's involvement on public lands, and in some instances have volunteers and partners doing the work that land managers no longer have the capacity to complete as regularly as in the past. The reasons for this shift are political, social, legal, and practical. In order for land managers to effectively lead and administer the commons, it is important to recognize Elinor Ostrom's contributions to commons theory and critically assess Garrett Hardin's theory of the tragedy of the commons that continues to function as a dominant narrative. Given the current trajectory of the administration of public lands, I argue that Ostrom's conceptual framework is more appropriate for the sustainable management of the commons than Hardin's theory of "the tragedy of the commons" which is outdated and disadvantageous to collaborative efforts.

Garrett Hardin's "The Tragedy of the Commons" was published in *Science* in 1968 and became so widely read and cited that the assertion "freedom in a commons brings ruin to all"[4] – and therefore should be privatized or regulated by central authorities – began to function as "conventional wisdom"[5]. There have been numerous advances in commons scholarship since that have questioned the overall applicability of Hardin's assertions. Despite Hardin's account being challenged by academics from many disciplines over the decades since its publication, Rob Nixon notes that the "'the tragedy of the commons' continues to exert [tenacious public power]"[6]. Commons management using Hardin's framework is characterized by the overly simplistic solutions of either top-down coercive regulations or privatization. Hardin's thinking is based on a pessimistic view of human nature where individuals maximize their own gains at the expense of everyone else. Reality is more complex and requires a more nuanced approach.

[4] Hardin, 1968, 1244
[5] Araral, 2014, 18-19
[6] Nixon, 2012, 598 [reordered from original]

Elinor Ostrom's approach refuses simple solutions and provides us with a framework for addressing sustainability that acknowledges the complexity of commons management. Ostrom spent years studying how Common Pool Resources (CPRs) can and have been managed sustainably. Rather than starting with an abstract theory, Ostrom began by looking at real life practices, an approach based on what has since become known as Ostrom's Law: "whatever works in practice can work in theory"[7]. Looking at case studies from around the world, including Switzerland, Kenya, Guatemala, Los Angeles, among others, Ostrom was able to show that Hardin's tragedy of the commons was not as universally applicable or necessarily inexorable as portrayed in theory. Ostrom identified alternative solutions for collective action problems besides privatization or coercive top-down regulation.

Examining case studies involving long-enduring CPR institutions, Ostrom identified eight design principles to account for their success. They are:

1.Clearly defined boundaries

2. Congruence between appropriation and provision rules and local conditions

3. Collective-choice arrangements

4. Monitoring

5. Graduated sanctions

6. Conflict-resolution mechanisms

7. Minimal recognition of rights to organize

8. Nested enterprises (for CPRs that are parts of larger systems)[8]

These eight design principles can help guide land managers as they develop partnerships for sustainable recreation management on public lands. David Paul Carter provides some excellent examples of how complementary relationships between the climbing community and land managers combine the features of monitoring, graduated sanctions, conflict-resolution mechanisms, and nested enterprises to allow for a robust system of institutional enforcement that maximizes access and minimizes impacts[9].

While Hardin's model is problematic and has been challenged on many fronts, the main reason to reject the narrative of the "tragedy of the commons" and adopt Ostrom's framework for

[7] Nijhuis, 2021
[8] Ostrom, 1990, 90
[9] Carter, 2019

considering climbing management is that the climbing community exists and has a long history of self-policing, resolving practical and theoretical conflicts, and adapting/evolving norms to changing circumstances. Hardin's "tragedy of the commons" narrative frames individual action without considering how collective action might trump individual selfishness. As public lands agencies move to greater public participation in decision-making and administration, Hardin's prescription for coercive, top-down regulation will be counterproductive to engaging the communities that have a stake in the sustainable management of their common-pool resources.

Another fundamental reason to consider Ostrom's framework instead of Hardin's is the scale at which climbing and its management occur. While the sport is popular worldwide, the communities and resource concerns are site specific. Ostrom's approach works best at the local levels and can be characterized as a bottom-up approach to collective action. Hardin's framework deals with commons management at a large scale – he considers the global commons of population. Ostrom's framework is preferable because commons management also occurs at much smaller scales where Hardin's inexorable tragedy has been avoided through successful collective action that did not require privatization nor state regulation. While it remains to be seen whether the global community can be organized to deal with collective action problems associated with large-scale commons (e.g. climate change, biodiversity loss), Ostrom's approach provides evidence that local communities are capable of successfully managing common-pool resources at smaller scales. While national directives provide overall guidance, climbing management must be tailored to the local context where the geology and climbing community will determine what is possible and acceptable.

While public lands agencies' climbing management initiatives can seem on their face to be top-down regulation, they will function best to the degree that they incorporate the pre-existing bottom-up management of the climbing commons by the climbing community. Land managers that fail to acknowledge the pre-existing management of the climbing community risk alienating the climbing community and thereby hinder collaborative and Shared Stewardship opportunities that would create the nested layers of authority that Ostrom identified as a feature of successful commons management[10].

Rather than seeing climbing management as something new, the recreation manager should realize that they are stepping into a unique recreation activity that has a considerable

[10] Ostrom, 1990, 90

history of self-management. The climbing community has been managing itself through the establishment of norms that have evolved along with the sport. From its origins in mountaineering the climbing community has long embodied the institutional design principles for self-organizing management that Ostrom identified. A good example of the monitoring and norm development principles is Yvon Chouinard's recognition that the use of pitons was damaging the rock, which motivated him to design and sell "chocks" as an alternative to pitons, and argue in his 1972 catalog for a "clean climbing" ethic[11]. Royal Robbins also helped influence a "leave no trace" ethic in climbing and advocated for minimal use of fixed anchors[12]. When conflict arose within the climbing community during the period known as the "Bolt Wars", the climbing community talked through the controversy and more or less resolved the issues at the local levels resulting in some of the variation of climbing norms seen in specific locations (citation needed) with national organizations like the Access Fund communicating general best practices for route development[13]. There are countless other examples providing evidence that the climbing community manages the climbing commons using all of Ostrom's design principles. Acknowledging this management is important for establishing trust, working relationships, and legitimacy in planning, decision-making, and implementation of Climbing Management Plans. Regarding the implementation in particular, it is advantageous to note the beneficial role that social sanctioning within the climbing community can play to complement and reinforce regulations that have been internalized as part of the community's norms.

Land managers should not assume their climbing commons are "unmanaged" but should instead learn to what extent the climbing community is already managing the commons and build from there. This is the main difference between Hardin's and Ostrom's approach. Hardin failed to clarify that the commons he was writing about was "unmanaged" in his 1968 article because it would have limited the explanatory power of his theory. On the other hand, Ostrom's approach involves researching site-specific management in practice and embracing the complexity inherent in social-ecological systems. While the climbing community may not be capable of managing all aspects of the commons by themselves, this does not mean that land managers need to take on all aspects of climbing management. Climbing management will work best when the

[11] Linderman, 2011
[12] Jones and Hollenhorst, 2002, 16
[13] Haas, J. "Best Practices for Bolt Placement"

climbing community and land managers work together in complementary roles that utilize the nested layers of authority mentioned previously. Rather than ignore or reject the institutions created by the climbing community, the land manager can benefit by "examining how these institutions may help them acquire information, reduce monitoring and enforcement costs, and equitably allocate appropriation rights and provision duties"[14]. The climbing community can benefit from the technical, cultural, and scientific expertise of land managers to sustainably manage all the resources associated with the cliff environments as well as graduated sanctions for individual climbers who choose not to follow the climbing community's norms and put the climbing commons at risk of needlessly onerous regulation.

For most of the sport's history, climbers have headed off the need for programmatic regulation by developing climbing norms and enforcing them through social sanctioning. However, the steadily increasing number of people engaging in rock climbing may make it more difficult for the communities to engage all members in a meaningful way and internally handle conflicts effectively. The growing number of climbers has made the sport more visible and, in some instances, has increased the impacts on certain resources either through sheer numbers of users or through individuals not abiding by climbing community norms. The recent proliferation of Local Climbing Organizations (LCOs) throughout the United States are a positive trend addressing these challenges. LCOs in partnership with land managers can provide many of the features of successful systems identified by Ostrom including "clear boundaries (the 'community' doing the managing must be well-defined); reliable monitoring of the shared resource; a reasonable balance of costs and benefits for participants; a predictable process for the fast and fair resolution of conflicts; an escalating series of punishments for cheaters; and good relationships between the community and other layers of authority"[15]. Good relationships with LCOs allow land managers to access project funding through grants and create Shared Stewardship opportunities such as monitoring, trail maintenance, erosion mitigation, graffiti removal, bolt replacement, sign installation, etc.[16][17][18].

[14] Ostrom, 1990, 216
[15] Nijhuis, 2021
[16] https://www.saltlakeclimbers.org/news/2018/11/25/gate-buttress-project-phase-one-completed
[17] https://carolinaclimbers.org/stewardship/trailwork.html
[18] https://washingtonclimbers.org/index.php/stewardship-events/

With increased numbers and visibility, the climbing community is dealing with increasing controversy from within and outside the community. The philosopher Richard Rorty wrote that "morality and law…begin when controversy arises. We invent both when we can no longer just do what comes naturally, when routine is no longer good enough, when habit and custom no longer suffice"[19]. The land manager should be careful to make the distinction between controversies based on actual impacts and controversies that result from moral panic. Moral panic is defined as "the false or exaggerated perception that some cultural behaviour or group of people is dangerously deviant and poses a threat to society's values and interest"[20]. Both the climbing community and land managers can benefit from engaging in collaborative dialogue with each other and the general public. Richard Rorty writes that "moral progress" is "a matter of increasing *sensitivity*, increasing responsiveness to the needs of a larger and larger variety of people and things"[21]. For pragmatists like Rorty, "moral progress" is a "matter of being able to respond to the needs of ever more inclusive groups of people"[22]. The Forest Service is currently pursuing this moral progress by encouraging public participation through Shared Stewardship and collaborative models. One of the most difficult challenges for the land manager is being able to respond to the needs and desires of everyone, especially when they appear to be in conflict. The climbing community is clearly showing signs that moral progress is happening through their visible Justice, Equity, Diversity, and Inclusion (JEDI) initiatives (e.g. NativesOutdoors, Black Diamond's film "Soul Deep", Patagonia's film "they/them", etc.). There are also many positive examples of LCOs already working with land managers to assist sustainable recreation management. However, climbing communities and land managers pursuing moral progress will also have to contend with moral panic as fears of climbing impacts may create controversies despite the absence of actual impacts. Land managers can help the climbing communities deal with controversies by focusing on moral progress and avoiding moral panic.

While the climbing community has been able to administer certain aspects of the climbing commons, it will be difficult for the climbing community to manage some resources without technical, scientific, and cultural knowledge. For instance, the sensitive nature of cultural resource knowledge will require working relationships based on trust to be established in order to

[19] Rorty, 2021, 128
[20] https://www.oxfordreference.com/view/10.1093/oi/authority.20110803100208829
[21] Rorty, 2021, 135
[22] Ibid.

protect cultural resources and protect sensitive information about site locations. Whether the climbing community can create those relationships directly with the tribes or will use the Forest Service staff as go-between will be dependent on the particular context. There could also be site-specific natural resources that require expertise, such as identifying and managing endangered or threatened flora or fauna occurring on or around cliff environments. In short, the local climbing community may be managing certain aspects of the sport's potential impacts, but other aspects will require the assistance of land managers and various experts. Ostrom's model specifically addresses this issue with the idea of nested scales of management, and this is one of the main strengths of the bottom-up approach. Identifying and clearly communicating the resource concerns and potential mitigation strategies will be a crucial part of the land manager's role.

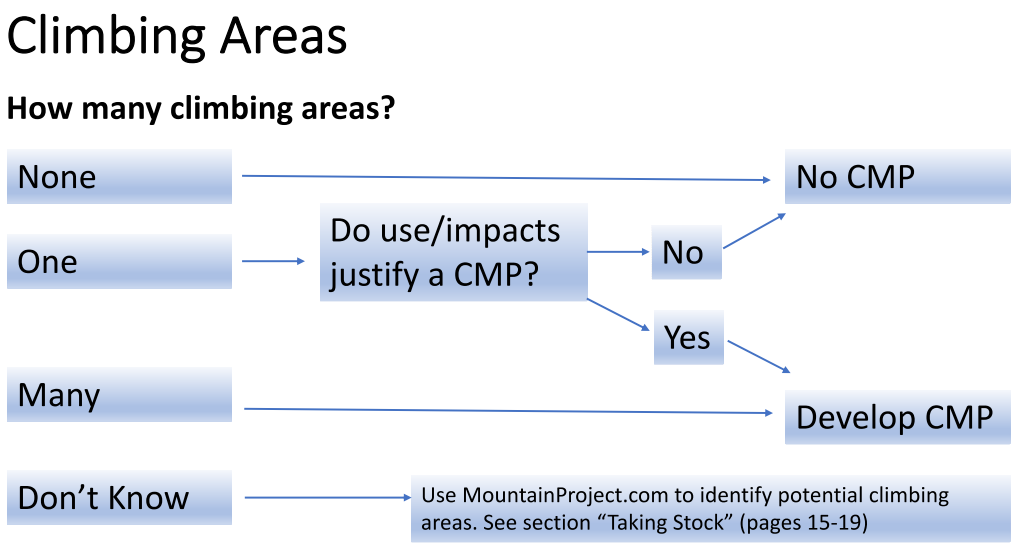
Achieving sustainable recreation and managing the commons is a difficult task because it is complex, dynamic, and iterative. The simplicity of Garrett Hardin's theory of the "tragedy of the commons" is appealing and is partially responsible for its lasting impact, but it should be rejected in favor of the nuanced approach of Elinor Ostrom which better addresses the complexity of social-ecological systems in real life. The complexity of Elinor Ostrom's theory is challenging but it should be embraced because it deals with the messy reality of managing commons. The Ostrom model favors the difficult tasks of relationship building, collaboration, adaptive management, and collective action. Her model is in line with the direction that public lands agencies are currently heading (i.e. greater public participation/involvement). While managing the rapid growth of recreation generally and rock climbing particularly can seem overwhelming, moral progress will be achieved by working together to address issues as they arise rather than resorting to unnecessary regulations based on fear and moral panic.

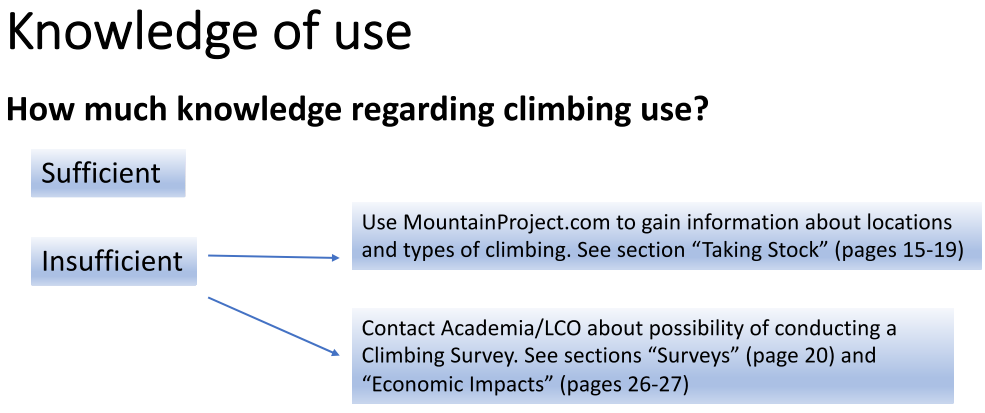
Part Two: Gathering Knowledge of the Climbing Context

This part of the handbook is designed to help land managers become informed about rock climbing generally and their local climbing context particularly.

Decision Guide

The Decision Guide for Part Two is a starting place for land managers with little to no knowledge about climbing in their area. The guide asks a series of basic questions and attempts to provide suggestions for land managers that will hopefully be appropriate for their local climbing context. The guide also directs land managers to particular areas of the handbook that may help answer the question or change the initial answer.





Decision Guide (continued)

Knowledge of impacts

How much knowledge regarding climbing impacts?

- Sufficient
- Insufficient → Assemble an Interdisciplinary Team (IDT) and Conduct Site Visits/Assessments. See sections "Site Visit/Assessment" and "Baselines" (pages 21-22)

Local Climbing Organization

Does a Local Climbing Organization exist in your area?

- Yes → Reach out to the LCO and begin dialogue.
- No → Contact the Access Fund. They can help the land manager connect with local climbers and potentially help create an LCO.
- Don't Know → Contact the Access Fund. They will know if there is an LCO. See section "Making Connections – National and Local Climbing Organizations" (pages 19-20)

Relationships

Do working relationships currently exist between land manager and LCO?

- Yes → Consider a bounded process with a climbing working group to assist with CMP development. see section "Public Participation Strategy" (pages 41-44)
- No → Develop relationships prior to process
- No → Design process to build relationships

Land Managers

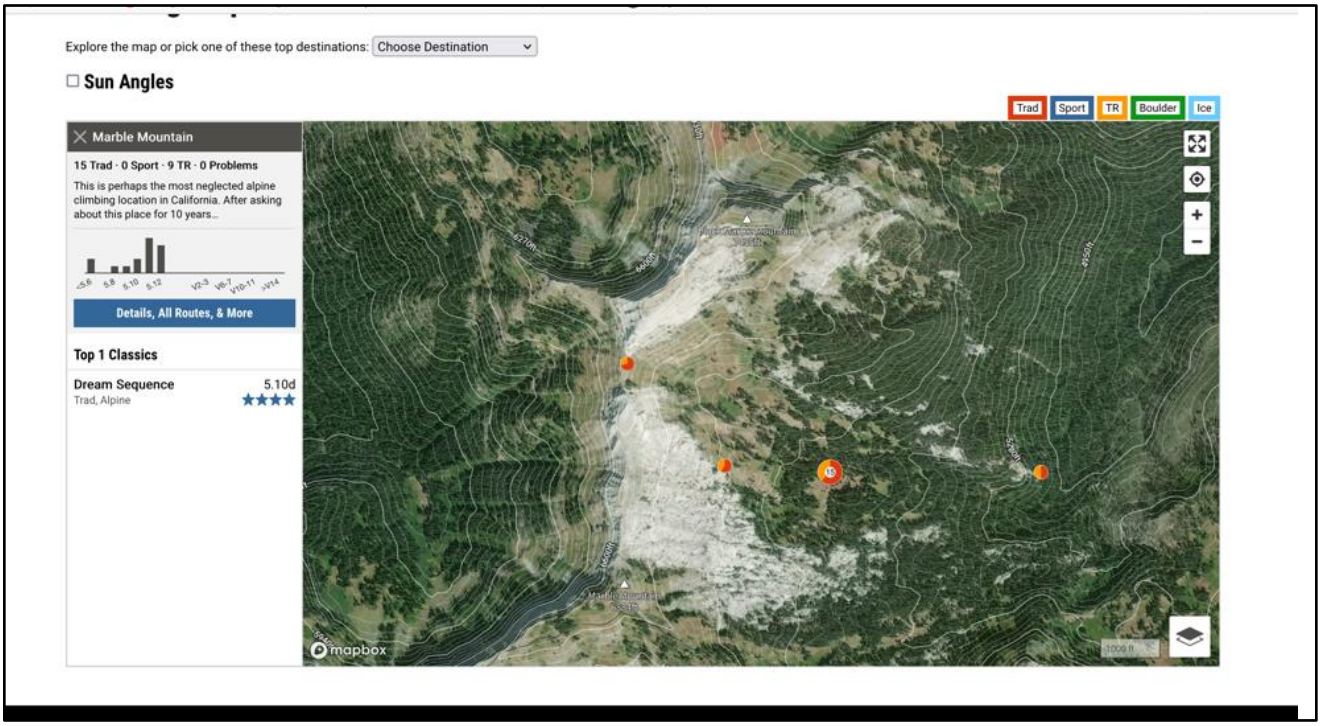
While the Forest Service's Draft Directives on Climbing on NFS lands are currently going through a review process, this handbook is written with the assumption that the directive instructing land managers to develop Climbing Management Plans (CMPs) for all land units that have one or more climbing areas will be included in the final directives. While many land managers may have to take stock to simply determine whether they indeed have this level of use on their managing unit, there are others that are not only aware of their climbing recreation use levels but also currently manage this use already without a formal CMP. This handbook and Story Maps have been written with the widely varying contexts for recreational climbing in mind and will hopefully have something to offer for every situation. As a result, not all of what is included will be applicable or appropriate for every context.

