

*Chapter*

**CLIMBERS FOR BAT CONSERVATION:  
METHODS IN FORMING  
A NOVEL PARTNERSHIP**

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**ABSTRACT**

In recent years, North American bat populations have been presented with new conservation threats including population declines due to wind energy developments, habitat loss, and white-nose syndrome (WNS). Much of this mortality has been documented in the eastern half of North America, however, the impact on bat populations in the western United States is relatively unknown. It is likely that western bats utilize cracks and crevices, an abundant resource in the western United States, to a greater degree for roosting than their eastern counterparts. Unfortunately, the inconspicuousness of crevices and the difficulty of observing small, nocturnal, volant animals make finding bat roosts in cracks and crevices problematic. A possible solution to this problem may exist within a

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particular sub-set of outdoor recreationists. Rock climbers have visited many rock features that are inaccessible or unknown to bat biologists and could be a valuable source of knowledge regarding potential bat roost locations; however, many rock climbers may be apprehensive to share information that could result in the loss of access to a valued recreational resource. As outdoor recreational pursuits continue to overlap with limited and oftentimes sensitive wildlife habitat we are often prompted to look at these interactions as forms of conflict; however, if the right inclusive processes are used, conflict can not only be avoided, but areas of mutual stakeholder benefit can be identified. Therefore, the main goals of this project were to: 1) improve knowledge of bat roost locations; 2) develop relationships among climbing enthusiasts and bat biologists throughout Colorado; and 3) empower climbers as ambassadors for bat conservation. Through the use of World Café facilitated dialogues, social media, and mobile observation recording software (iNaturalist) the researchers were able to build a collaborative network of over 140 rock climbers, land managers, and bat biologists. This collaboration has resulted in the identification of a number of bat roost locations deemed valuable for future study by bat biologists. Through the use of the aforementioned methods, the researchers have developed a potential model for collaboration that can be used throughout the western United States for improving bat conservation.

## INTRODUCTION

In recent years, North American bat populations have been presented with new conservation threats. With the increase in wind energy development has come the understanding that turbine collisions have claimed an estimated 600,000 bats annually (Hayes, 2013). Even more problematic is the emergence of White Nose Syndrome in North America. Starting in 2006, bats began dying due to infection of a cold-adapted fungus and it is estimated that millions of bats are dying annually (Frick et al., 2010). Much of this mortality has been documented in the eastern half of North America with most of the declines documented at large cave- or mine-roosting bat colonies (Lorch et al., 2013). It is unknown how much western bat populations have been impacted. Unlike the East, the West has fewer large bat colonies associated with caves and mines, and it is possible that western bats utilize crevices and cracks to a greater degree. The amount of data documenting crack and crevice (herein simply “crevice”) use by bats is increasing (Lausen & Barclay, 2003; Neubaum, O’Shea, & Wilson, 2006) and, although these resources are valuable, they are inconspicuous on the landscape (Bogan et al., 2003). The

geologic processes that produced the mountain ranges of the West also created an abundance of crevice resources for bats to use. Unfortunately, the inconspicuousness of crevices and the difficulty of observing small, nocturnal, volant animals make finding bat roosts in crevices problematic. Because it is likely that bat populations are declining there is a need to quantify bat population parameters, such as survival, abundance, and persistence. Estimating population dynamics requires knowing where populations are, and for many species, biologists are still identifying important roosts that can be monitored. This is true of bat populations in the West, especially crevice-roosting bats.

There is a natural resource users group that understands the spatial distribution and accessibility of crevices of the West like no other. Rock climbers have visited many rock features that are inaccessible or unknown to bat biologists, and know what areas are used by bats. In addition, there is existing data that climbers have encountered bats on a number of climbs (climbing accounts at [mountainproject.com](http://mountainproject.com)) and there is growing interest in understanding if there are conflicts between climbing and bat conservation (Rolfe & Adams 2014, Loeb & Jodice 2015).

Developing and maintaining a constructive relationship between user groups and bat conservation community can be challenging. Many of the challenges arise when access to recreational resources are jeopardized by conservation measures (Peterson, et al., 2010). These challenges can be seen, for example, in the reaction of the climbing community to the proposed “fixed anchor ban” in the early 1990’s (Baker, 1999). The fact that rock climbing may disturb breeding raptors had been known for quite some time (Olsen & Olsen, 1980), however, little is known about the impact of rock climbing on bat populations. Many climbing areas are seasonally closed to protect breeding raptors, therefore it is likely that rock climbers may fear the same restrictions being imposed due to sensitive bat populations. The relationship can be further strained when assessments of disturbance from climbing may be biased (Kuntz and Larson, 2006). There is growing evidence that climbing does not disrupt bat use patterns or the diversity of bats using an area (Rolfe & Adams 2014, Loeb & Jodice 2015).