Taking Stock – Using Mountain Project

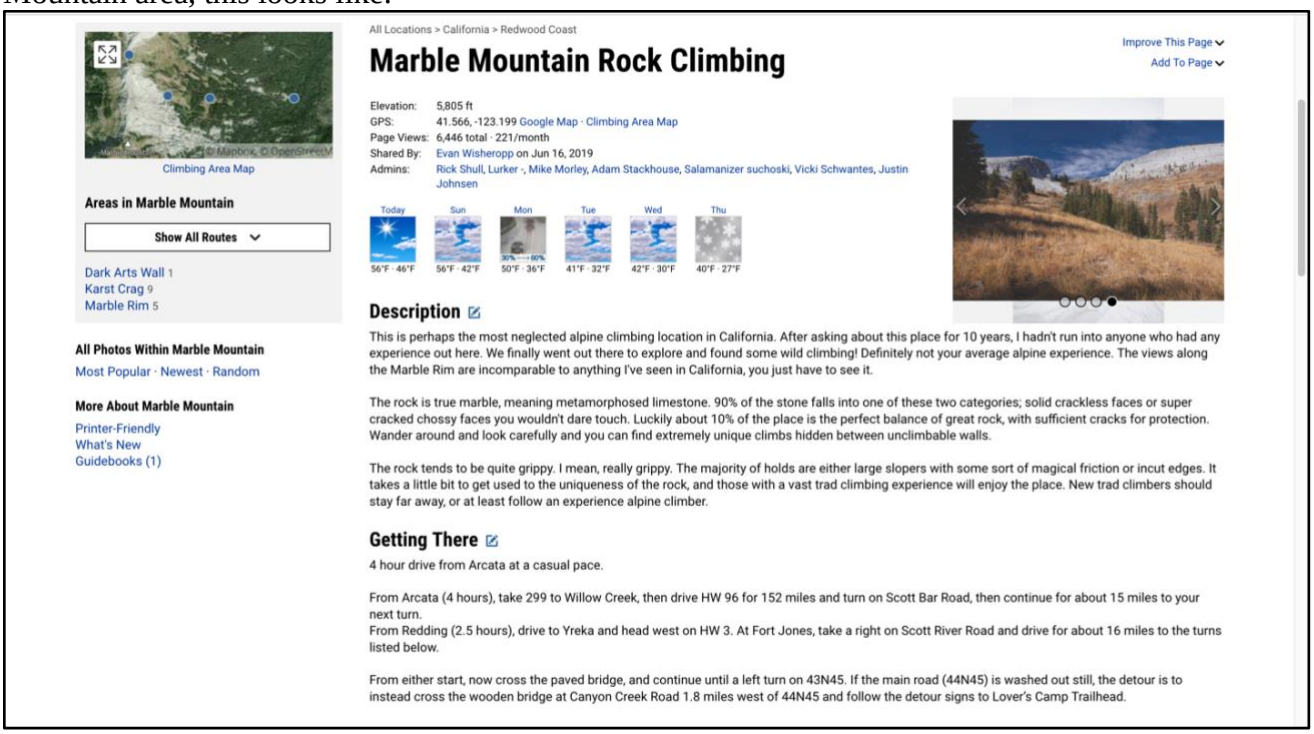
Determining the level of climbing use can be difficult for land managers. A good place to start for land managers that don't know if they have climbing use or aren't sure about whether the climbing use constitutes a "climbing area" is the Mountain Project website (https://www.mountainproject.com). Mountain Project functions in a **wiki format** with climbers posting information on climbing routes. As such, the quality of data available will vary depending on the user reporting on the route/area and the local climbing ethic around putting local knowledge on the internet. Depending on the climbing community's local norms surrounding the reporting of routes, this resource may be more or less useful in providing a full inventory of what exists on the local land unit. Nevertheless, the "Climbing Map" will likely be a good starting place for most managers to determine location, number and types of climbing routes, the abundance of routes in a given area, relative levels of use, and the number of climbers engaged in posting information on the routes/areas. There is also a forum on the website that allows managers to see what climbers are saying about the local climbing resources.

The next few pages provide a quick tutorial of the Mountain Project website and will make more sense if the land manager opens up the website on their computer to investigate their own land unit.

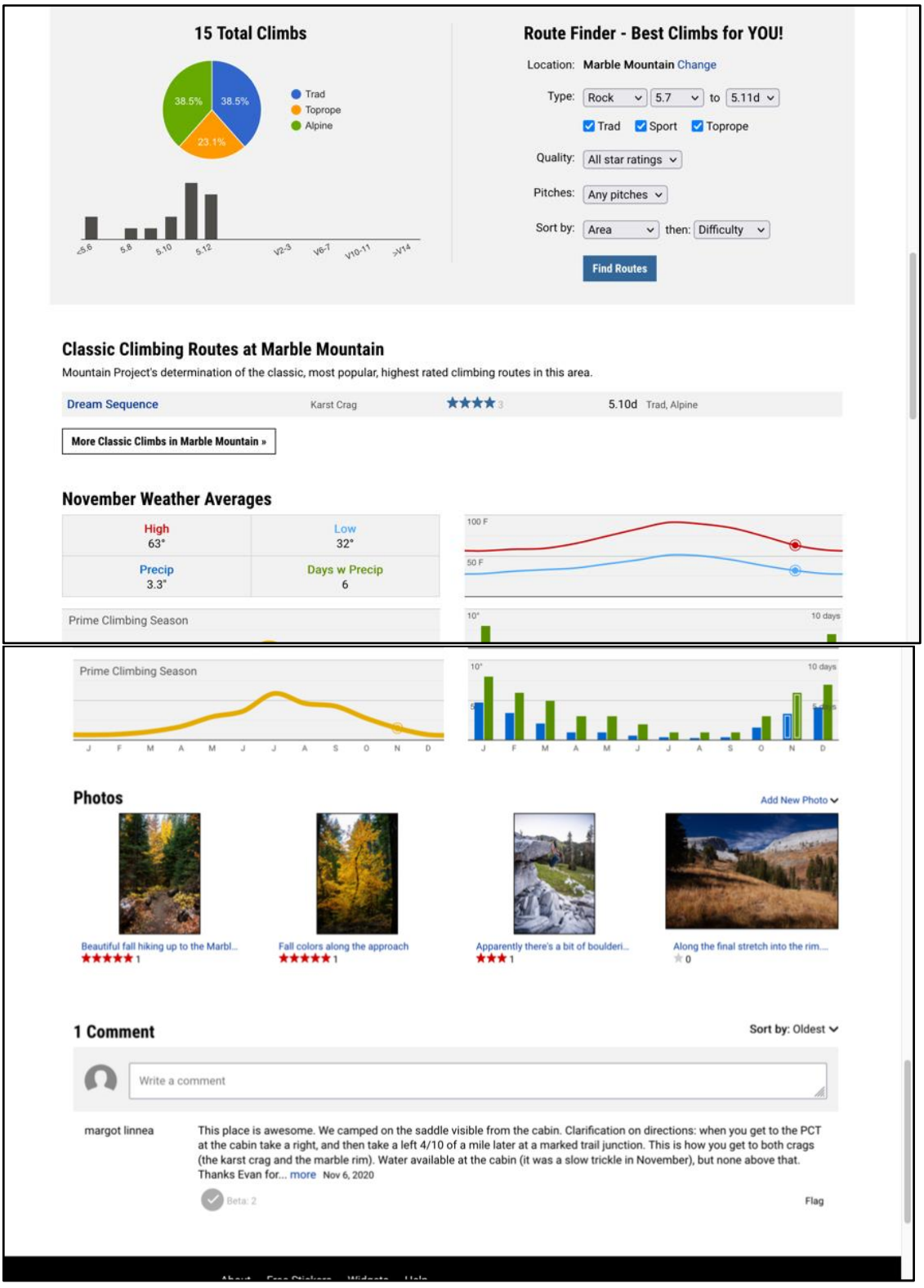
In this example, the Marble Mountain area on the Klamath National Forest in Northern California shows 15 trad routes that seem to be lightly used given the lack of engagement on the website and the remoteness of this alpine area:



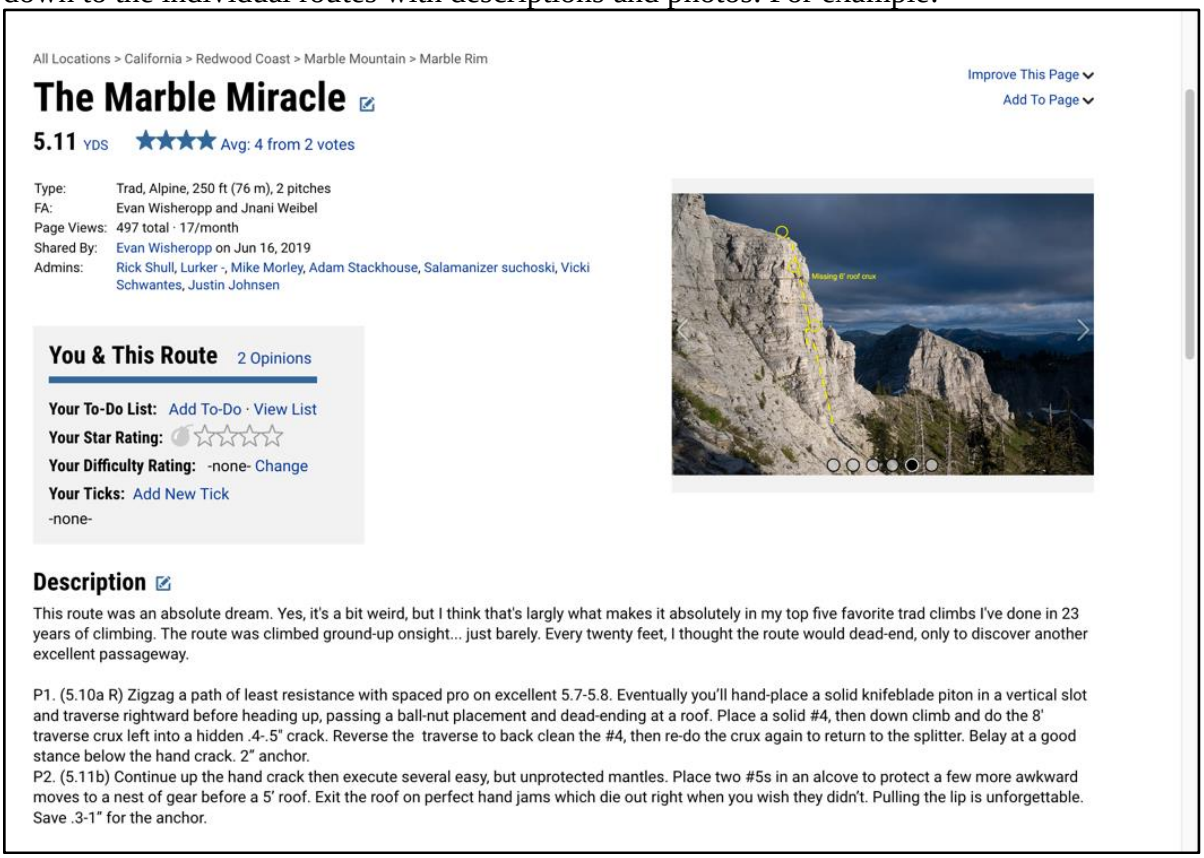
Clicking on the "**Details, All Routes, & More**" button will give the land manager more information on the particular details of the climbing happening in the given area. For the Marble Mountain area, this looks like:

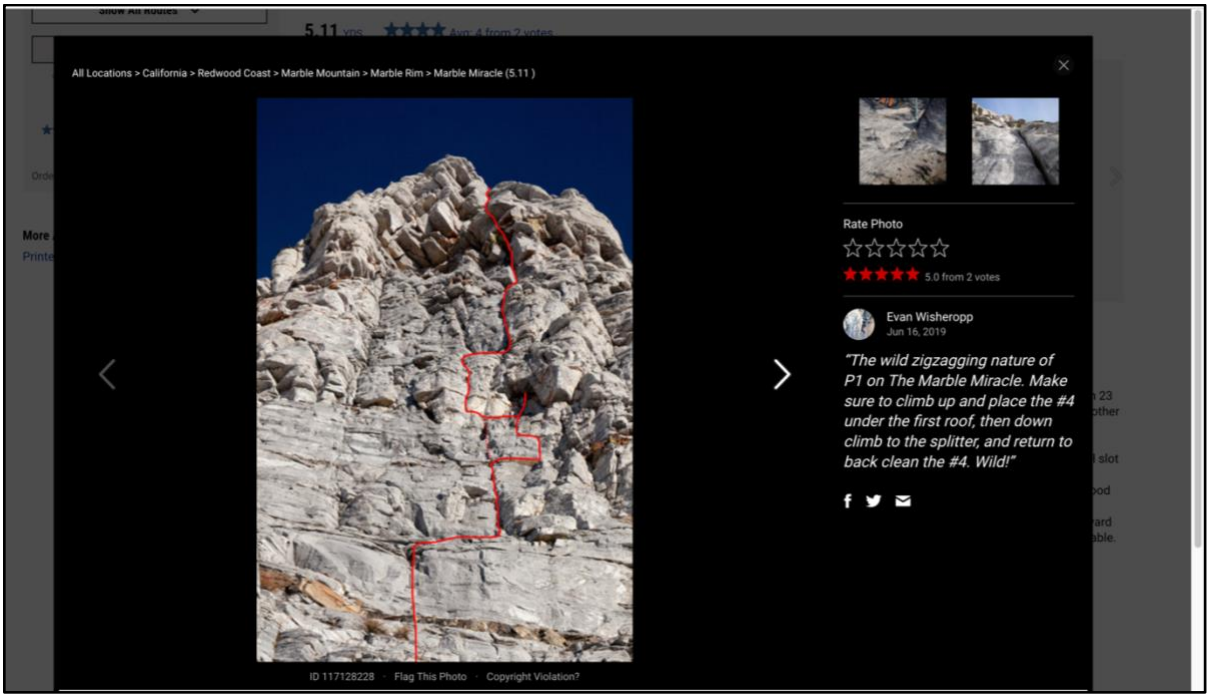


Scrolling down in this section, the land manager can find useful information such as types of climbing, prime climbing season, photos, and comments related to the particular area:



Going back to the top left of the page, users will find links to the particular areas and can drill down to the individual routes with descriptions and photos. For example:





If the land manager is familiar with the individual posting the information ("**Shared by**" or "**Admins**"), then conversations can be had directly regarding partnership opportunities, questions, and/or concerns. If the land manager is unfamiliar with the individual, Mountain Project provides a tool that allows the user to see the data points associated with the climber and also provides an opportunity to contact the individual (if logged into the Mountain Project website). This could be a good starting point for land managers trying to make connections with climbers that frequently visit the local land unit. Depending on the level of knowledge the land manager has about the local climbing areas, these connections can be crucial and provide opportunities for engaging with the climbing community associated with the climbing resources being managed.

The information on Mountain Project will also give the land manager an idea about the proper scale for their CMP. The existing CMPs on Forest Service land are for specific areas where climbing use is concentrated. The Bighorn National Forest is likewise developing a CMP for Ten Sleep Canyon. In contrast, the Bitterroot National Forest is currently developing a forest-wide CMP which will be the first of its kind for the Forest Service. If climbing use is dispersed widely over a number of areas, it may make sense to address this use at the forest scale. However, the implementation of such a large-scale plan will be challenging. Starting with a manageable area where managers can effectively implement a plan and demonstrate competent management may be preferable, especially when establishing climber "buy-in" may be challenging. Lessons can be learned, competency proven, working relationships established, and trust earned so that additional processes for other areas and larger scales will be more effective.

What constitutes a climbing "area" is open to interpretation. In the case of the Marble Mountain example, the routes are all trad climbing so they likely do not have any fixed anchors for protection and the use appears to be light. It is likely that the intent of the directives is to identify heavily used climbing areas. How much use, impact, and/or development has to occur before an area is considered a "climbing area" is debatable. In the example of the Marble Mountain area, the author would hesitate to label it a "climbing area" in need of management based on the information on Mountain Project, particularly given that the climbing listed is trad. A site visit would allow the manager to assess the level of use and identify impacts that need to be addressed.

Making Connections – National and Local Climbing Organizations

If one exists in the area, perhaps the most important connection to make is with the Local Climbing Organization (LCO). Reaching out to the LCO and developing relationships with the leadership on the front end will make climbing management initiatives more effective. LCOs carry a lot of weight in local climbing communities and are often connected with climbing organizations at the national level. The Access Fund is a 501(c)3 non-profit – the largest U.S. climbing organization with over 15,000 members and affiliates – and works with more than 130 LCOs across the country, so visiting their website is a good starting place for identifying and contacting LCOs (https://www.accessfund.org/meet-the-access-fund/our-network/local-climbing-organizations). The Access Fund and its affiliated LCOs have an MOU with the USFS

National Headquarters[23]. The Access Fund provides many resources to affiliated LCOs. For example, the Access Fund has a stewardship program that provides funding and expertise for projects such as erosion control and climber education. Since The Access Fund's inception in 1991, they have funded over $1.3 million to local organizations, climbers, and public agencies. Their website even contains a portal that allows managers to design customized educational signage: https://www.accessfund.org/learn/for-land-managers/education-signage-1.

Stewardship Projects with LCOs
There are many examples of cooperative efforts between the Access Fund, LCOs, and the Forest Service to take on extensive stewardship projects in popular climbing destinations. Below are three notable examples (with links to more information):

- Liberty Bell, Washington Pass, Okanogan-Wenatchee National Forest
  - "Climbers Restore Washington's Liberty Bell Spires"
- Lover's Leap, Eldorado National Forest
  - "Access Fund Conservation Team Tackles Dire Issues at Lover's Leap"
- Rumney Mountain, White Mountain National Forest
  - "Restore Rumney"

If there is no LCO in the area, reaching out to local, respected climbers is recommended. However, it is important to note that local norms are dynamic and may be contested. Performing due diligence and identifying intragroup conflict within the climbing community is particularly important when dealing with individual climbers rather than an LCO. The formation of an LCO might be preferable and could be facilitated with the help of the Access Fund.

Identifying and including stakeholders outside the climbing community that will likely be affected by the CMP should also be a priority.

USFS LCO Spotlighted Success – Uinta National Forest and Salt Lake Climbers Alliance

The Salt Lake Climbers Alliance is a model for LCOs working with the USFS to manage the "climbing- commons," through stewardship projects and anchor replacement. The SLCA is working with the Forest Service on a multi-year, extensive stewardship project, Grit Mill Project in Little Cottonwood Canyon, as well as other large projects. Here is video of a stewardship project between the Access Fund, Salt Lake Climbers Alliance (SLCA) and the Uinta National Forest: Ruth Lake Adopt a Crag.

"The partnership with the Salt Lake Climbers Alliance has been outstanding. They have been very patient with our processes and extremely cooperative in helping make the Grit Mill trail system and climbing area successful. Construction of the trails could not have happened without the time and energy devoted by the Salt Lake Climbers Alliance and all the many volunteers who value climbing and protecting these special areas." Dave Whittekiend, Forest Supervisor, Uinta-Wasatch-Cache National Forest *(Summers, 2016)*

[23] USDA Forest Service, 2020

Surveys

Climber surveys can help provide a picture of current use and trends in the local area. In advance of climbing management initiatives, LCOs, universities, and national organizations, such as the Access Fund or American Alpine Club, can be helpful resources. There are many examples of these groups conducting surveys to help inform climbing management processes. The University of Montana and the Western Montana Climbers Coalition (WMTCC) conducted a climbing survey at the start of the Bitterroot National Forest's initiative to develop a CMP[24]. The Mid Atlantic Climbers conducted a survey to assist the Monongahela National Forest's efforts to develop a CMP for the Spruce Knob-Seneca Rocks National Recreation Area[25]. Surveys can also be a part of the formal process, such as the case on the Uinta National Forest:

> **"During the winter of 2017 the Access Fund, a 501(c)(3) organization whose mission keeps climbing areas open to the public and works to conserve the environment adjacent to climbing areas, assisted with the public scoping for the Logan Canyon CMP. The Access Fund interviewed local climbers about their desired conditions at climbing areas. The returned scoping document suggested that the climbing community for the canyon included a large number of visitors from other areas and a smaller group of local climbers. The scoping participants felt that climbing activity is increasing, and that an inventory of climbing areas would benefit both the public and the Logan Ranger District. Also, the participants would like more information on the endemic species of concern at the climbing sites and suggestions on how to avoid irreparable damage to the populations. The opinions of the participants were considered in the creation of this CMP."[26]**

Site Visit/Assessment

Once the land manager has a general idea of where some climbing areas might be, it is important to put boots on the ground and eyes on the sites. If the land manager is already familiar with an area, joint site visits with climbers are an effective way to develop relationships, communicating and understanding different perspectives on recreation opportunities, impacts, and mitigation strategies.

As mentioned in the Access Fund's "Climbing Management – A Guide to Climbing Issues and the Development of a Climbing Management Plan", the site assessment involves six zones:

1. The approach to the climb
2. The staging area
3. The climb
4. The summit
5. The descent
6. The camping or bivouac area[27]

It may be in the land managers best interest to conduct a site assessment with an Interdisciplinary Team (IDT) prior to a joint site visit, unless the land manager is already familiar with the area, the resources, and the impacts that need to be addressed. Once a full assessment of all six zones has been completed, a joint site visit with climbers may help the land manager to develop a

[24] Western Montana Climbers Coalition, 2021
[25] Mid Atlantic Climbers, 2020
[26] Stephens, 2017, 8
[27] Access Fund, 2008, 7

working relationship with climbers to address the impacts and identify resources. The climbers can share their perspectives and offer support either through education or boots on the ground stewardship projects. Regardless, site visits help to focus conversations on actual places rather than devolving into theoretical speculation – where "moral panics" tend to arise and thrive.

Baselines

Prior to undertaking the development of a Climbing Management Plan, the land manager should have pertinent baseline data such as climbing use, natural resource concerns, cultural resource concerns, etc. Convening an interdisciplinary meeting with resource and recreation specialists to determine what is known and unknown will be crucial in the decision-making process. If important information is lacking, then it may make sense to delay taking action so that baseline data collection can occur.

Climbing

Climbing shares common management issues with other activities, but there are unique aspects of this activity that should be considered. No other recreational activity takes place on vertical terrain of rock faces. Because of the unique qualities of climbing, managers should not be too quick to compare climbing to other recreational activities. It is important to recognize and acknowledge the uniqueness of recreating on vertical terrain to avoid analogies that lead to confusions and conflicts. Any attempt to manage climbing requires a basic understanding of its uniqueness – in particular, the several types of climbing activities, which may create special management considerations. Climbing activities and their settings vary widely and are dependent, for instance, on local geological and geographical factors. On the one hand, some areas of concentrated climbing use can be monitored and regulated fairly easily. On the other hand, many climbing areas are difficult to access and dispersed widely, which makes enforcement of regulations and monitoring of conditions difficult, if not impossible given limited resources. This is one of the many reasons that working with a Local Climbing Organization (LCO) or unaffiliated local climbers is preferable. Tapping into the wealth of local knowledge about the intricacies and nuances of climbing in specific recreational settings will greatly assist the land manager. This section attempts to provide land managers with an introduction to several unique aspects of climbing management.

1. Types of Climbing

There are many types of climbing. How these are defined can seem straightforward, but they can also hide the incredible amount of nuance involved. Definitions can be helpful to a point, but acknowledging the limitations of a definition's ability to describe the nuance contained in the local context is crucial for the success of any management decisions.

Sport Climbing

Description: Sport climbs are "typically a single pitch, one rope length, fixed anchors (bolts) provide protection on the climb."[28] Sport climbing focuses more on the "gymnastics" aspect of climbing. Climbers normally equip sport routes with fixed anchors by accessing the top of the cliffs and then lowering on ropes to place fixed anchors. To descend route climbers do not normally "top out" and walk away from the top of the cliff, but are instead lowered by the belayer from a double set of fixed anchors placed at the top of the climb.

Settings: The recreational settings for sport climbing are generally close to roads or trailheads on cliffs that are between 50 ft and 200 ft tall. Sport climbing tends to be social, with groups of climbers often gathering at the base of climbs and taking turns to climb routes.

Traditional Climbing

Description: "Trad (traditional) climbing is where the first climber (the 'lead') places their own protection on their way up the rock face and their partner (the 'second') removes the

[28] "Types of Climbing" National Park Service. https://www.nps.gov/subjects/climbing/types-of-climbing.htm

protection while they are 'seconding' the route."[29] However, it is important to note that fixed anchors are occasionally used for safety when cracks for removable protection are unavailable.

Settings: The recreational settings for traditional climbs can vary from being close to roads to primitive settings on rocks that can range from fifty to several thousand feet. Removable (trad) protection requires the availability of cracks in hard, reliable rock. Climbing on cliffs higher than 200 ft are "multiple-pitch" climbs. On these climbs climbers do not normally congregate at staging areas. On multi-pitch climbs, to descend climbers will either "walk-off" or rappel the route, and often return to the base of the climb to collect packs, equipment, etc.

Bouldering
Description: Bouldering "is a form of climbing usually practised on small rocks and boulders, or at indoor walls. As the climber doesn't go very high it is often possible to jump back down. Boulderers usually use padded mats to jump down (or fall) onto to reduce impact on landing and to protect the ground from erosion. Bouldering routes are called boulder problems."[30]

Settings: The recreational settings for bouldering are often near roads in boulder fields. Similar to sport climbing, bouldering focuses more on the "gymnastic" aspects of the sport. Bouldering tends to be more social with groups of climbers gathering around boulders taking turns climbing boulder "problems".

Ice
Description: Ice climbing "involves climbing on snow or ice. It is most often done outdoors using ropes and protection systems similar to rock climbing. There are now some specialist indoor venues for this form of climbing. Specialist equipment required includes mountain boots, warm clothing, ice axes, crampons, harness and rope."[31]

Settings: Ice climbing requires ice, so this recreational activity is generally off-season. The cold weather is largely self-limiting so the numbers of users are not usually substantial. Frozen waterfalls are often a popular location for ice climbing.

2. Fixed Anchors

As noted, climbing shares some management considerations with other recreational activities, such as backpacking, fishing, and kayaking. However, climbing is the only recreational activity that takes place on the vertical terrain of rock faces. One special feature of climbing that has created management concerns is the reliance of some climbing on the use and installation of fixed anchors for safety. The use of fixed anchors has created much confusion, concern, and consternation for land managers. When cracks for removable protection are absent climbers

[29] "Different Types of Climbing Activities Explained" BMC https://www.thebmc.co.uk/different-types-of-climbing-explained
[30] ibid.
[31] ibid.

sometimes place fixed anchors for safety, and, as noted, sport climbing relies exclusively on fixed anchors for safety. One perplexing issue, for instance, is simply determining whether a fixed anchor is an "installation" or a "necessary safety precaution." This dilemma has created much controversy and delayed the development of national policy directives for climbing in Wilderness (see section "Fixed Anchors in Wilderness").

3. Rapidly Evolving Climbing Culture

Climbing culture is as unique as the sport itself. Understanding the local climbing culture and its history can greatly assist land managers in their efforts to effectively work with climbing communities and manage the resources in a sustainable manner.

Rock climbing has been called a "freedom sport"[32], which speaks to the independent, rebellious spirit that has characterized the sport from its origins. In recreational sociology rock climbing is a "'lifestyle' sport, characterized by individualism (absence of team competition), self-governance (lack of an official governing entity), and a distinctive subculture"[33]. Studies have been done and there are many examples in the history of the sport that provide evidence that climbers can and do effectively enforce community norms and, in some cases, externally-imposed rules through social sanctioning and deliberation[3435]. However, in the case of externally-imposed rules, "[f]or social sanctions to serve a rule-enforcement role, the rule must be legitimized in the eyes of community members, establishing that the rule falls under the purview of community values and concerns. Assuming a community adopts the rule as a norm, however, the result is likely a robust governing institution, supported by both material incentives and normative pressures"[36]. This highlights the importance of gaining legitimacy or "buy-in" from the climbing community for any climbing management decisions, especially when climbing areas and use are scattered widely making practical enforcement of rules and regulations difficult.

Historically, the relationships between the climbing community and land managers have been poor with climbers in some areas "firmly convinced the USFS is not competent to manage"[37]. Bogardus characterizes government regulation of rock climbing as "an ongoing concern and anathema to the ethos of traditional climbing"[38]. However, there are plenty of examples of complementary, collaborative relationships between LCOs and land managers across the United States that provide evidence that the sport and culture continue to evolve. The historic opposition to government regulation does not necessarily mean that distrust and perceptions of illegitimacy are inevitable, but it is important to be aware that they are possible and could present challenges to successful implementation of climbing management initiatives.

Katherine Thompson conducted a study of rock climbing at Seneca Rocks that involved a social worlds approach. Citing numerous academic studies, she notes that "practices in climbing are

[32] UIAA Mountaineering Commission, 2000, foreword
[33] Carter, 2019, 359
[34] Carter, 2019
[35] UIAA Mountaineering Commission, 2000
[36] Carter, 2019, 357
[37] Thompson, 2010, 5
[38] Bogardus, 2012, 301

locational, style-specific, contested, and subject to change over time"[39]. These observations point towards the necessity of managing climbing at the local levels in partnership with the local climbing community. Thompson adds that "style (how a particular route or area is climbed) and ethics (appropriate behavior toward the resources at a particular climbing area) are, to a large degree, based on locally established, loosely held, and mostly unwritten 'rules,' although some guidelines may be set forth in a local guidebook"[40]. Local climbers and guidebooks are excellent resources for identifying and understanding the local norms. However, acknowledging that these norms can be contested and are subject to change bolster the argument for a collaborative adaptive management process – particularly due to the rapid increase in the sport's popularity and the changing demographics.

Lessons about the malleability of climbing norms and the community overall can be gleaned from the "Bolt Wars". The Bolt Wars refer to "the debate about when and if bolting is appropriate and whether traditional or sport climbing is a more 'pure' form of climbing"[41]. This debate arose out of the rapid growth of sport climbing and the resulting proliferation of fixed anchors upon which the sport depends. Bogardus considers the debate "ongoing" and identifies the source as the tension between "accessibility" and "exclusivity" that "has been a theme in mountaineering and rock climbing throughout their histories"[42]. Examining the Bolt Wars, Fuller noted:

> "…[The traditionalists'] references to the sacred character of climbing ethics were ultimately undermined not only by the historical plasticity of these ethics, but also by the symbolic association of climbing with individualism and freedom. Indeed, in many ways deviance and heresy had a *positive* resonance in the context of climbing culture. Attempts to enforce a rigid boundary excluding the new practices incited a backlash that sport climbers were able to exploit with appeals to freedom and by casting themselves as iconoclasts" [43].

The growing gym to crag trend raises questions about the continued community coherence of climbing and therefore the effectiveness of social sanctioning. Rock climbing gyms have proliferated throughout the country making the sport more accessible and driving a rapid rise in new participants in the sport. This trend has positive and negative aspects. David Paul Carter notes that "Gym climbers are often well-versed in the technical aspects of climbing, but lack the institutional education and acculturation that prior generations experienced learning to climb outside"[44]. The lack of institutional education and acculturation implies that the institutional enforcement of local norms through social sanctioning that has resulted in effective self-governance in the past will perhaps become less effective as the gym to crag trend continues. However, the concentration of climbers at gyms also provides an excellent opportunity for the climbing community to coalesce and increase "community coherence" by focusing education and acculturation efforts at the gym and facilitating trips to outdoor climbing areas.

[39] Thompson, 2010, 16
[40] Thompson, 2010, 16
[41] Thompson, 2010, 17
[42] Bogardus, 2012, 284
[43] Fuller 2003, 25-26
[44] Carter, 2019, 360

4. JEDI (Justice, Equity, Diversity, and Inclusion)/ DEI (Diversity, Equity, and Inclusion)

While the current demographics of rock climbing are overwhelmingly white, millennial, and male, the climbing community has embraced JEDI/DEI efforts to increase diversity in the sport. The gym to crag trend is often mentioned as a negative trend, but it also has positive aspects, such as introducing diverse groups of climbers to public lands. The U.S. Forest Service's efforts to increase diversity on public lands could be bolstered by partnering with LCOs, the Access Fund, rock climbing companies, and organizations focused on JEDI/DEI initiatives.

In 2022, The Access Fund started a pilot JEDI grants program that seeks to fund projects that promote JEDI values, particularly:

- "Projects led by those from BIPOC, LGBTQ+, disabled, and other marginalized communities.
- Projects that incorporate conservation efforts and/or education on low-impact climbing practices.
- Projects that connect youth to climbing, especially outdoors.
- Projects that facilitate access to climbing for underrepresented groups.
- Projects that utilize traditional/Indigenous ecological knowledge.
- Projects that otherwise enhance the capabilities of grassroots advocates to engage in JEDI work."[45]

There have also been a proliferation of groups focusing on JEDI/DEI initiatives in rock climbing. In their 2019 *State of Climbing Report* the American Alpine Club identified the following groups "helping to make climbing more welcoming and equitable":

- "Brown Girls Climb
- Brothers of Climbing
- Flash Foxy
- Paradox Sports
- ROMP
- Natives Outdoors
- TranSending 7
- Sending in Color
- Latinos Outdoors
- OUT There Adventures
- Catalyst sports
- Queer Climbing Collective
- Adaptive Climbing Group
- Climbers of Color"[46]

[45] Access Fund, 2022, "Access Fund JEDI Grant Program Now Accepting Applications"
[46] American Alpine Club, 2019, 7

5. Economic Impacts

Much of the conversations about rock climbing tend to focus on the potential negative impacts. However, it is important to also acknowledge the positive impacts that climbing can bring to a local area. The Outdoor Industry Association reported that in 2017 climbers contributed $12,450,000,000 to the national economy "with more than 87% (10.8 B) coming from trips and travel"[47]. Multiple studies have been conducted assessing local economic impacts of rock climbing. A study in the New River Gorge area of West Virginia estimated that visiting rock climbers had spent $12.1 million in 2018 in Fayette, Nicholas, and Raleigh counties[48]. A similar study was conducted in the Red River Gorge in Kentucky and found that "climbers spend an estimated $3.6 million dollars in the regional economy each year"[49]. The study also found that the demographic data contradicted prevailing climber stereotypes; the authors write: "Prevailing myths about rock climbers often suggest they are uneducated, unemployed, and contribute little to the local economy. However, over half of respondents in our study have college degrees and one fifth of our respondents have terminal degrees such as doctorates. Most of those who do not have college degrees are, in fact, college students"[50]. In both studies, the majority of the impact came from non-local climbers, so climbing areas that are mostly used by local climbers will likely have significantly different economic impacts per user.

Climbing and the Forest Service

<u>Resource Protection</u>

The Forest Service's mission "is to sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations"[51]. Both NFMA and FLPMA require managing for multiple use[5253].

The management of climbing will depend on the resources particular to the area being managed as well as the multiple uses and the corresponding but not necessarily compatible interests of the user groups. Connecting the dots between resource protection and the provision of opportunities for multiple use of the National Forests is complicated. While it may seem attractive to reduce the complexity by limiting participation, collaboration, adaptive management, and collaborative adaptive management provide numerous benefits in the decision-making and implementation stages.

[47] American Alpine Club, 2019, 13
[48] Maples et al., 2019, 2
[49] Maples et al., 2017
[50] Maples et al., 2017, 11
[51] USDA Forest Service. FSM. Amendment 1000-2007-2**,** 2007, FSM 1000- Organization and Management, Zero Code 1020, WO Amendment to Forest Service Manual
[52]USDA Forest Service. FSM. Amendment 1300-2016-1, 2016, FSM Chapter 1390 – Knowledge Sharing and Conservation, 1390.1 Authority, p. 3
[53] USDA Forest Service. FSM. Amendment 1300-2016-1, 2016, FSM Chapter 1390 – Knowledge Sharing and Conservation, 1390.1 Authority, p. 4

Climbing management requires knowledge about cliff environments. However, cliff environments are "one of the least studied ecosystems globally"[54]. The lack of scientific studies can pose problems for the decision-making process, but an abundance of scientific studies can also create issues. For instance, there is a significant amount of research on the impacts of climbing on cliff nesting birds, but determining what qualifies as "best available science" might lead to disagreement. Some studies might contain foundational knowledge but may not meet the context-specific needs of the local situation. More recent scientific findings may better fit the context but contain significant uncertainty and/or imply untested practical applications. Acknowledging that scientific knowledge about resource systems can be uncertain and open to change bolsters the case for adaptive management because the implementation of management decisions will constitute a site-specific experiment.