Collaboration has become increasingly important in natural resource decision making in order to solve, and in some cases, avoid potential conflict (Daniels & Walker, 2001). The authors of this chapter wanted to develop a relationship with the user group (rock climbers) that allowed them early input on a partnership to facilitate bat conservation. The researchers utilized a new discourse-based approach to engage climbers, discuss benefits and challenges

to collaboration, resolve misconceptions, and creatively find a mutually-beneficial outcome.

The goals of this project were to: (1) acquire information about where crevice roosts are to understand bat roosting ecology; (2) locate crevices with substantial bat populations as potential population-monitoring locations; (3) develop a mutually-beneficial collaboration with the climbing community that could expand knowledge of bat roosting ecology; (4) empower climbers as ambassadors for bat conservation; and (5) develop a model collaboration that can be used to develop relationships with other climbing groups.

## **METHODS**

### **Gathering Participants**

One of the main goals of this partnership was to forge lasting relationships between rock climbers, bat biologists, and land managers within Colorado. The researchers gathered input from these three stakeholder groups in order to create a successful project which would be mutually beneficial to each concerned party. To begin this process, the research team utilized a snowball sampling method to gather participants for the first meeting (Goodman, 1961). The team included two researchers with numerous contacts within the rock climbing community, and one member who is a bat biologist with access to bat biologists and land managers who have dealt with rock climbing and bat conservation issues. In following with the sampling technique, each contact was asked to supply any names and contact information of additional rock climbers, bat biologist, and/or land managers who might have interest in the project. All contacts gathered were invited via email to the first World Café style meeting for the proposed working group.

### **World Café**

The first meeting utilized a World Café facilitated dialogue technique, which is a process that simulates café-type conversations to stimulate brainstorming and dialogue among the diverse stakeholder groups. The World Café process creates a collaborative and productive dialogue and deliberately seeks everyone's voice and wisdom in a welcoming, conversation-based

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atmosphere (Brown & Isaacs, 2005). Essentially, participant responses to pertinent questions are shared in café-like conversations and then each small group shares their main ideas through a full group “harvesting” process (Brown & Isaacs, 2005). These small, three to four person, groups are randomly formed and shuffled between each question, allowing for multiple perspectives from different stakeholders to be shared. World Café is a proven process that has demonstrated a remarkable capacity to foster authentic conversation and knowledge sharing among people of varied backgrounds (Brown & Isaacs, 2005).

During the initial World Café meeting, three discussion questions were asked of the participants. These questions were created in earlier intensive meetings with the research team as powerful, generative questions are essential to the process (Vogt, Brown, & Isaacs, 2003). The questions used to discover possible means of collaboration were: 1) What is important to you about bats, climbing, and/or conservation, and why; 2) What challenges might come our way moving forward in this project and how can we work together to meet these challenges; and 3) How can we use our unique contributions to exchange information about bats in the future of this project? Participants shared their reasons for valuing bats, climbing, and conservation, and then discussed the challenges and opportunities that a collaboration would present. Individuals aired concerns and brainstormed ideas for developing and expanding the collaboration. Throughout the discussions, important comments and points were captured artistically through a process called graphic recording so that participants could see the development of common issues and future participants could see how the process developed and how discussion evolved (Kelly, 2005; Figure 1). Answers to the three questions were collected from each small group, categorized, and posted.

The World Café process ends with a “gallery walk” (Brown & Isaacs, 2005). During this part of the process participants are given a number of stickers, which are used as *votes* for the most influential ideas from each question. This process allows for an enumerative way of quantifying the importance of ideas presented throughout the meeting. At the close of the meeting ideas and votes were tallied and recorded. Each participant ranked the importance he/she placed on each challenge and opportunity that was raised during the Café meeting. The cumulative ranks from all participants were used to prioritize concerns and motivate more discussion.