Raptor Management

The most common form of climbing management already being applied on Forest Service land are seasonal closures of climbing areas for raptor protection.

The Access Fund's "Climbing and Raptors: A Handbook for Adaptive Raptor Management" mentions four factors to be considered holistically at a site-specific level: 1) "Nest site/eyrie" quality rating, 2) "Resilience to human activity", 3) "Viewsheds and buffer zones", and 4) "Seasonal Sensitivity"[55].

There is a good possibility that determining "best available science" will lead to contestation and potentially conflict. As mentioned earlier, there were disagreements over using a viewshed approach for area closures or 800m closures for the two species of concern on the Bitterroot National Forest. The viewshed approach increases access by selectively closing areas within the viewshed of the nest site, while 800m closures take a precautionary approach and significantly decrease access. Conferring with the local wildlife biologist to get recommendations based on the local context is advised.

The rationale provided by the Bitterroot National Forest's wildlife biologist for adopting the viewshed approach for peregrine falcons included the following:

> "Some authors (e.g. Richardson and Miller 1997) recommend an 800 meter buffer around peregrine eyries to reduce the risk of nest failure due to disturbance. Some areas that manage rock climbing cliffs with nesting peregrines follow this recommendation, although there is apparently variation between areas (Chrobak 2018). Ruddock and Whitfield (2007) summarized expert opinion that indicated that peregrines exhibited active disturbance at a median of 125 meters during incubation, and 225 meters during chick rearing. However, several of the researchers and managers most involved in and responsible for the recovery of peregrine populations both in North America and in Europe make the point that peregrines will often tolerate considerable disturbance that is not in the immediate vicinity of the eyrie." [56]

[54] Clark and Hessl, 2019, 705
[55] Access Fund, 6-14
[56] Bitterroot National Forest "Developing a Climbing Management Plan" https://storymaps.arcgis.com/stories/6f18fccfa609409eaee82f39e4f4f4e3 (accessed Nov. 16, 2021)

Botanical Resources

Identifying plants is a skill. Where threatened/rare/endangered botanical resources overlap with climbing activity, the land manager will have to determine whether impacts can be mitigated through education or the area needs to be closed altogether. The Access Fund suggests monitoring as a "tool for developing sound management practices" but stress the importance of selecting an appropriate and consistent technique[57]. They note that "The Cliff Ecology Research Group (University of Guelph in Ontario, Canada) and Appalachian State University, Boone, NC, have developed consistent techniques to monitor and measure human disturbance on cliff environments"[58].

Soils

From the parking lot to the crag itself, erosion is a potential concern associated with climbing. Many climbing areas are accessed via "social" or "user" trails that are not part of "system" trails. These trails are created by users, either passively through repeated use trampling vegetation and compacting soil or by active installation with hand tools. The former is more common than the latter. Unauthorized trail construction/creation is problematic for many reasons, but erosional issues are often the most obvious, particularly for climbing access social trails because they tend to be unsustainably steep grades taking the most direct route to the base of the crag/climbing area.

At the base of the crag, erosion and soil disturbance/compaction is another common issue associated with climbing. In some locations, building belay boxes may be a sensible solution to stabilize soil at the base of the climbing area, especially if the area sees a high concentration of use. Bouldering often involves the use of crash pads, which can cause soil compaction, soil erosion, and vegetation damage.

Cultural Resources

Soil disturbance can also affect cultural resources mixing up the sedimentation and potentially exposing archaeological resources. The confidential nature of cultural resource information makes it very difficult to manage climbing and impossible for climbers to self-manage. Sacred sites and sensitive archaeological resources need to be protected while keeping them secret. Establishing no-go zones can be effective, but there is a balance to be struck between making them too small thus exposing cultural resources and too large thus unnecessarily closing recreational access or making enforcement/monitoring impractical.

Chalk Use

Chalk is used by climbers to increase their grip. Depending on the site and level of climbing use, the chalk can accumulate. The impacts can be merely aesthetic in some areas, and management actions such as banning white chalk have been taken in areas with red rock (e.g. Arches National Park). In other areas the impacts may be more substantial because "chalk can also increase

[57] Access Fund, 2008, 16
[58] Access Fund, 2008, 16

alkalinity and alter the chemical balance of the rock's surface. This can impact micro flora, and fauna such as lichens, which various animals rely on as a food source"[59]. However, climbing best practices include brushing chalk off of holds which helps minimize these impacts.

Aesthetics

Besides chalk use, fixed anchors can also create a visual impact affecting the natural aesthetic. Climbing best practices mitigate this visual impact by camouflaging anchors with paint prior to installation.

Considering Common Management Strategies

Permitting

Establishing a permit system for climbers may make sense in particular contexts, but this management action may also result in more problems than solutions. In areas with high-levels of concentrated use, limited-entry permit systems can reduce the numbers of users. However, without regular, consistent enforcement, the institution of a permit system could lead to the normalization of rule violation, especially if the affected community distrusts the agency and considers the regulations unjust.

The design of the permit system may greatly bolster or hinder the likelihood of climber "buy-in". Are the permits easily accessible? Do they cost money? Are they annual or daily? At a meeting with the Bitterroot National Forest many climbers voiced their opposition to a permitting system, particularly noting that "permit" entails permission. The Forest Service listened to this feedback, explained the educational and monitoring goals behind the proposed permit system, and noted that another strategy could perhaps meet all their interests better, reminding the group that nothing had been set in stone. This was an excellent example of focusing on "interests" rather than "positions" when engaging in collaborative dialogue.

Route/Area Development Authorization

Sport climbing areas are generally created in an ad-hoc manner one route at a time. According to the Access Fund "studies indicate that less than 20% of climbers have ever installed a fixed anchor"[60]. Most sport climbers take fixed anchors for granted and never develop routes themselves. As such, having targeted discussions with route developers may be an important and more efficient way for recreation managers to learn about route development in the area and address specific resource concerns associated with future route development. Thompson refers to a study conducted at Kootenai Creek, Montana, where researchers found that "climbers who learned to climb indoors were more likely to be uncomfortable climbing near Native American artifacts and with establishing bolted routes themselves than climbers who learned to climb

[59] Bitterroot National Forest, "Developing a Climbing Management Plan" https://storymaps.arcgis.com/stories/6f18fccfa609409eaee82f39e4f4f4e3

[60] Access Fund, 2020

outdoors on sport routes. Those who learned to sport climb outdoors were more comfortable with establishing sport routes themselves"[61].

Envisioning how the Forest Service and climbing community could work together to develop areas in the future may be a fruitful exercise for both sides to understand the interests and obligations of the other. The climbing community could benefit from understanding the legal obligations and resource concerns of the land manager. The land manager can benefit from identifying opportunities for shared stewardship, increasing understanding of the nuances of the sport, and establishing a working relationship with climbers. While the actual routes are generally the focus for the climbers, land managers tend to focus on areas, managing the forest service roads, parking lots, trails, and the crag. Looking toward the future and imagining an ideal climbing area may help everyone involved to see what could be accomplished from a complementary working relationship.

Considering an authorization or permit system for route/area development may make sense. How the system is designed will affect its efficacy. Individual bolt and route authorization would be more onerous than a programmatic authorization establishing either development areas or no-development areas. For instance, some plans have "designated climbing areas" open to development and others, such as at Joshua Tree National Park, have Fixed Anchor Free Zones. If there is an LCO, the authorization process could be designed such that the LCO and land manager work together through either a formal or informal agreement to authorize new area/route development. White Mountain National Forest in collaboration with the climbing community has determined certain areas have reached "carrying capacity" where new fixed anchors are prohibited[62]. Long delays in authorization may lead to limited adoption and affect perceptions of legitimacy that could reduce overall observance of a CMP. Creating a permit system for route developers could add another layer to the authorization system that could help establish norms, provide education, and allow for an opportunity for graduated sanctions when social sanctioning is not sufficient.

Moratoriums can be used to halt new route development momentarily or permanently, but they can also create a lot of controversy. When the Bitterroot National Forest announced a moratorium on new bolts, the forest received a huge number of comments from local and national climbers. Clearly communicating actions such as moratoriums is crucial for gaining buy-in and maintaining trust. Speculation and misinformation spread in the Bitterroot Valley with a surprising number of climbers believing that the moratorium prohibited bolt replacement and/or climbing in general, which was not the case. Providing a clear timeline can also be important. Unfortunately, the Bitterroot National Forest's moratorium was issued at the start of the COVID-19 pandemic. The tentative timeline of 12-18 months was extended which resulted in some serious criticism of the length of the CMP development process from some of the climbers.

In discussing route/area development, there should be discussion about carrying capacity and Limits of Acceptable Change which will then inform management decisions such as closures or moratoriums.

[61] Thompson, 2010, 20
[62] White Mountain National Forest, 2015, 3-4

Fixed Anchors in Wilderness

The Wilderness resource is arguably the most contentious resource in the climbing management discussion. Many have described this issue as the elephant in the room. National directives are currently being developed regarding climbing and will hopefully provide clear direction on fixed anchors in Wilderness. Until these directives are issued, conversations regarding the Wilderness issue will likely be unfruitful and could potentially exacerbate conflict. However, it may be important to explain the challenges of Wilderness management and the history of the agency's attempts to resolve the fixed-anchor debate.

Managing federally designated Wilderness is complex and often requires tradeoffs due to the multi-faceted qualities of Wilderness character: 1) untrammeled, 2) undeveloped, 3) natural, and 4) opportunities for solitude or a primitive and unconfined type of recreation[63]. The tradeoffs mentioned occur when decisions improve one or more qualities of Wilderness character while degrading other qualities. For instance, building a bridge may help protect against negative effects on the natural quality at sensitive stream crossings but the undeveloped quality will be degraded, and, depending on the interpretation of "primitive and unconfined type of recreation", this quality may be degraded as well. Concentrating use by developing and maintaining trail networks has been a long-term strategy for public lands agencies administering Wilderness. These developments are administrative and are generally recognized as necessary degradations of the undeveloped quality of Wilderness character in order to protect the other qualities. However, fixed anchors are installed by members of the public and are usually interpreted as "installations" which conflicts with section 4(c) "Prohibition of Certain Uses" which states "there shall be no…structure or installation within any such area"[64].

The Bitterroot National Forest's Story Map "Developing a Climbing Management Plan" provides an example of how to communicate the history of the Forest Service's efforts to make a decision on the use of fixed anchors in federally designated Wilderness:

> **Some wilderness managers have expressed concern that the use of fixed safety anchors may not be consistent with the 1964 Wilderness Act, and that their use should be prohibited. In 1996 the Sawtooth National Forest supervisor reviewed the Forest policy and decided that, while existing bolts/anchors would be maintained and replaced as needed, no additional fixed anchors/bolts would be permitted in the Sawtooth Wilderness thereby making the Forest Service the first land management agency to prohibit the use of bolts as fixed anchors. Under the Wilderness Act, permanent installations for other than administrative purposes are prohibited in designated wilderness areas (Public Law 88-577, Sec. 4 (c)), with the ensuing controversy centered around whether or not bolts should be classed as "installations" or "necessary safety precautions".**
>
> **This decision was appealed by both the Access Fund, a climbing advocacy group, and Wilderness Watch, a conservation group focused on wilderness management. The former feeling that the rule was too restrictive and the latter feeling that existing anchors needed to be removed.**"
>
> **In 1998, it was decided that the Forest Service would initiate negotiated rulemaking to clarify national policy around permanent fixed anchors for rock climbing in wilderness areas. The decision meant that metal bolts would remain legal in national forest wilderness areas (except for the Sawtooth Wilderness) for up to 1 year pending final policy.**

[63] Wilderness Act of 1964, section 2(c)
[64] Wilderness Act of 1964, section 4(c)

The key issues to be considered for negotiation were:

- **What type of rock climbing-related equipment should be allowed in wilderness areas and under what circumstances should certain types of equipment be allowed.**
- **What process should be used to decide whether the insertion or removal of a fixed anchor should take place and who should be party to the decision.**
- **Who should be responsible for the insertion and removal of fixed anchors.**
- **What is the impact on the Forest Service and the climbing industry if the agency assumes an active role in regulating use, insertion, and removal of fixed anchors**

In 2000, the Secretary of Agriculture established a negotiated rulemaking committee to develop recommendations for a proposed rule regarding the use, insertion, and removal of fixed anchors placed by recreational rock climbers in congressionally designated wilderness areas administered by the Forest Service. This committee, called the *Fixed Anchors in Wilderness Negotiated Rulemaking Advisory Committe*e, included 23 people representing a cross section of interests with a definable stake in the outcome of the proposed rule (Federal Register, Vol. 65, No. 111, June 8, 2000). Four meetings were held between June 27 and September 19, 2000 but, unfortunately, the issue proved to be too contentious to resolve to a final policy decision. It was , however, recommended that where rock climbing and the use or potential use of fixed anchors is applicable, units should prepare climbing management plans to address resource issues and that these plans need to be completed with full public involvement."

This has led to a good deal of variety in management policies across the National Forest System, with some locations restricting the placement of fixed anchors (e.g., Sawtooth National Recreation Area, Sawtooth National Forest, Idaho) and others where new bolts are permitted subject to limits on the number of climbing routes in a given area (e.g., Mount Charleston Wilderness, Toiyabe National Forest, Nevada). [65]

While some maintain that the mere presence of fixed anchors will attract climbers, a study conducted by Erik Murdock at Joshua Tree National Park found that "very few climbers climb and place fixed anchors in remote wilderness areas" and "the placement of fixed anchors in remote wilderness areas will attract very few climbers"[66]. Murdock reports that "out of 843 reported climbing trips (in and out of designated wilderness), not one trip involved more than a 50 minutes approach hike"[67]. Characterizing the opposition to bolts, he writes that "most individuals and groups that support the ban on fixed anchors in wilderness justify their stance through legal or philosophical arguments instead of research on impacts or wilderness visitor destination choice and flow"[68].

Jones and Hollenhorst suggest that all four federal wilderness managing agencies should be involved in the next attempt to resolve the fixed anchors in wilderness debate[69]. Though the suggestion makes sense from the perspective of the National Wilderness Preservation System, the practical challenges to collaboration on this scale have likely kept this debate from being resolved.

The fixed anchors in Wilderness debate is currently ongoing as Joshua Tree National Park is currently revisiting its Climbing Management. Groups such as Wilderness Watch are advocating for all fixed anchors to be banned in Wilderness. The National Park Service has issued directives

[65] "Developing a Climbing Management Plan" https://storymaps.arcgis.com/stories/6f18fccfa609409eaee82f39e4f4f4e3 (accessed Nov. 16, 2021)

[66] Murdock, 2010, 135
[67] Murdock, 2010, 116
[68] Murdock, 2010, 126
[69] Jones and Hollenhorst, 2002, 19

that prohibit "bolt-intensive" climbs (i.e. sport climbs) in Wilderness. The Forest Service is currently working on national directives. The Wilderness resource will benefit to the extent that the directives, management decisions, and enforcement procedures align across the administering agencies.

For the local land manager it is probably best to avoid engaging in the Wilderness discussion without clear national directives. Until clear direction is provided, this debate should be communicated as outside of the "decision space".

Wilderness Management

The national need for clear directives for fixed anchors in Wilderness are but one of the management dilemmas stemming from what David Cole identified as the fundamental dilemma: "how best to balance responsibility for meeting society's needs, particularly for backcountry recreation, with the mandate to protect wilderness conditions, both ecological and experiential"[70].

Cole explains that while "scientific and experiential knowledge about how to manage wilderness has increased greatly", "the application of this knowledge is inadequate for at least two reasons":

1. "Funding and resources for wilderness management have never been commensurate with the magnitude of the task", and
2. "Lack of clear policy on how to resolve two fundamental dilemmas resulting from vague, conflicting language in the Wilderness Act". These are:
    - "Conflict between providing access to wilderness for its 'use and enjoyment' and protecting the biophysical conditions and visitor experiences that constitute wilderness but are degraded by recreational use"; and
    - "Conflict between two desirable attributes of wilderness ecosystems: wildness, the relative lack of intentional human manipulation; and naturalness, the relative lack of human influence"[71].

One of the solutions is the "wilderness management zoning approach" proposed by Haas et al. (1987) that echoes Bob Marshall's proposal that "some wilderness areas should emphasize recreational access and some should be more strongly protected"[72]. Cole points out that the costs of this approach "include acceptance of far-from-pristine conditions in heavily used wilderness locations and the need to restrict access across much of the wilderness system, including places that are still lightly used"[73].

Another solution would be to pursue greater consistency in management decisions among agencies administering Wilderness.

[70] Cole, 2001, 5
[71] Cole, 2001, 5
[72] Cole, 2001, 5-6
[73] Cole, 2001, 6

Part Three: Designing Processes to fit the Climbing Context

This part of the handbook is designed to help land managers design climbing management processes that fit their local climbing context. Acquiring knowledge of the local climbing context is a necessary step for effective process design, so skipping to this part is not advised.

Decision Guide

The Decision Guide for Part Three is a starting place for land managers to consider some common process design questions. The guide asks a series of basic questions and attempts to provide suggestions for land managers to think about. The guide also directs land managers to particular areas of the handbook that may help answer the question or change the initial answer.

Third-party Facilitation

Is third-party facilitation needed/appropriate?

see section "Determining and Navigating Roles" (page 40)

- Yes → Secure a third-party facilitator
- No → Identify staff member capable of facilitation
- Don't Know → Consider conducting a Situation Assessment/Stakeholder Analysis. See section "Situation Assessment/Stakeholder Analysis" (page 39)

Conflict

Does conflict exist currently or is it likely?

see section "Considering Conflict" (page 48)

- No → Are there analogous climbing areas that already have CMPs?
  - Yes → Consider adapting the CMP
  - No → Develop CMP from scratch
- Yes, conflict now
  - Design process to address conflict, build trust, and establish working relationships
  - Address conflict prior to CMP process
- Yes, conflict likely → Design process to address conflicts as they arise

Considering Scale

What's the proper scale for the Climbing Management Plan?

See section "Taking stock" (pages 15-19) and "NEPA Strategies" (page 45)

- Specific Area
- Forest-wide
- Both

Process Design

Initial considerations

While the benefits of public/stakeholder engagement generally and collaboration specifically have been recognized[74], fully realizing these benefits requires the public land management agency to take the time to develop an intentional approach to their efforts. The first step for the agency should be to determine whether it has the resources to meaningfully engage the public and support collaborative efforts. These resources include time, money, willingness to learn from public input, and leadership support. If any of these resources are lacking, it can be difficult, if not impossible, to realize the benefits of public engagement and collaboration and may end up dooming the process and/or making the situation worse. Taking the time to honestly assess the agency's resources will allow the land manager to plan a process that is realistic.

The Access Fund breaks the development of a Climbing Management Plan into five parts:

> "1) Initial considerations,
> 2) The planning process,
> 3) Preparation of the Draft CMP,
> 4) Review and revision of the draft plan, and
> 5) Implementation of the CMP"

Part Two of this climbing management handbook was written to assist land managers in gathering knowledge about the climbing context on their land management units. This knowledge is crucial for the first stage of "initial considerations" that will then guide the planning process. The Access Fund provides the following elements in the "initial considerations" stage: "Define the purpose and need for the CMP", identify stakeholders, "Define the scope and scale of the CMP", determine the "timeframe for consultation and production of the CMP", and "Consider the presentation and format of the CMP"[75]. Having gathered knowledge about the climbing context, the purpose and needs for a CMP should be easily identifiable for the land manager. The section in Part Two labeled "Making Connections" touched on the need to identify stakeholders and a later section in Part Three titled "Situation Assesment/Stakeholder Analysis" will provide additional information. The scope and scale of the CMP should be determined based on the climbing context as well as the agency's resources available for the development and implementation of the CMP. Decisions about the timeframe will be largely determined by the climbing context, the scope and scale of the CMP, and the agency resources available for consultation and production of the CMP. Regarding the presentation and format of the CMP, it may be useful to look at other CMPs and consider the Access Fund's suggested outline of a CMP on the following page.

[74] Koontz et al., 2020
[75] Access Fund, 2008, 56

In their guide to climbing management[76], the Access Fund provides an example outline of suggested CMP content that is displayed in the box below:

Access Fund's Outline of a CMP

1. Introduction
2. Purpose and need
3. Goal and objectives
4. Authorities, policies, guidelines for resource and recreation management
5. Description of present condition of natural, historic and cultural resources
   - A. General description
   - B. Vegetation communities
   - C. Wildlife communities
   - D. Specific resources (special-status species/cultural/historic)
   - E. Existing condition of identified resources
6. Description of relevant management infrastructure
(trails, camping facilities, waste disposal, parking)
7. Description of climbing activity
   - A. History
   - B. National/regional importance
   - C. Who are the climbers? (user profile)
   - D. Description of existing and potential climbing opportunities
   - E. Description of use patterns
   - F. Potential for new climbing areas
   - G. Maps/location of climbing resources
8. Description/summary of climbing management issues/concerns
9. Desired future resource conditions
10. Description of climbing management, past and present
11. Management recommendations for policy, guidelines, and action
12. Summary of internal/public review process (including any changes made to the draft)
13. Future review/liaison procedures
14. Glossary of terms
15. Bibliography
16. Contacts (interested parties/organizations)
17. Appendices

[76] Access Fund, 2008, 55

Situation Assessment/Stakeholder Analysis

Before making any decisions about a potential process to develop a Climbing Management Plan, land managers should consider doing a Situation Assessment and/or Stakeholder Analysis. A Situation Assessment considers the particular context and will assist with informing process design. A Stakeholder Analysis identifies the individual and group stakeholders that will be affected by resource management decisions and provides insight into the values, perspectives, and relative power of those stakeholders. These processes can be formal or informal and may require a third-party neutral assessor depending on the context and available resources. The results of these processes can help to design processes that match the local context.

For example, are the majority of climbers local, regional, national, or international? If the majority of climbers are local, then the opportunities to establish relationships, understand values/resource concerns, and engage in partnership could be greater/easier than in areas where there are few local climbers and the majority of climbers are coming from distances far away. Land managers should not assume that climbers are a homogenous group, as there can be a substantial amount of variation in norms, values, and perspectives.

Another important question to ask is: What other groups or individuals might be affected by climbing or climbing management decisions? If there are cultural resource concerns, involving tribes and tribal representatives might be appropriate. If a formal Friends group exists, does their involvement make sense and at what stage?

A Stakeholder Assessment not only evaluates the individuals/groups but also considers how those identified might interact with one another. Determining the collaborative potential of the stakeholders can help the land manager make process design decisions. Is there a history of conflict between/among individuals/groups? Does one group have a lot more power/influence/experience than others? Answering these questions will help land managers to design processes that meet the needs of the local contexts.

Governance Transition

In the United States, natural resource management has changed drastically since the early days of Forest Service under the direction of Gifford Pinchot. Legislation such as NEPA, FOIA, and the APA have all greatly increased the role of public participation in governmental planning, decision making, and implementation. Many have noted that the administration of national forests is undergoing a "governance transition" to an "Age of Collaboration"[77] characterized by a greater emphasis on shared stewardship, "an increase in the involvement and influence of nonstate actors", and "multistakeholder collaborative approaches to planning and implementing projects"[78].

However, just because the Forest Service is experiencing a governance transition does not mean that the stakeholders are transitioning. It is worth considering in a stakeholder analysis whether some still operate in the old paradigm and expect the processes to remain the same (i.e.

[77] USDA Forest Service National Collaboration Cadre, 2019, 1
[78] McIver and Becker, 2021, 49

negotiation and litigation, not collaboration). Undertaking a collaborative process with groups that are unwilling to collaborate is not advised. However, determining the collaborative potential of stakeholders can be difficult. Poor process design choices can lead to negative collaborative outcomes just as easily as uncooperative stakeholders.

It is worth noting that a significant portion of the Directives contained language regarding partnering with climbers and climbing organizations to assist with education, monitoring, and stewardship. Whether a relationship is formal (through a Memorandum of Understanding, Cost-Share Agreement, etc.) or informal, it is likely that the Directives will continue to envisage some sort of relationship for achieving successful management through Shared Stewardship and education.

Determining and Navigating Roles

Prior to initiating the process, the land manager must decide what roles to fill in the process. As the final decision-maker, land managers often decide to bring in third-party, neutral facilitators rather than try and facilitate the process themselves. This can help to create legitimacy and trust in the process while also allowing the agency representative to engage more effectively as a participant in the process. Wondolleck and Ryan found that:

> "Many collaborative processes do indeed need a facilitator to assist the parties in effective communication, negotiation, and problem solving. Many individuals can fulfill this role, including an agency official. But the agency facilitator should *not* be the same agency official who is responsible for representing the agency's interests at the table. In all three studies, we found that combined agency facilitation and representation proved not only ineffective but counterproductive to the consensus-seeking objective of the process"[79]

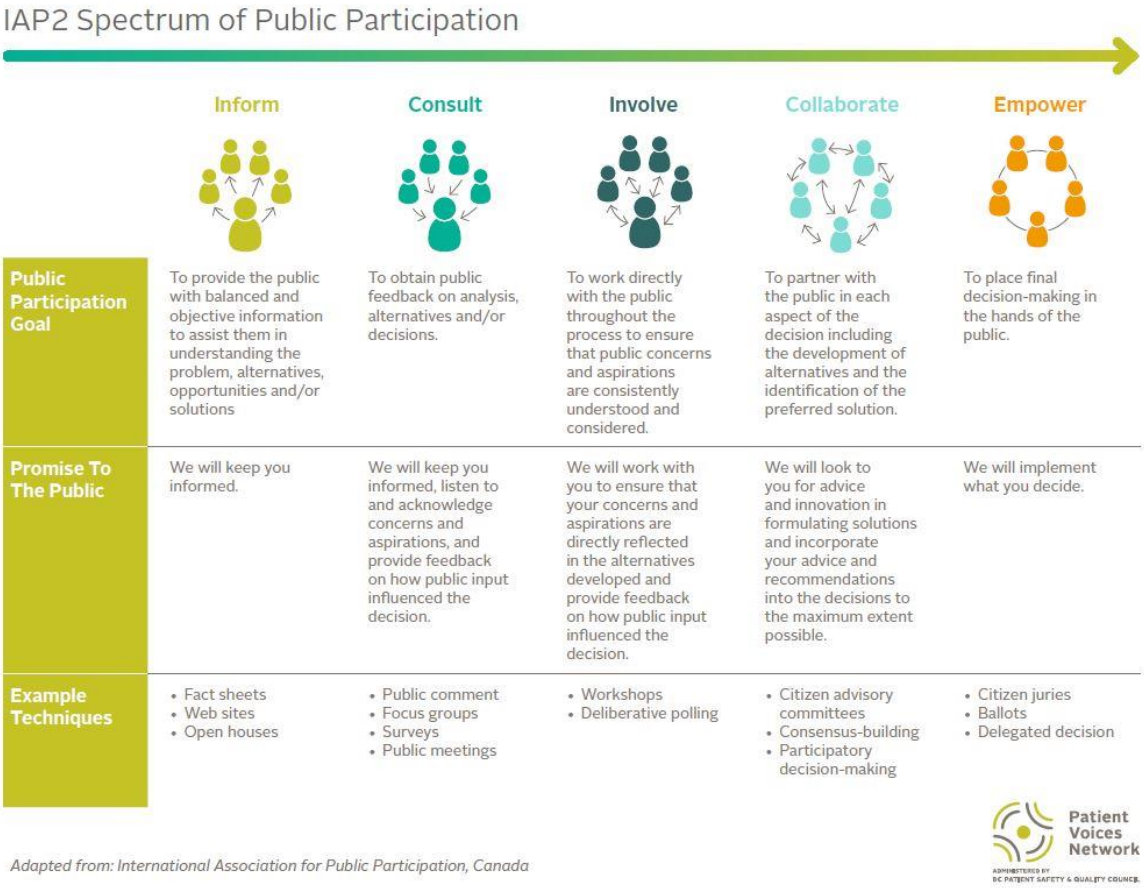
Wondolleck and Ryan identify three roles for agency participants in public participation processes: leaders, partners, and stakeholders[80].

As leaders, agency participants must address three realms: "about the process", "about the issues under discussion", and "about the decisions to be made"[81]. Part of providing leadership about the issues under discussion is clearly defining the "**decision space**". The "decision space" refers to what is open to discussion and what is not. With a clear decision space, participants "can focus their attention on issues that matter, the space where their voices are relevant, and where their time can be spent most meaningfully"[82]. As partners, agency participants must engage with other participants in a way that establishes trust and encourages open communication. As stakeholders, agency participants need to represent the interests and values of their organization. Determining the roles that each staff member will take on prior to engagement will help the process go more smoothly. Having a single individual take on all of the roles will be a serious challenge, especially if they are also tasked with facilitation.

[79] Wondolleck and Ryan, 1999, 129
[80] Wondolleck and Ryan, 1999
[81] Wondolleck and Ryan, 1999, 121-2
[82] USDA Forest Service National Collaboration Cadre, 2021, 3

Public Participation Strategy

Land managers should carefully consider the type and extent of public participation desired in the stages of the process. The Spectrum of Public Participation infographic below can help with this consideration by providing goals, promises, and examples of types of engagement for the corresponding levels of public participation.



The USDA Forest Service National Collaboration Cadre notes that "federal agencies have traditionally thought that public participation is driven by or limited to the requirements of the National Environmental Policy Act (NEPA). As a result, the Forest Service's public participation strategies have historically focused more towards the left side of the Spectrum such as 'Inform' and 'Consult'"[83]. More recent policy and legal obligations have prescribed a more proactive approach, such as the 2012 Planning Rule, referenced in the Forest Service Handbook: "The public participation strategy should cover the plan development activities required by not only the National Forest Management Act of 1976 (16 U.S.C. 1600 et seq.) and the Planning Rule (36 CFR 219) but also the National Environmental Policy Act (42 U.S.C. 4331 et seq.) and its implementing regulations and procedures (40 CFR 1500-1508, 36 CFR part 220; FSH 1909.15)"[84]. Moving to the right side of the Spectrum to "Involve" and "Collaborate" entails actively engaging the public "—early, often, and throughout – in a process to help shape a

[83] USDA Forest Service National Collaboration Cadre, 2021, 1
[84] FSH 1909.12.40, "Public Participation"

proposed action or decision"[85]. The National Research Council notes that "achieving full participation by interested and affected parties can require substantial diligence," but is crucial because "inadequate representation…is one of the leading criticisms of public participation processes"[86].

When considering the processes necessary to develop a Climbing Management Plan, the recreation manager must decide who will participate and at what stages. The distinction between "bounded" and "unbounded" processes can be helpful for thinking through this decision. Bounded processes involve representation "based on identified organized parties or on specific stakeholder interests represented by particular individuals" and generally fall into "policy dialogues, advisory committees, and negotiations"[87]. In contrast, unbounded processes are "open to any interested individual" and are useful for "coordinating deliberation to define an issue for assessment or policy, to determine the information needed for action, and to identify the ways in which various parties are affected by or interested in the outcome"[88]. Deciding between bounded and unbounded processes will depend upon the objectives, goals, and desired outcomes at the particular stages in the overall process. The stakeholder assessment can help to inform these decisions because "effective communication…can be affected by characteristics of the participants and their relationships with one another"[89]. Of course, abiding by the legal requirements (NEPA, FACA, etc.) will be necessary, so "bounded" processes would have to be carefully designed.

Depending on the context, it may make sense to collaboratively work with selected stakeholders in a bounded process prior to starting the unbounded process with the public. If the land manager has a good working relationship with the local climbing organization, then it may be a good idea to start discussions with the LCO to gather knowledge and help inform process design decisions that will maximize climber engagement (in-person and/or remote meetings, time of day, frequency of meetings, etc.). The Access Fund notes that climbing working groups frequently have been used to assist with developing climbing management policy and can be assembled without violating FACA[90] (see FACA section for more information). If the possibility for collaboration is significantly constrained (due to distrust, heated conflict, etc.), designing a public participation process that allows the land manager greater control may be preferable. However, as mentioned in the section "Climbing Culture", the implementation of any climbing management plan will be much more effective with climber "buy-in". Achieving this buy-in and engaging with the climbing community as partners may be a challenge because "helping others to act as partners required that agency participants break through barriers formed by the expectations, stereotypes and adversarial relationships that were derived from historical interactions between the parties and traditional procedures"[91].

There are many different formats that public participation can take. The context will help drive the format decisions. For example, if stakeholders are numerous and geographically dispersed,

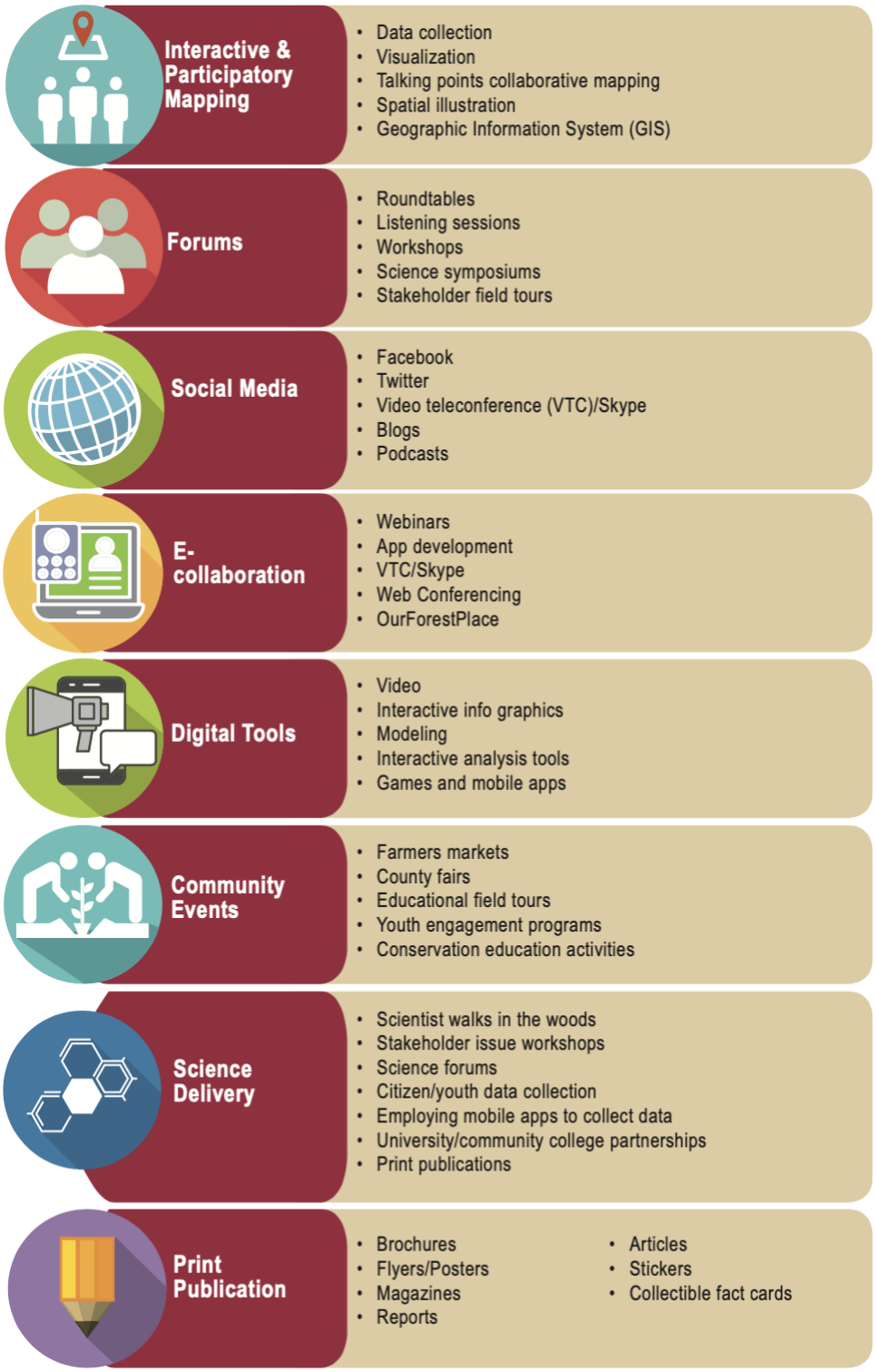
[85] USDA Forest Service National Collaboration Cadre, 2021, 2
[86] National Research Council, 2008, 192
[87] National Research Council, 2008, 192-3
[88] National Research Council, 2008, 193
[89] National Research Council, 2008, 192
[90] Access Fund, 2008, 56-57
[91] Wondolleck and Ryan, 1999, 126

in-person meetings may not be the best way to go forward. Numerous online platforms for video conferencing (Zoom, Microsoft Teams, etc.) became a normal part of many people's lives during the COVID pandemic. While these platforms have their drawbacks, they also have many advantages. For example, the use of videoconferencing can lower the "individual and institutional costs of information transfer and acquisition" and increase the convenience for participants[92]. There are numerous studies suggesting that "online participation yields many of the benefits of face-to-face participation, but that in some cases it can also increase polarization,"[93] which is an important caveat to consider. While in-person meetings will generally be the best way to establish relationships and trust, considering a mixture of formats might open up possibilities for greater inclusion and diverse perspectives. For instance, an expert may not be available to attend an in-person meeting in a remote location, but they may be able to give a presentation to a collaborative group remotely.

The following page provides an infographic with a variety of engagement tools to consider using.

[92] National Research Council, 2008, 115
[93] National Research Council, 2008, 115

Public Engagement Tools[94]



[94] Forest Service, 2018, 15

NEPA Strategies

Determining a NEPA strategy will depend on the particular issues that need to be addressed and the scope and scale of the CMP. Whether the land manager wants to develop a site-specific or forest-wide CMP (or both) will likely affect the NEPA strategy. Land managers are advised to work closely with their NEPA specialists from the start to make sure that processes meet the obligations required by the legislation.

As mentioned in the section "Taking Stock", the majority of existing USFS CMPs are for specific climbing areas. Each area is likely to have site-specific issues to address. However, the Bitterroot National Forest is pursuing a programmatic CMP for the entire forest and will do a full Environmental Impact Statement to fulfill their NEPA obligations. Other forests dealing with climbing at smaller scales are planning on addressing the site-specific issues with projects that will only require a Categorical Exclusion process, such as creating parking areas or building access trails.