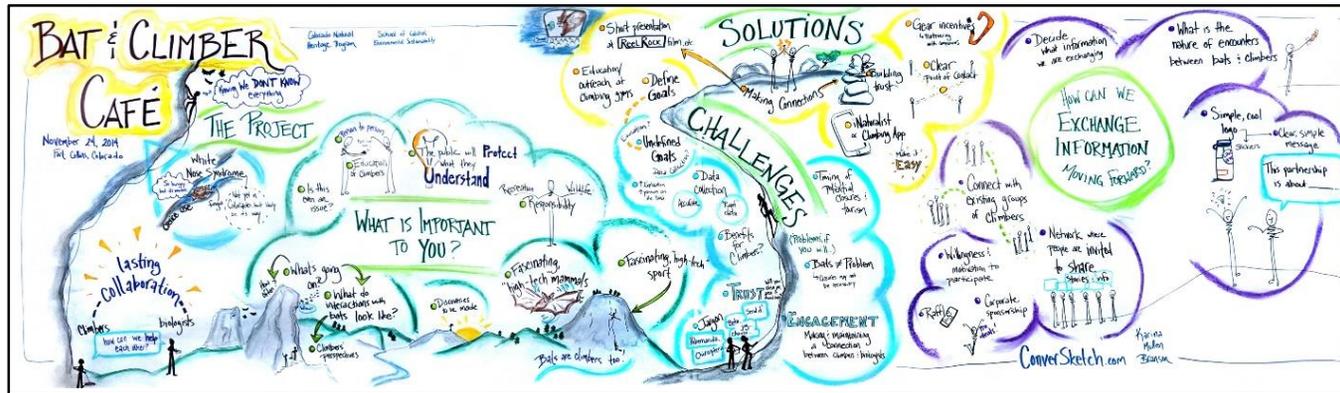


Figure 1. Graphic recording of Climbers for Bat Conservation World Café session.

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## Stakeholder Meeting

A second stakeholder meeting was convened to talk about progress and future directions of the project. During this meeting, the working group discussed important next steps that were identified during the World Café process. The conversation was audio recorded, transcribed, and open coded in a qualitative process outlined by Strauss (1987) to discover important topics and next steps. The working group discussed how to brand itself, how to collect data, how to include more participants, and what methods would be best for sharing the project.

## RESULTS

### Participants

A total of 11 participants were in attendance for the first World Café meeting. There were six in attendance representing federal and municipal land management agencies, three representing bat biologists, and two in attendance representing rock climbing interest. The second meeting of stakeholders had a total of seven participants and included two representing land management agencies, two representing bat biologists, and three rock climbing representatives.

### World Café

Answers to the first question asked during the World Café, *What is important to you about bats, climbing, and/or conservation, and why?*, elicited a number of responses including: *Education of rock climbers regarding bat conservation; Types of interactions climbers are currently having with bats (if at all); Bats are amazing mammals worthy of protection; Rock climbers and bats share fascinating similarities; Conservation of wildlife along with recreation as a balance; and Discoveries of previously undocumented bat hibernacula.*

The responses from the first part of the second question (*What challenges may come our way moving forward in this project?*) fit into four themed categories after being subjected to a process of open coding (Strauss, 1987). These categories include: collaboration, goals, recreation, and language.

Numbers following each of the statements represent the number of votes received by participants during the ‘gallery walk’; the absence of a number reflects a statement that was given during the harvest but received no votes. The category of *collaboration* contained the following statements: *Engagement of climbers* (7); *Fear or lack of trust leading to untruthful information* (2); *Maintaining a connection between climbers and bat biologists* (1); *Raising conflict where none exists*; *Collaboration and conflict*; and *How to collaborate to get bat encounter information from climbers*. The following statements were coded into the category, *goals*: *Undefined goals - education or data collection?* (3); *Collecting the “right” data* (2); *Logistical information from climbers* (1). The category of, *recreation*, contained the following statements: *Tourism and timing*; and *Increased recreation leads to increased exploration which leads to increased pressure on resources*. The final themed category of, *language*, consisted of the following statements: *Shared language*; *Improved communication: limiting jargon*.

Part two of the second question was: *How can we work together to meet these challenges?* Answers to this question fell into three categories: commitment, research, and engagement. The following two statements were coded in the category of *commitment*: *Gaining the trust and buy-in from climbers* (7) and *Providing incentives for climbers* (2). The category of, *research*, contains the following comments: *Define goals for coordination between groups* (1); *Gather general information about bat sightings by having a main contact point* (1); and *Development of an iNaturalist project* ([www.inaturalist.org](http://www.inaturalist.org)) (1). Two statements fit into the final category of *engagement*: *Public speaking at the Reel Rock Film Festival* (2) and *Addressing climbing gyms/shops in winter and on evenings or weekends for presentations* (1).