As a first step in their efforts to manage climbing, the Bighorn National Forest came up with an interesting approach. The Bighorn National Forest in collaboration with local climbers and the LCO came up with a document called "Best Practices for Climbing and Climbing Management on the Bighorn National Forest" which avoids NEPA by explicitly embracing "should" language. At the beginning of the document the following explanation clarifies why their document does not initiate a NEPA process:

"**A major federal action requires an environmental analysis under National Environmental Policy Act (NEPA) and Council on Environmental Quality (CEQ) regulations. The following reference in the Forest Service NEPA Handbook 1909.15 is useful in understanding how this document does not constitute engagement in a major federal action requiring a NEPA process:**

An operative term in the CEQ definition of proposal is the term "stage." Most mid-level analyses, for example watershed analyses, are simply a stage where the Forest Service identifies what possible actions can be taken to move the Agency towards its desired future condition or "goals." However, the results of these analyses generally are a description of the existing condition and a myriad of possible management actions. It is not until the Forest Service determines that it wants to move forward with one or more possible actions that the Agency is at a stage where a NEPA "proposal" exists. If the Agency does not know where or when an activity will occur or if it will occur at all, then the effects of that action cannot be meaningfully evaluated. Additionally, if the proposed action does not compel any direct action or inaction then it would be very difficult to meaningfully evaluate the effects of that proposed action, including alternatives and mitigations. If a proposed action results in no tangible or perceptible effects on the environment then the effects of that action could not be meaningfully evaluated and it is unlikely that NEPA would apply.

This document provides best practices that climbers, land managers, and climbing organizations SHOULD take to address resource concerns."[95]

Rather than jumping right into the development of a CMP, considering a multi-step process similar to the Bighorn National Forest may allow the land manager to assess relationships and the site-specific context prior to initiating a formal NEPA process. This assessment may help inform the overall process design generally and the NEPA strategy particularly.

[95] "Best Practices for Climbing and Climbing Management on the Bighorn National Forest", 2020, 1

Federal Advisory Committee Act (FACA)

The 1972 Federal Advisory Committee Act is an important legal constraint to consider. The act's intent is to make sure that participation is equitable and no groups or individuals have "undue influence"[96].

The Forest Service's *Public Engagement Reference Guide* provides the following direction for when FACA applies:

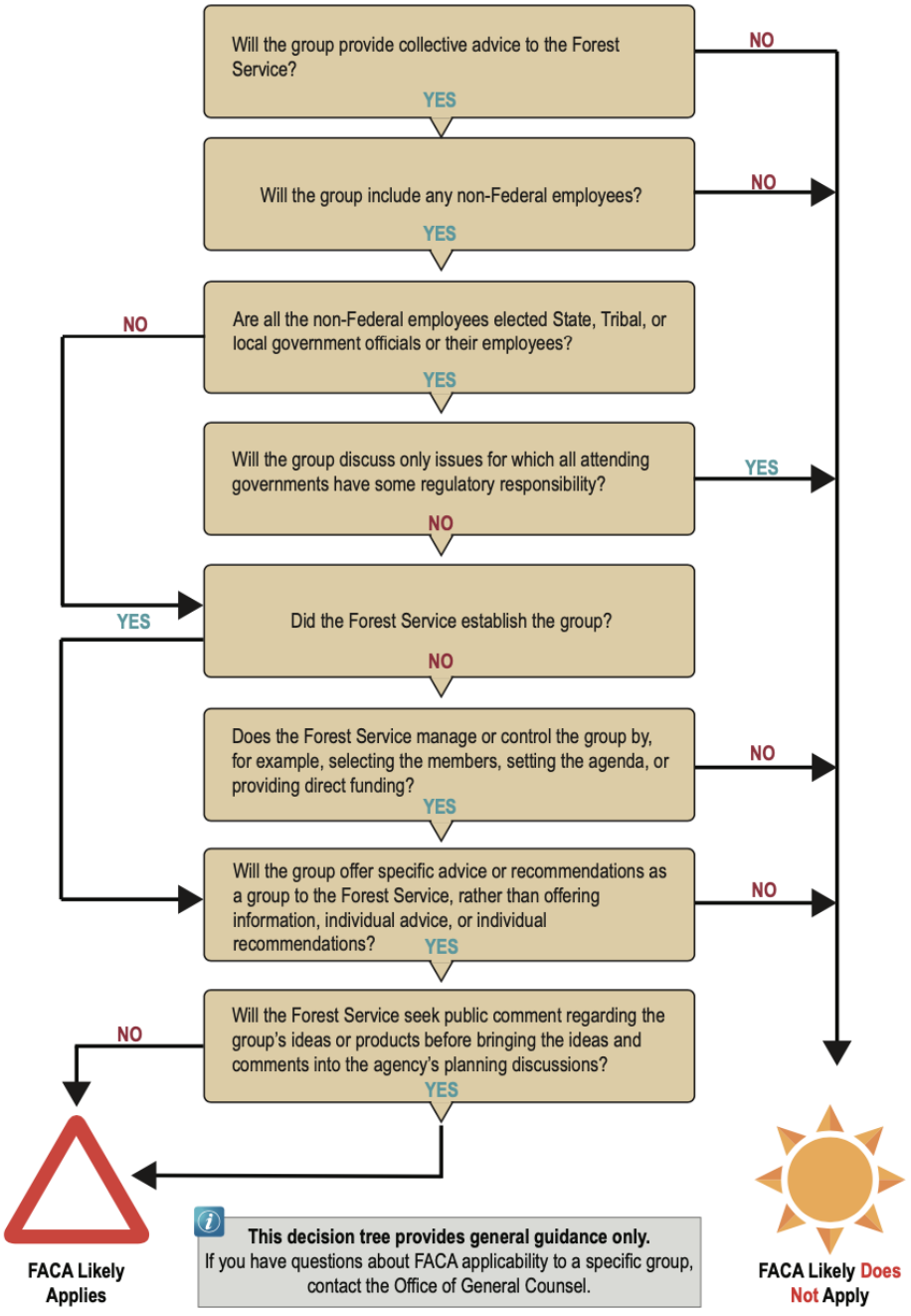
- "A Federal agency must comply with FACA when it (1) establishes, utilizes,* controls, or manages (2) a group with non-Federal members† that (3) provides the agency with consensus advice or recommendations.
- Only groups that meet all three of these legal elements are subject to FACA.
- A definitive determination about whether FACA applies to a particular group is a fact-specific inquiry that generally requires consultation with the Office of General Counsel.

** Under FACA, the term "utilize" does not have its ordinary meaning. Instead, FACA's regulations provide that an agency "utilizes" a group only when it exercises actual management or control over a group's operations (41 CFR §102-3.25)."*[97]

While the land manager may want to play it safe and avoid the possibility of violating FACA, the Access Fund notes that "it is possible to establish an informal working group without conflicting with the Federal Advisory Committee Act of 1972"[98]. A climbing working group can help with not only the development of a CMP but also "help management respond to specific climbing issues such as fixed anchors, developing outreach strategies, and focusing volunteer assistance"[99].

[96] USDA Forest Service, 2018, 16
[97] USDA Forest Service, 2018, 16
[98] Access Fund, 2008, 57
[99] Access Fund, 2008, 57

The FACA flowchart[100] below can help determine whether FACA will apply:



[100] USDA Forest Service, 2018, 17

Considering Conflict

The presence, absence, or potential for conflict should be considered at the outset. Both the Bighorn National Forest and Bitterroot National Forest started developing Climbing Management Plans around the same time in 2020. Both National Forests were dealing with conflicts over climbing use. However, the two conflicts were different. A brief summary and consideration of the two conflicts may help managers plan for or deal with their own conflicts.

The Bitterroot National Forest conflict centered around a particular climbing area that had been developed over the years without the knowledge of land managers. The conflict was unique in that it involved intercommunity conflict between climbers and the members of a local Friends group. The conflict had been brewing for many years and involved both sides claiming "vandalism" with non-climbers seeing the development of routes with fixed anchors in a Recommended Wilderness as "vandalism" threatening the Wilderness character of the area and the climbers seeing the destruction/damage of bolts and closing of approach trails in the area as "vandalism" that compromised the safety of climbs, leading some to even see the "vandalism" as "terrorism" because of the possibility of these actions resulting in bodily harm or death.

The Bighorn National Forest conflict centered around climbing issues happening in Ten Sleep Canyon. The conflict there was largely an intracommunity conflict that arose when differing climbing and route development norms led to disagreements that resulted in actions to stop certain types of development from happening in the canyon. This conflict highlights a nuanced aspect of route development where the distinction between "comfortizing" and "cleaning" of holds on the one hand and outright "manufacturing" of holds on the other has critical implications for local climbing norms, social sanctioning, and land managers.

These two conflicts highlight the importance of local context and the potential power of a stakeholder analysis in determining process design. Climbing on the Bitterroot National Forest is largely a local phenomenon as the quality of climbing opportunities do not currently attract destination climbers. These statements are supported by a climber survey that was conducted by The University of Montana in collaboration with the local climbing organization (LCO), Western Montana Climbing Coalition (WMTCC), to provide information to local land managers [101]. In contrast, the climbing opportunities at Ten Sleep are high quality and attract climbers from afar. As such, the quantity and quality of the climbing use is different, as well as the opportunities for engaging the stakeholders on these National Forests.

There is also the issue of potential conflict to consider. Just because the process begins in the absence of conflict does not mean that conflict will not arise. Forecasting future conflicts can be difficult, but planning for conflict by considering conflict resolution strategies can help make planning and decision-making processes run more smoothly and make the implementation phase more effective.

[101] Western Montana Climbers Coalition, 2021

Trust

While trust seems like a simple and obvious component for success, thinking about its complexity can be beneficial for land managers. One of the worrying trends in American society is a growing distrust of government generally. This does not mean that the distrust necessarily extends to the government staff members or their efforts/initiatives. I recommend thinking about three interrelated categories of trust: 1) Abstract (Government/Forest Service), 2) Personal (Staff/Individuals), and 3) Process. The land manager may not be able to do much about a person or group's distrust at the abstract level, but they can build and maintain trust at the personal and process levels. There may be high levels of trust in individual staff but the process may engender distrust for many reasons: bad design, no results/progress, poor communication, not inclusive, unprofessional, etc.. For individuals who distrust the government at the abstract level, the directives that initiate the process may be deeply distrusted. In order to keep the general distrust of the government from latching onto the process, the land manager should take ownership of the process, tailor it to the local context, and share the ownership of the process to the extent appropriate.

If a collaborative process is pursued, establishing and maintaining trust is crucial because "trust serves as a vital lubricant to collaborative processes, supporting more effective group process and performance as well as effective communication"[102]. For the land manager this can be a difficult challenge; as the old adage goes, trust takes years to build, seconds to lose, and forever to rebuild. As mentioned before, it may be helpful for the land manager to think of the multi-scalar and interrelated trust of 1) the government and/or Forest Service, 2) the land manager (and staff), and 3) the process.

One of the major challenges for establishing trust and working relationships with the Forest Service is staff attrition. As Forest Service employees come and go, processes can be greatly affected. Having conversations with staff members regarding their commitment to seeing a process through will help determine what roles are appropriate for individual staff members (i.e. leader, partner, stakeholder). Losing a staff member acting in the process leader or partner roles halfway through a process could result in significant delays and potentially force a full restart.

Another aspect of trust that needs to be considered and has been mentioned previously is the trust among parties and individuals to be involved in the process. The Council on Environmental Quality acknowledges that the chances of success in a collaborative process are greatly reduced if there are high levels of distrust among parties and notes that "distrust can stem from a personality conflict between specific individuals to fundamentally opposed aims of different organizations"[103]. Doing a Stakeholder Assessment and/or Situation Analysis can help inform the land manager and lead to a process that fits the context. Initiating a collaborative process that reveals deep distrust can reflect poorly on the agency/land manager and result in less than successful decision making, communication, and ultimately implementation.

[102] Stern and Coleman, 2015, 121
[103] Council on Environmental Quality, 2007, 9

Regardless of the process, trust will also have implications for the implementation phase. Stern and Coleman conducted a study and found that "trust in protected areas authorities proved to be a key predictor of compliance with park regulations, with distrust predicting noncompliance"[104].

Distrust should be expected. Effective, consistent, and transparent communication will be necessary for establishing and maintaining trust.

The initial approach taken by the Bighorn National Forest to create their best practices document mentioned in the section "NEPA strategies" is commendable for many reasons related to trust. The first and most obvious is that it explicitly lays out expectations for everyone involved, not just climbers. By including best practices for land managers, climbers, and climbing organizations, the collaborative effort resulted in a common document to set the stage for the process going forward while also providing direction for climbers while the CMPs are being developed. As a first step in the process, the best practices document is evidence that the effort and time put into the process are producing results. Collaborative processes take significant amounts of time and effort. Designing processes that produce results will show that the contributions being made are worthwhile. The best practices document was a fairly simple low stakes product that functions as a proof of concept for collaborative effort. By laying out specific best practices all parties have created an opportunity for developing trusting relationships. Trust will be established to the degree to which actions correspond with the best practices outlined.

[104] Stern and Coleman, 2015, 117-8

Doing What We Say

Having highlighted the importance of trust in the design, development, and implementation stages of a CMP, let's now consider how communication may affect the perception of the process and thereby influence the outcomes. In professional environments there is a tendency for communication to incorporate the "buzzwords" of the day. These buzzwords often end up losing their initial precision as a result of overuse and misapplication. As a government agency, it is crucial for communication to be clear and action to correspond with what has been communicated. Put simply, "doing what we say" is a strategy towards developing trust, partnerships, and legitimacy in the eyes of the public. The Council for Environmental Quality warns that "the mistrust created by promising collaboration and only delivering information, for example, can ruin an agency's relationships with parties and potentially undermine the agency's credibility"[105]. In this section, "collaboration", "adaptive management", and "collaborative adaptive management" are defined and considered in regards to process design.

Collaboration

The 2012 Planning Rule defines collaboration as "a structured manner in which a collection of people with diverse interests share knowledge, ideas, and resources while working together in an inclusive and cooperative manner toward a common purpose"[106].

The USDA Forest Service National Collaboration Cadre advises that "prior to engaging in collaboration, it is important to determine the ***collaborative potential***, which can be looked at as the prospects for parties to work together in earnest to make meaningful progress in the management of complex and potentially conflict-laden situations"[107]. In order to determine the collaborative potential, the Cadre identifies three factors to consider:

> **"1. The extent to which the situation is complex and/ or controversial, and the effectiveness of possible management actions is uncertain. Complex and controversial situations typically involve a wide range of interests and issues.**
>
> **2. There is a possibility for meaningful, respectful communication and interaction between the stakeholders.**
>
> **3. A mutual gain or integrative outcome is possible, in that the fundamental structure of the situation offers the potential for both or all sides to achieve more of their objectives than could be likely in some other process, such as legal action."[108]**

Collaboration is characterized by cooperation based on interests and is opposed to negotiation which is more adversarial and based on positions. The shift to collaborative behavior "may represent a paradigm shift within an agency and/or externally with a community of diverse interests, all of whom may be more familiar with more competitive or adversarial tactics to

[105] Council on Environmental Quality, 2007, 12
[106] Forest Service, USDA, § 219.19, 71-72
[107] USDA Forest Service National Collaboration Cadre, 2021, 3
[108] USDA Forest Service National Collaboration Cadre, 2021, 3

influence agency decision making"[109]. At the outset of a collaborative process participants should discuss and agree on collaborative principles, behaviors, and expectations. Making a clear distinction between interest-based and position-based strategies for communication can help set a collaborative effort on the right track.

Adaptive Management

"An adaptive approach involves exploring alternative ways to meet management objectives, predicting the outcomes of alternatives based on the current state of knowledge, implementing one or more of these alternatives, monitoring to learn about the impacts of management actions, and then using the results to update knowledge and adjust management actions. Adaptive management focuses on learning and adapting, through partnerships of managers, scientists, and other stakeholders who learn together how to create and maintain sustainable resource systems"[110].

Building adaptive management into the process entails identifying alternative solutions rather than just deciding which solution is the best. The objectives should be explicit and trigger points established for considering the implementation of the alternatives identified in the process. For instance, on the Bitterroot National Forest there had been a history of seasonal raptor closures that had been working effectively. The Western Montana Climbing Coalition had assisted the BNF in communicating these closures. When the collaborative meetings turned to the topic of raptor management, a vocal contingent advocated for increasing the closure areas for peregrine falcons and golden eagles, which was opposed by the climbing community. This put the BNF staff in an awkward position as Dave Lockman, the Wildlife Biologist, was advocating for keeping the current seasonal closures in place. However, the BNF proposed an adaptive management approach where closure areas for golden eagles were increased and peregrine falcon closure areas remained the same. In the adaptive management approach, the discussion is not simply about what goes into the Climbing Management Plan, but identifying alternatives, establishing measurable objectives, creating a monitoring plan, and agreeing on a trigger point for considering the alternatives. Obviously, this approach is more time intensive, but it has many benefits both within the collaborative process and during plan implementation. The BNF's recommendations for climbing management as it pertains to golden eagles explicitly reference adaptive management, address monitoring and education, and acknowledge past and future working partnerships (with interested groups and the local climbing organization):

"1. Implement seasonal closures for rock climbing and other potentially disturbing activities within an 800 meter buffer centered on known golden eagle nests in Bitterroot canyons that are in the vicinity of known climbing routes or other disturbing activities.

2. Closures will begin on February 1 each year and will continue until the affected nests are determined to be inactive, or if active, until after any young have fledged.

3. The 800 meter buffer can be modified using the adaptive management concepts of viewsheds (Camp et al. 1997) and prior experience with the effects of recreational activities to individual nests. This recognizes the concepts that physiographic features may limit potential disturbance to individual nests, that individual

[109] USDA Forest Service National Collaboration Cadre, 2021, 2-3
[110] Williams et al., 2009, 1

eagles have different tolerance levels for disturbance, and that some can become habituated to and accept at least some forms of disturbance over time.

4. The BNF will work with interested groups to alert the climbing community and the general public to the presence of closures and buffers around golden eagle nests, and request that climbers and other recreationists avoid these buffers around active nests until the young have fledged. This procedure has worked well in the recent past when the BNF has contacted the Western Montana Climbers' Coalition to request postings of alerts on websites and social media relevant to climbers. The BNF will continue to post alerts on the Forest website and distribute press releases to increase public awareness of such closures."[111]

One of the main benefits for the collaborative process is that the adaptive management approach reduces the stakes by allowing stakeholders to see that there are no absolute winners and losers in the process. By identifying alternatives that may be implemented if the selected option does not meet objectives in the implementation phase, stakeholders will feel heard, their fears will be addressed, and the decisions reached will not feel as final. The Climbing Management Plan is not the end because Climbing Management is an ongoing process that will change as the contexts change.

During the implementation phase, the adaptive management approach provides benefits by giving clear objectives to be monitored with trigger points already established for instituting alternative management policies. If the process simply chooses the best option and does not consider alternatives thoroughly nor establish clear trigger points, the recreation manager might find themselves dealing with conflicts regarding whether the implementation of the CMP is working effectively or not. Going back to the example of raptor management, what impacts are to be avoided? The three A framework for raptor monitoring is "aware, alert, and abandon". Is the objective to prevent nest abandonment or is the objective to completely remove the human element? If the current seasonal closures have not resulted in any documented nest abandonment, why would the CMP adopt a more restrictive closure area? Of course, nest abandonment is to be avoided, but what amount of risk is reasonable? When considering monitoring, abandonment seems to be a reasonable measure for establishing a trigger point. Monitoring alertness or awareness would be much more difficult and potentially lead to conflict as it is more qualitative and would require more intensive monitoring and be more challenging to document.

One of the main challenges for adaptive management are the resource demands required for monitoring. Partnerships can create excellent opportunities to solve these resource constraints. However, without a time-tested partnership and established working relationship, adopting an adaptive management strategy might leave the recreation manager in a difficult position where limited resources would have to be shifted to monitoring or the adaptive management approach abandoned altogether. Again, trust is important here. If the monitoring is being done by individuals or groups that are not trusted by the climbing community, then the shift to alternative options might not be seen as legitimate and therefore ignored in favor of the previous policies at best or general noncompliance at worst.

[111] "Developing A Climbing Management Plan" Bitterroot National Forest. Accessed on Jan. 14 2022

Collaborative Adaptive Management

The Collaborative Adaptive Management Network defines collaborative adaptive management as:

> " a systematic management paradigm that assumes natural resource management policies and actions are not static, but are adjusted based on the combination of new scientific and socioeconomic information. Management is improved through learning from actions taken on the ecosystem being affected. A collaborative adaptive management approach incorporates and links knowledge and credible science with the experience and values of stakeholders and managers for more effective management decision-making"[112].

Given the dynamism and uncertainties involved in climbing and resource management, a commitment to a collaborative adaptive management approach is preferable. The development of a collaborative adaptive management model can "enhance knowledge in a context of stakeholder and decision-maker disagreements and scientific uncertainties" while allowing the process to "help set goals, select action options, and develop new information on the effectiveness of actions"[113]. Scarlett notes that "incorporating collaboration into adaptive management processes is, in part, motivated by attempts to enhance the credibility, relevance, and legitimacy of information used to inform decisions"[114].

According to Susskind et al. the four process-related requirements for collaborative adaptive management are "establishment of clear goals and objectives; mechanisms for promoting participation; clear roles and processes for shared learning; and the dynamic management of the adaptive management programs themselves"[115].

[112] Scarlett, 2013, 3 citing "Sims and Pratt Miles 2011"
[113] Scarlett, 2013, 3
[114] Scarlett, 2013, 6
[115] Scarlett, 2013, 7 citing "Susskind et al. (2012)"

Supplemental Material

This part of the handbook contains supplemental material that is provided to give land managers additional resources to assist them as they navigate climbing management initiatives.

Examples from Climbing Management Plans

The following section provides excerpts from Climbing Management Plans organized by topic and contains some questions to consider.

Development of Climbing Routes/Areas

What kind of process should route developers go through **prior to development**, if any?

Application for review (by agency or climbing group or both?)?
Application for permit to develop routes (case by case, or blanket)?
Discussion with agency and/or LCO?
No process, programmatic authorizations/prohibitions for particular areas?

What kind of process should route developers go through **after development**, if any?

Informing agency, climbing group, or both, of routes developed?

"Strongly recommended that climbers discuss plans with park staff prior to development. Climbers note location of intended new route in comment section of wilderness permit. Climbers submit topo and/or route description of new route to park within 30 days of completion. If 1st ascensionist feel additional fixed anchors are needed after completion, they submit a written description of proposed new fixed anchor. After review, park staff approve or deny request."[116]

- Black Canyon of the Gunnison (NPS) Wilderness

"NPS Director's Order #41 (DO #41) establishes that 'Authorization will be required for the placement of new fixed anchors or fixed equipment. Authorization may be required for the replacement or removal of existing fixed anchors or fixed equipment. The authorization process to be followed will be established at the park level and will be based on a consideration of resource issues (including the wilderness resource) and recreation opportunities. Authorization may be issued programmatically within the Wilderness Stewardship Plan or other activity-level plan, or specifically on a case-by-case basis, such as through a permit system.' And 'If unacceptable impacts are occurring in wilderness as a result of climbing, the park superintendent may deem it necessary to restrict or prohibit the placement of fixed anchors.'"[117]

- Sequoia and Kings Canyon (NPS) Wilderness

"If considering establishing a new route, climbers are encouraged to ask,
'Is the route worth the damage it will cause?'
'Is it a classic line that others will enjoy climbing, or am I simply interested in putting up my own route?'
'What will climbers fifty years from now think of this route or this bolt?'"[118]

- Yosemite (NPS)

[116] Black Canyon of the Gunnison National Park, 2011, 5
[117] Sequoia and Kings Canyon National Parks, 2015, J-7
[118] Yosemite National Park, https://www.nps.gov/yose/planyourvisit/climbing_regulations.htm

"The placement, removal, or replacement of fixed anchors, including bolts, coldshuts, and chains is not permitted without prior approval of the Department."[119]

- Pennsylvania State Lands

"The Forest Service will allow new fixed climbing protection on the remainder of the crags. The Forest Service will permit responsible new route development on currently undeveloped rock formations. Climbers must make every effort to minimize climbing impacts to natural resources as new routes are developed. Climbers should carefully consider whether the value of a new route justifies its impact to the natural environment. The Forest Service and the local climbing community will monitor the status of new route development at Rumney Rocks. If at a future date the Forest Service determines that additional crags have reached their carrying capacity, they will be closed to the development of new routes requiring fixed protection. The Forest Service will look to the RCA and other partners to educate the climbing public regarding the policies of new route development and prohibitions at certain crags."[120]

- Rumney Rocks (USFS)

Fixed Hardware Review Committee or Meeting

"IV. Consider formation of a fixed hardware review committee to address concerns about bolting in the area. Consider requiring all new fixed anchors to be reviewed and approved by the committee."[121]

- South Platte Area (USFS)

" Annual Meeting. The Forest Service will remain in close communication with the RCA and the local community in managing this very unique resource. The Forest Service will determine and coordinate open public meetings in partnership with the RCA when appropriate. Public meetings shall include discussion of current management, strategy and concerns from involved parties, recommendations for adaptation or change and resource monitoring results. This Management Plan may be amended or revised based on new information, monitoring results, or other conclusions drawn from this meeting or based on conclusions by Forest Service staff."[122]

- Rumney Rocks (USFS)

Convenience Bolting

How is this defined? Who will adjudicate?

"Permanent fixed anchors should not be placed merely for convenience or to make an otherwise un-climbable route climbable."[123][124]

[119] Pennsylvania Department of Conservation and Natural Resources, 2008, 2
[120] White Mountain National Forest, 2015, 4
[121] Pike National Forest, 2015, 11
[122] White Mountain National Forest, 2015, 7
[123] Sequoia and Kings Canyon National Parks, 2015, J-7
[124] Rocky Mountain National Park, 2001, 3

- Sequoia and Kings Canyon (NPS) Wilderness
- Rocky Mountain (NPS) Wilderness

"The following conditions have been established regarding Fixed Anchors:
- The placement of new fixed anchors requiring rock alteration for installation will be prohibited when the ability to place removable protection is available."[125]

- Shenandoah (NPS)

Camouflaging Anchors
If anchors are installed, should they be camouflaged? In what way?

Use "hardware which has been painted a color similar to the natural rock color in the surrounding area"[126]

- Shenandoah (NPS)

Management of Routes
Is approval needed to remove, replace, or add additional fixed anchors?
If safety issues arise, what should be done?

"DPR will not install or replace fixed anchors. Instead, all anchor installation and replacement efforts will be conducted on a volunteer basis by members of the climbing community. Park staff may provide logistical coordination of anchor installation and replacement efforts.
The replacement of fixed anchors on established routes or belay stations will be allowed whenever climbers notify park staff that existing fixed anchors are unsafe. Upon notification, park staff will immediately post information at climbing information kiosks, permit kiosks, and park offices advising climbers that suspect anchors may be present on a specific route. The route in question may remain closed until repairs are made."[127]

- North Carolina State Parks

"If loose of precariously situated rock is found along or near a climbing route or area, climbers should immediately report this safety issue to LSP management and/or staff, and should not climb in the location until the rock is inspected and removed, or the area is permanently closed for safety concerns. Likewise, if a climber finds that existing FH is insecure or unsafe, then LSP management and/or staff should be immediately notified. In either instance, ARCC will be notified for inspection and needed maintenance. Once LSP is notified of a safety issue, the route and/or area will be closed to climbing until a remedy is proposed and action taken to rectify the safety concern."[128]

- Lory State Park, Colorado

"Fixed anchors (e.g., webbing, bolts, pitons, chains) currently in place may remain. They may be replaced, or removed, by individual climbers, during a climb, or the NPS, during park operations.

[125] Shenandoah National Park, 2012, 156
[126] Shenandoah National Park, 2012, 156
[127] North Carolina Department of Natural and Cultural Resources, 2019, 7-8
[128] Lory State Park, 2011, 8

Safety remains a responsibility of the climber. The NPS will not, as policy or practice, monitor fixed anchors to evaluate their condition or accept any responsibility for fixed anchors."[129]

- Rocky Mountain (NPS) Wilderness

"Permanent fixed-anchors (e.g., bolts or pitons), may be placed, or replaced by individual climbers only with prior approval (see permit system below) or in the rare case of emergency. Existing bolts may be removed by individual climbers, without prior permission, if they are deemed unusable or unsafe. The climber should then communicate details of the removal to the parks (through the Chief Ranger's Office)."[130]

- Sequoia and Kings Canyon (NPS) Wilderness

"When replacing unsafe fixed anchors, recommended hardware will be used whenever possible. A reasonable effort to remove the existing, unsafe hardware will be made and existing drill holes will be used in the installation of replacement fixed anchors whenever possible."[131]

- South Platte Area (USFS)

"Climbers must replace unsafe bolts, fixed protection and anchor systems according to Forest Plan guidelines: a) Best practice bolt replacement techniques and anchor replacement materials will be used at all times. Ring hangers or acceptable industry standards should be used for rappel stations. Webbing should not be used on bolt anchors. b) Replacement bolts should use existing holes when possible and bolt holes should be filled and camouflaged. c) Guidelines for continued maintenance on bolts and anchor systems can be referenced on the Access Fund and American Safe Climber Association web pages."[132]

- Rumney Rocks (USFS)

Tree Protection

"If a tree must be used for climbing purposes, padding must be used to prevent the rope, sling or chain from damaging the tree."[133]

- Pennsylvania State Lands

"The use of trees as anchors shall be prohibited if such use causes interference with any park-maintained trail. Interference includes any rope or webbing that extends across a park trail, whether elevated off the ground or not. The anchor must be made in such a way as to avoid all physical damage to trees and plants, such as damage to bark or lichen growth and the removal of any branches."[134]

- Shenandoah (NPS)

Fixed Belay/Rappel Stations

What conditions warrant a permanent installation?

[129] Rocky Mountain National Park, 2001, 3-4
[130] Sequoia and Kings Canyon National Parks, 2015, J-7
[131] Pike National Forest, 2015, 6
[132] White Mountain National Forest, 2015, 4
[133] Pennsylvania Department of Conservation and Natural Resources, 2008, 2
[134] Shenandoah National Park, 2012, 156

"The placement of new fixed belay/rappel stations will not be allowed when the ability to place adequate removable protection is available. However, a special exception to this regulation will be considered if justified after evaluating overall climber use and safety concerns at the site proposed for fixed anchor(s). To be approved for a special exception to this regulation, climbers will notify park staff of the site of the proposed fixed anchors (requiring rock alteration for installation) and a written statement as to why they feel that this site warrants fixed anchors (requiring rock alteration for installation)."[135]

- Black Canyon of the Gunnison (NPS) Wilderness

"The following conditions have been established regarding Fixed Belay/Rappel Stations:
- The placement of new fixed belay/rappel stations will be prohibited when the ability to place adequate removable protection is available.
- New fixed belay/rappel stations shall not be installed where their presence would visually impact the park (ie – within view of an overlook or trail).
- New fixed belay/rappel stations shall be constructed with modern climbing bolts or pitons.
- Bolt placement shall be kept to a minimum and shall not exceed three bolts.
- Chains used in the construction of the station shall be kept to a minimal length to avoid visual impacts.
- The use of webbing and accessory cord fixed stations is prohibited.
- Belay/rappel stations shall be constructed using hardware which has been painted a color similar to the natural rock color in the surrounding area."[136]

- Shenandoah (NPS)

Monitoring

"Monitoring use levels and changes at Rumney Rocks. If monitoring results or communication with the climbing community concludes that increased use levels at Rumney Rocks are altering the desired condition of the land beyond acceptable levels, the Forest Service will evaluate and implement methods for limiting use. This process of evaluation would involve the climbing community, cooperators, and the general public. Parking lot use and overflow, impacts to trails and staging areas, impacts to biological communities, and social impacts will all be used to assess use levels at Rumney and their effects to the natural and social environment"[137]

- Rumney Rocks (USFS)

Trails and Staging Areas

"To ensure future access to climbers, safety and comfort for other park users, and to lessen land impacts, it is imperative that climbers use the established trails and access points. . . and do not expand the staging areas at the base of climbs."[138]

- Lory State Park, Colorado

[135] Black Canyon of the Gunnison National Park, 2011, 3
[136] Shenandoah National Park, 2012, 156
[137] White Mountain National Forest, 2015, 7
[138] Lory State Park, 2011, 8

"The intentional development of approach trails is prohibited. Climbers will use Leave No Trace practices and take every precaution available to ensure that the wilderness area remains in a natural state."[139]

- Black Canyon of the Gunnison (NPS) Wilderness

"Access trails to the base of well-known and heavily used climbing routes will be identified, delineated, hardened and maintained in order to prevent further erosion problems, loss of vegetation and to establish a pattern of use. In certain instances, signs may be placed to direct climbers away from problem or sensitive areas in order to protect resources. Social trails that have developed over long periods of time, but currently see infrequent use, will be rehabilitated to discourage future travel. Travel in high use areas (e.g., Lumpy Ridge, Management Class 4) will be on established access trails and corridors. Dispersed travel to the base of climbs will be encouraged in climbing areas where access trails are not provided."[140]

- Rocky Mountain (NPS) Wilderness

"When informal approach trails to the base of heavily used climbing routes are identified, climbers and the parks' management will increase education efforts to discourage / disperse use in order to establish a sustainable pattern of use. In rare occasions, signs may be placed to direct climbers away from problem or sensitive areas in order to protect resources (after conduct of a minimum requirement analysis). Informal trails associated with climbing routes will be managed according to the guidelines in the Trail Management and Classification System (see appendix K). Dispersed travel to the base of climbs may be encouraged in specific cases."[141]

- Sequoia and Kings Canyon (NPS) Wilderness

"The intentional construction of access trails or staging areas is prohibited except as follows:
I. Construction (e.g. improvements, structures, tool work) of new approach/descent trails or staging areas is not allowed under land management regulations without prior approval by the proper land management agency.
II. New trails/staging areas may only be constructed after; identification, assessment, design, and environmental analysis are completed through the proper land management agency approval process.
III. Improvement of existing approach/descent trails and staging areas:
a. After prior agency approval, access trails and staging areas of well-known and more heavily used climbing routes may be identified, delineated, hardened and maintained in order to prevent further erosion problems, loss of vegetation, and to establish a durable, sustainable, and safe pattern of use. In certain instances, signs may be placed to direct climbers away from problem or sensitive areas in order to protect resources. Extraneous user created paths that have developed over long periods of time, or currently see infrequent use, may be rehabilitated to discourage or prevent future travel. Travel in higher use areas should be on established access trails and corridors.
b. Dispersed travel to and from the base of climbs, and during descent, is generally encouraged in lower use climbing areas where established access trails do not exist."[142]

- South Platte (USFS)

[139] Black Canyon of the Gunnison National Park, 2011, 5
[140] Rocky Mountain National Park, 2001, 2
[141] Sequoia and Kings Canyon National Parks, 2015, J-5
[142] Pike National Forest, 2015, 5

Resources for Consideration

Documentaries

"Valley Uprising" (2014) – history of climbing in Yosemite Valley highlighting the evolution of the sport

"Dirtbag: The Legend of Fred Beckey" (2017) – focuses on the controversial and influential Fred Beckey

"Free Solo" (2018) – chronicles professional rock climber Alex Honnold's groundbreaking free solo climb on El Capitan in Yosemite National Park

"The Alpinist" (2021) – chronicles the ascents of Canadian rock climber and alpinist Marc-André Leclerc

"In the Light of Reverence" (2001) – part of the documentary focuses on the controversy surrounding the NPS instituting a voluntary June closure for climbing at Devils Tower out of respect for the Lakota Sioux

Fixed-Anchor Best Practices

Access Fund – "Best Practices for Bolt Placement"

Raptors

Access Fund's "Climbing and Raptors: A Handbook for Adaptive Raptor Management"

Climbing Management

Access Fund's "Climbing Management: A Guide to Climbing Issues and the Development of a Climbing Management Plan"

Collaboration

USDA Forest Service National Collaboration Cadre website for Collaborative Planning: https://www.fs.fed.us/emc/nfma/collaborative_processes/default.htm

JEDI/DEI Resources

American Alpine Club – "DEI Resources"

Glossary of Climbing Terms[143]

active protection: equipment with moving parts that can be placed in and removed from crack systems, used to shorten the distance of a fall

aid climbing: climbing using protection as the means of ascent (as opposed to free climbing)

anchor: a site where climbers secure themselves at the top or bottom of a pitch, usually made up of several pieces of removable or fixed protection

belay: to protect a lead climber by feeding out rope and arresting falls; also, the site from which a person belays

belay plate: a friction device designed to arrest a falling climber and to slow the descent on a rappel. Also called a belay device

beta: information about a particular route

bolt chopping: the act of removing a bolt without permission, often without repairing the site from which the bolt was removed

bouldering: unroped, gymnastic form of climbing

cam: a spring-loaded camming device (SLCD) placed in a crack to shorten the distance of a fall

crag: a climbing area

crux: the most physically or mentally difficult part of a climb

exposure: a sense of the distance between the climber and the ground; a feeling that one is up very high

first ascent: the first time a route is climbed. Also called an FA.

first ascentionist: the first person to climb a route; this person also names the route and suggests a grade for it

fisherman's knot: a knot used to tie two ropes together with minimal slippage or to back up another knot; sometimes called a barrel knot

fixed protection: equipment permanently placed in rock to shorten the distance of a fall or provide a belay or rappel anchor

free climbing: climbing using natural features of the rock as the means of ascent

[143] Thompson, 2010, 140-143

Glossary of Climbing Terms[144] (cont.)

free solo: to climb alone, without protection

gear: see removable protection

grade: the subjective difficulty rating of a route, on a scale between 5.0 – 5.9, then broken down to 5.10a - .5.10d, 5.11a – 5.11d, and so on to 5.15. Grades differ between crags because of their subjective nature.

groundfall: a fall resulting in a landing

hangdog: to hang repeatedly during the ascent of a route in order to learn a particular sequence of moves

headpointing: rehearsing a difficult route on toprope until a climber can do all of the moves in sequence, then climbing it on lead

hex: a hexagonally-shaped wedge placed in a crack to shorten the distance of a fall

lead climbing: climbing from the ground up, placing protection as the climber ascends

multipitch: more than one rope length

nut: a metal wedge placed in a crack to shorten the distance of a fall

objective hazards: hazards that a climber cannot control, generally natural processes

onsight: to climb a route with no prior information about that route

passive protection: equipment without moving parts that can be placed in and removed from crack systems, used to shorten the distance of a fall

pinkpointing: redpointing a route with preplaced gear

pitch: approximately one rope length

piton: removable protection hammered into and out of cracks

pro: protection

rap bolting: placing bolts on rappel (as opposed to on lead)

rappel: to slide down a rope, usually to return to the ground after a climb is completed. Also called a rap.