The final question of the World Café, *How can we use our unique contributions to exchange information about bats in the future of this project*, fit into themed categories of particular stakeholder groups: rock climbers, bat biologists, and administrative (referring to the research team). Four statements given outline possible contributions for rock climbers: *Make a list of climbing groups: Access Fund, Colorado Mountain Club, American Alpine Club, NOCO Climbers Coalition* (5); *Provide free presentations to climbing groups* (2); *Investigate corporate sponsorship from outdoor gear companies*; and *Gauge the interest from climbers at climbing walls*. Two potential contributions for bat biologists included: *Have bat biologists invite climbers to participate in the field* (1) and *Determine the nature of encounters between bats and climbers*. Finally, four suggestions were made for administrative

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contributions: *Market the project with a logo, project title, and social media (5); Decide what information we are exchanging (2); Invite people to share information through a network rather than a top down approach; and Create a short film about the project.*

## **Stakeholder Meeting**

The second meeting with stakeholders began with a brief presentation of findings from the World Café and followed with a discussion regarding how to move forward. Many topics were discussed during this meeting, including ways to reach new audiences of rock climbers and biologists, ultimate use of the data, new partnerships to pursue, having a clear vision and mission statement, and appropriate protocol for climbers to use when collecting data. One of the largest concerns was what these data would be used for and how the communication of those aims to the public needs to be carefully approached. Leaving the end use of the data ambiguous could cause many climbers to jump to conclusions that this project would eventually lead to the closure of climbing areas, a fear exemplified by the following quote from one of the rock climbing participants:

... This is definitely a huge concern, I'm worried about just being involved in this project because about 50% of the climber population is probably not on the ecology band wagon. As part of promoting this project a big part should be, 'we are not here to close climbing area; we're here to collaborate, get information and find out where [the bats] are living.' Climbers will continue to be involved as long as they know you are not maliciously trying to preserve bats and throw climbers by the wayside.

There was also a concern regarding use of data from a utility perspective from bat biologists. Much of the discussion on data acquisition revolved around the possible functions of the smart phone enabled iNaturalist app. These discussions led to the decision that taking pictures of bats may disturb them and probably would not lead to an accurate identification. Instead, it was suggested that the picture function of the proposed iNaturalist app may be better served to take a picture of the particular climb where the bat was found. Additionally, date, time, and geolocation data, which are automatically recorded via the iNaturalist app, were mentioned as valuable data to obtain.

Another concern that was mentioned repeatedly during the meeting was the need for a clear mission statement. Discussions led to the decision that the group goals should reflect equal parts data collection and education/interpretation. Suggestions for achieving this included supplying information to climbers through web-based and print media regarding the types, ecology, and value of bats as well as what types of questions we hope to answer with the data. Additionally, educational information should include steps on how to collect data without disturbing bat populations. Discussions during the meeting also led to the formation of a name for the collaboration, Climbers for Bat Conservation, as well as the following mission statement for the group:

... to better understand and conserve bat populations by building connections with rock climbers, land managers, and biologist.

Near the end of the second meeting the discussion focused on ways to raise the awareness of this project to other rock climbers. Ideas included creating posters, tee shirts, stickers, and tri-fold information pamphlets to post at rock climbing gyms and outdoor stores. Additionally, participants suggested the group reach out to partners such as the Access Fund, Pikes Peak Climbers Coalition, and other climbing groups. Finally, the idea of producing a short video describing the project from multiple perspectives; rock climbers, bat biologist, and land managers, was suggested as a way of further raising awareness and support of the project.

## **Social Media**

The Climbers for Bat Conservation (CBC) Facebook page (now with over 230 likes from US, Europe, and Central and South America) was developed along with a website ([www.climbersforbats.colostate.edu](http://www.climbersforbats.colostate.edu)) to facilitate dialogue and information exchange among climbers and bat biologists. The research team developed an iNaturalist project page and mail-in postcards for climbers to submit data for the project. The iNaturalist website is a citizen-science based site which includes an integrated smart phone application that allows participants to record, identify, and geo-locate observations of plants and animals in the field. Observations are automatically shared on an interactive map via the project website which other collaborators can access. Our project site currently has ten members, and three current observations

posted. A majority of bat data reports have come via direct solicitation from The Mountain Project (mountainproject.com), while some have come via postcards. In fact, the first data point for the project originated from searching and soliciting information from rock climbers on the Mountainproject.com webpage. The following is an excerpt from a rock climber who had an encounter with a bat on a climb in Colorado:

... I was up in the boulders below Arthur's Rock in Lory State Park on Oct 11 of last year doing some afternoon climbing (around 2pm). I was attempting a route on the Snake and Skewer boulder (the Northern Colorado Climbers Collation guidebook for Arthur's Rock bouldering has a good description on how to get there, but the attached Google map shows an approximate location) and there is a feature on the rock which is a small vertical pocket about 15cm deep and 5cm in diameter. This pocket is about a meter off the ground. This pocket is used in the climb I was attempting, and after sticking my fingers inside, I felt something move. Further investigation with my headlamp revealed a lone bat hanging in the small pocket. The bat did not leave the pocket while I was there, but when I returned about a month later, there was no sign of bat activity (or at least no guano) in the area.

This particular climber went on to give longitude and latitude location data as well as detailed maps for this bat encounter. Most data accounts thus far are of single-roosting bats, but one account has over 100 bats, which is a potential future study site.

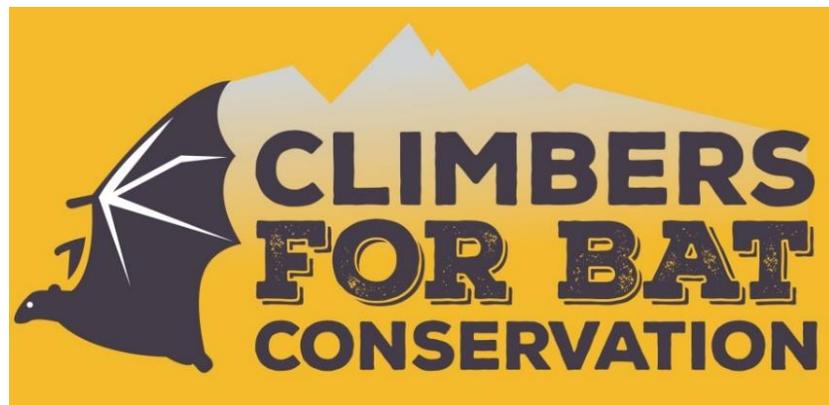


Figure 2. Winning logo design for Climbers for Bat Conservation.

## **Outreach**

The researchers have placed outreach materials, such as posters and brochures, at climbing gyms throughout the Front Range of Colorado, hosted free climbing nights at a local climbing gym to promote the project, and given multiple presentation to local student organizations at Colorado State University, including The Wildlife Society, Outdoor Club, and Society of Conservation Biology.

The working group felt that developing a logo, website and outreach materials were imperative for sharing the project with such organizations as Mountain Project, Access Fund, Colorado Mountain Club, American Alpine Club, and Northern Colorado Climbing Coalition. A logo competition was started among the working group and the winning design was developed by the director of the Northern Colorado Climbing Coalition (Figure 2). This logo was used in the development of promotional materials including tee shirts, stickers, and posters.

## **CONCLUSION**

During the World Café meeting, biologists, land managers, and climbers were supportive of developing a collaboration to collect information on bats. The biggest challenges were overcoming the external belief that the data would be used to restrict access to climbs. Thus, the group felt the biggest priority was to refine the goals for the project and gain trust within the climbing community by giving public presentations and hosting bat-survey outings. Development of the collaboration was met with less resistance than expected; however, there is some concern within the climbing community that the data will be used to preclude climbers from climbs. Seasonal climbing closures currently exist for raptors and bats in Colorado, but most climbers have been supportive.

The World Café process worked well at bringing multiple stakeholders together to share their different views on the intersection of recreational rock climbing and bat conservation. One of the main limitations to this process was the low number of participants involved in the first World Café. Though this process has been effective with as few as nine individuals (Brown & Isaacs, 2005), the more stakeholders present creates a more varied and holistic view of the issues and serves to create better solutions. Even with the low attendance, the World Café process supplied adequate self-generated direction

for the collaboration to move forward. This process lends itself well to future potential user group conflicts with natural resources but it is essential that the process be started early, ideally before conflict becomes entrenched. The World Café process allows for the creative capacity of individuals to see areas of mutually beneficial collaboration while openly expressing different perspectives from a wide range of stakeholders.

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