[144] Thompson, 2010, 140-143

Glossary of Climbing Terms[145] (cont.)

rappel station: a set of anchors dedicated to rappelling only. Also called a rap station

redpointing: climbing a route with no falls from start to finish after more than one try, usually by rehearsing the moves on lead

removable protection: climbing equipment that can be placed in and removed from crack systems, used to shorten the distance of a fall. See also: nut, cam, hex, tricam

retrobolting: placing bolts after the first ascent, retroactively

routefinding: the ability to determine where a route goes

send: ascend, ascent

shuts: a type of bolts used for fixed anchors

splitter: cracks that are the same width from top to bottom

sport climbing: climbing that involves clipping fixed protection to shorten the distance of a fall

subjective hazards: potential hazards that a climber can control

toprope: a configuration in which the climbing rope passes through a set of anchors and down to the individual climbing, lessening the risk involved in the climb in question. Sometimes called a slingshot belay.

traditional climbing: climbing that involves the placement of removable protection to shorten the distance of a fall. Also called trad climbing.

tricam: a piece of climbing protection that can be used passively or actively depending on the direction in which it is placed in the crack

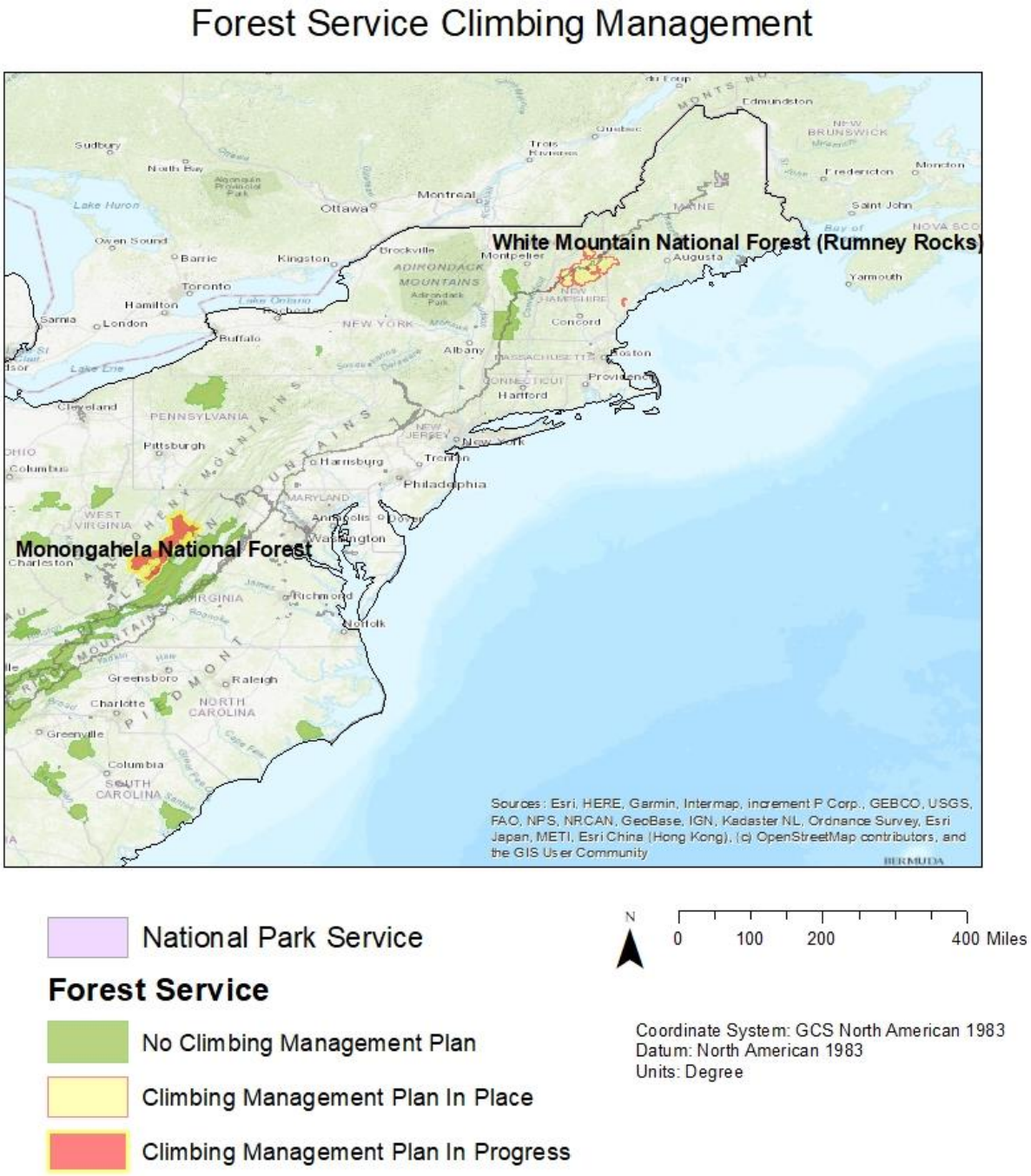
water knot: a knot used to tie two pieces or ends of tubular webbing together with minimal slippage

[145] Thompson, 2010, 140-143

Map 1: West Coast

Note: Both maps reflect the state of climbing management initiatives as of October 2021.

Map 2: East Coast



Note: Both maps reflect the state of climbing management initiatives as of October 2021.

Works Cited

Access Fund. “Restore Rumney” accessed on April 8, 2022: https://www.accessfund.org/take-action/campaigns/ongoing-campaigns/restore-rumney

Access Fund (2008). “Climbing Management: A Guide to Climbing Issues and the Development of a Climbing Management Plan”. https://d1w9vyym276tvm.cloudfront.net/assets/ClimbingManagementGuide_AccessFund.pdf

Access Fund (2019). “Climbers Restore Washington’s Liberty Bell Spires”. https://www.accessfund.org/news-and-events/news/climbers-restore-washingtons-liberty-bell-spires

Access Fund (2020). "RE: Comments on Proposed Forest-Wide Climbing Management Plan". Email communication to Stevensville District Ranger Steve Brown.

Access Fund (2020). “Access Fund Conservation Team Tackles Dire Issues at Lover’s Leap”. https://www.accessfund.org/news-and-events/news/access-fund-conservation-team-tackles-dire-issues-at-lovers-leap

Access Fund (2022). “Access Fund JEDI Grant Program Now Accepting Applications”. https://www.accessfund.org/news-and-events/news/access-fund-announces-jedi-grant-program-application-period-now-open

American Alpine Club. “DEI Resources”. https://americanalpineclub.org/deiresources

American Alpine Club (2019). “State of Climbing Report” https://aac-publications.s3.amazonaws.com/articles/State_of_Climbing_Report_2019_Web.pdf

Araral, E. (2014). “Ostrom, Hardin and the commons: A critical appreciation and a revisionist view”. *Environmental Science & Policy, 36*, 11-23.

Bighorn National Forest (2020). *Best Practices for Climbing and Climbing Management on the Bighorn National Forest*. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd855358.pdf

Bitterroot National Forest. “Developing a Climbing Management Plan” https://storymaps.arcgis.com/stories/6f18fccfa609409eaee82f39e4f4f4e3 (accessed Nov. 16, 2021)

Black Canyon of the Gunnison National Park (2011). *Interim Climbing Management Plan*. http://westerncooutdoors.com/wp-content/uploads/2018/03/BLCA_climbing_plan.pdf

Bogardus, L., M. (2012). “The Bolt Wars: A Social Worlds Perspective on Rock Climbing and Intragroup Conflict.” *Journal of Contemporary Ethnography*, *41*(3) 283-308. DOI: 10.1 177/0891241611426429

Carter, D., P. (2019) “Institutional enforcement, signaling, and deliberation: Rock climbers attempting to maintain rules and norms through social sanctioning”. *International Journal of the Commons*. Vol 13, no 1 2019, 353-377. DOI: 10.18352/ijc.878

Clark, P., & Hessl, A. (2015). “The effects of rock climbing on cliff-face vegetation”. *Applied Vegetation Science, 18*(4), 705-715.

Cole, D. (2001). “Management Dilemmas that will shape wilderness in the 21st century”. *Journal of Forestry*. Jan. 2001; 99, 1; Agricultural & Environmental Database (page 4-8)

Council on Environmental Quality (2007). “Collaboration in NEPA: A Handbook for NEPA Practitioners”

Covy, N., Benedict, L., & Keeley, W. (2019). "Rock climbing activity and physical habitat attributes impact avian community diversity in cliff environments". *PloS One, 14*(1), E0209557.

"Developing A Climbing Management Plan" Bitterroot National Forest. Story Map accessible at: https://storymaps.arcgis.com/stories/6f18fccfa609409eaee82f39e4f4f4e3

"Different Types of Climbing Activities Explained" BMC https://www.thebmc.co.uk/different-types-of-climbing-explained

Gartner, H. (August 23, 2019). "The Ten Sleep Route Manufacturing Controversy Explained." *Climbing Magazine*

Gunn, R., Goodes, J., Thorn, A., Carlyle, C., & Douglas, L. (2020). "Rock art and rock climbing: An escalating conflict". *Rock Art Research, 37*(1), 82-94.

Haas, G.E., B.L. Driver, P.J. Brown, and R.C. Lucas. 1987. "Wilderness management zoning". *Journal of Forestry* 85:17-21

Haas, J. "Best Practices for Bolt Placement." Access Fund. https://www.accessfund.org/learn/for-advocates/managing-fixed-anchors/best-practices-for-bolt-placement

Hardin, G. (1968). "The Tragedy of the Commons." *Science*. 162.3859. pp. 1243-48

Hardin, G. (1998). "Extensions of 'The Tragedy of the Commons." *Science*. 280.5364. pp. 682-683

Jones, Christopher D., and Steven J. Hollenhorst. (2002) "Toward a Resolution of the Fixed Anchors in Wilderness Debate" International Journal of Wilderness. December 2002. Vol 8, no. 3. Pp. 15-20

Koontz, T.,M., Jager, N.,W., & Newig, J. (2020) "Assessing Collaborative Conservation: A Case Survey of Output, Outcome, and Impact Measures Used in the Empirical Literature", Society & Natural Resources, 33:4, 442-461, DOI: 10.1080/08941920.2019.1583397

Linderman, M. (2011). "On Writing: The 1972 Chouinard Catalog that changed a business – and climbing – forever." *Signal v. Noise*. https://signalvnoise.com/posts/2776-on-writing-the-1972-chouinard-catalog-that-changed-a-business-and-climbing-forever

Lory State Park (2011). *Rock Climbing Management Plan.* https://docs.google.com/document/d/1PVoLUdyoW3dHXlfz95BdmQCRhrD_rpsqj32tC1BdoW8/edit

Maples, J.N., Sharp, R.L., Clark, B.G., Gerlaugh, K. & Gillespie, B. (2017). "Climbing out of Poverty: The Economic Impact of Rock Climbing in and around Eastern Kentucky's Red River Gorge". *Journal of Appalachian Studies, 23*(1), 53-71.

Maples, J., Bradley,M., Giles, S., Leebrick, R. & Clark, B. (2019). "Climbing out of Coal Country: The Economic Impact of Rock Climbing in West Virginia's New River Gorge." *Journal of Appalachian Studies*, 25(2), 184-201.

McIver, C., P., & Becker, D., R. (2021). "An Empirical Evaluation of the Impact of Collaboration on the Pace and Scale of National Forest Management in Idaho." Forest Science. 67(1):49-59. doi: 10.1093/forsci/fxaa040

Mid Atlantic Climbers. (2020). "Series 1 Survey Results - Monongahela National Forest Climbing Management Plan". https://www.midatlanticclimbers.org/wp-content/uploads/2020/10/MNF-Series-1-Survey-Report.pdf

Murdock, E., D. (2010) “Perspectives on Rock Climbing Fixed Anchors Through the Lens of the Wilderness Act: Social, Legal and Environmental Implications at Joshua Tree National Park, California”, Dissertation. University of Arizona.

National Research Council. (2008). *Public Participation in Environmental Assessment and Decision Making*. Panel on Public Participation in Environmental Assessment and Decision Making, Thomas Dietz and Paul C. Stern, eds. Committee on the Human Dimensions of Global Change. Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press.

Nijhuis, M. (2021). “The Miracle of the Commons.” *Aeon Essays*. *https://aeon.co/essays/the-tragedy-of-the-commons-is-a-false-and-dangerous-myth*

Nixon, R. (2012). “Neoliberalism, Genre, and ‘The Tragedy of the Commons’” *PMLA*. 127.3. pp. 593-599

North Carolina Department of Natural and Cultural Resources (2019). *Rock Climbing Management Guidelines*. https://files.nc.gov/ncparks/north-carolina-state-parks-rock-climbing-management-guidelines.pdf

Ostrom, Elinor (1990). *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press.

Pennsylvania Department of Conservation and Natural Resources (2008). *Rock Climbing, Rappelling, and Bouldering Management Policy and Guidelines*. http://c3pa.org/wp-content/uploads/2009/04/dcnr-rock-climbing-rappelling-bouldering-management-policy-guidelines-3-11-09.pdf

Pike National Forest (2015). *South Platte Area Climbing Management Plan*. https://docs.google.com/viewer?a=v&pid=sites&srcid=Y2xpbWJpbmdtYW5hZ2VtZW50Lm9yZ3x3d3d8Z3g6MWZiMDEwMmY5OWNkYTlkZA

Rocky Mountain National Park (2001). *Climbing Management*. https://docs.google.com/a/climbingmanagement.org/viewer?a=v&pid=sites&srcid=Y2xpbWJpbmdtYW5hZ2VtZW50Lm9yZ3x3d3d8Z3g6MjgwYjVkODRkZTA3ZmQwOQ

Rorty, R. (2021). *Pragmatism as Anti-Authoritarianism*. Cambridge, Mass.: The Belknap Press of Harvard University Press.

Scarlett, L. (2013). “Collaborative Adaptive Management: Challenges and Opportunities” *Ecology and Society* **18**(3):26. http://dx.doi.org/10.5751/ES-05762-180326

Sequoia and Kings Canyon National Parks. (2015) “Appendix J: Climbing Management Strategy” in *Sequoia and Kings Canyon National Parks Wilderness Stewardship Plan/FEIS*. *https://parkplanning.nps.gov/showFile.cfm?projectID=33225&MIMEType=application%252Fpdf&filename=WSPFEIS%5FAppendix%5FJ%5FClimbingMgmt%2Epdf&sfid=206380*

Shenandoah National Park (2012). *Rock Outcrop Management Plan*. https://parkplanning.nps.gov/showFile.cfm?projectID=19298&MIMEType=application%252Fpdf&filename=Final%5FSHEN%5FROMP%5FEA%5FAoE%5F%2D%5FPublished%5Ffor%5FPublic%5FReview%5FNov%5F2012%2Epdf&sfid=145762

Stephens, C. (2017). “Logan Canyon Climbing Management Plan for the Uinta-Wasatch-Cache National Forest, Logan Ranger District.” Utah State University.

Stern, M., J. & Coleman, K., J. (2015). "The Multidimensionality of Trust: Applications in Collaborative Natural Resource Management", Society & Natural Resources, 28:2, 117-132, DOI: 10.1080/08941920.2014.945062

Summers, B. (2016). "The Grit Mill Project in Little Cottonwood Canyon". *Utah Adventure Journal*. https://utahadvjournal.com/index.php/the-grit-mill-project-in-little-cottonwood-canyon

"The Ruth Lake Adopt a Crag Experience." (2012) YouTube.com. SLClimbers. https://youtu.be/1Qs1lpn04Bs

Thompson, Katherine A., (2010). "Social Worlds of Rock Climbers at Seneca Rocks, West Virginia" Graduate Theses, Dissertations, and Problem Reports. 3175. https://researchrepository.wvu.edu/etd/3175

Tonto National Forest. "Sustainable Recreation FAQS"

"Types of Climbing" National Park Service. https://www.nps.gov/subjects/climbing/types-of-climbing.htm

USDA Forest Service. 36 CFR Ch. II (7–1–17 Edition) "Part 219 – Planning". https://www.ecfr.gov/current/title-36/chapter-II/part-219

USDA Forest Service. *Forest Service Handbook* (FSH). https://www.fs.fed.us/im/directives/dughtml/fsh1000.html

USDA Forest Service. *Forest Service Manual* (FSM). https://www.fs.fed.us/im/directives/dughtml/fsm.html

USDA Forest Service. *Forest Service Manual* (FSM). Amendment 1000-2007-2**,** 2007, FSM 1000-Organization and Management, Zero Code 1020, WO Amendment to Forest Service Manual

USDA Forest Service. *Forest Service Manual* (FSM). Amendment 1300-2016-1, 2016, FSM Chapter 1390 – Knowledge Sharing and Conservation, 1390.1 Authority

USDA Forest Service (2018). *Public Engagement Reference Guide*. FS-1117

USDA Forest Service (2020). "Memorandum of Understanding Between The Access Fund and The USDA, Forest Service National Headquarters." FS Agreement No. 20-MU-11132424-101 (link: https://d1w9vyym276tvm.cloudfront.net/assets/AF-FS-MOU-2020.pdf)

USDA Forest Service National Collaboration Cadre (2019). *Maintaining the Foundation of Collaborative Groups*. FS-1128

USDA Forest Service National Collaboration Cadre (2021). *Understanding Collaboration*. FS-1166

Western Montana Climbers Coalition (2021). "Survey Summary". https://www.wmtcc.org/_files/ugd/23a6d2_7373214177cc453c9ed30dd6624ac161.pdf

White Mountain National Forest (2015). *Rumney Rocks Climbing Management Plan*. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd510683.pdf

Williams, B.,K., R.C. Szaro, and C.D. Shapiro (2009) “Adaptive Management: The U.S. Department of the Interior Technical Guide” Adaptive Management Working Group, U.S. Department of the Interior, Washington, DC.

World Commission on Environment Development. (1987). *Our common future* (Oxford paperbacks). Oxford ; New York: Oxford University Press.

Yosemite National Park. “Climbing Regulations”. https://www.nps.gov/yose/planyourvisit/climbing_regulations.htm