ADVENTURE SCIENTISTS

EXPLORE. COLLECT. PROTECT.

Final Report

Citizen Science Rare Carnivore Monitoring in the Uinta-Wasatch-Cache National Forest

A. Executive Summary

During the spring, summer and fall of 2015, 34 volunteers from Adventure Scientists surveyed the north slope of the Uinta Mountains and part of the Bear River Range for three rare carnivore species: wolverine, Canada lynx and gray wolf. Adventure Scientists staff joined USDA Forest Service biologists and district rangers to train volunteers and lay out a network of 30 cameras in 14 remote drainages. Between May and October the sites recorded more than 3000 camera-nights of data, fifteen species of wildlife, and nearly 20,000 camera trap images and video clips. No photos or videos of the target species were recorded. However, the other recorded species provide a snapshot of Uinta wildlife in the midst of increasing human use of the forest and a warming climate.

The volunteer Uinta Carnivore crew consisted of 34 volunteers who committed to six weekends of work in the Uinta range. 100% of the volunteers who began the project completed their service. In March of 2016 Adventure Scientists and the USFS were recognized at the annual meeting of Public Lands Alliance with the Public Lands Partners Excellence Award for the project's innovative model of collaboration. National Geographic produced a short documentary film profiling

two of the volunteers and a version of the film will be screened as part of Telluride Mountain Film Festival in May 2016.

B. Narrative Summary

Adventure Scientists' mission is to engage the outdoor community to collect physical data that helps address environmental and conservation issues. Adventure Scientists uses this approach to citizen science to fill data gaps, especially where physical data is required from remote or difficult-to-access locations. The distribution and population of non-game species like wolverine and Canada lynx are an example of a current data gap. To help bridge this void, the Uinta-Wasatch-Cache National Forest and Adventure Scientists partnered on a study to survey the north slope of the Uinta Mountains. In 2014 the Utah Department of Wildlife Resources recorded a wolverine on a trail camera on the north slope, but it was uncertain whether it was a transient or resident individual.

Traci Allen, the USFS lead biologist on the project, laid out a network of camera stations in likely wolverine habitat across the north slope of the Uintas. These sites were generally placed with one lower site outside the High Uintas Wilderness Boundary, and one upper site inside the Wilderness. Adam Brewerton, a biologist with the Utah Department of Wildlife Resources also collaborated on the project design and volunteer training. The Utah State Swaner EcoCenter in Park City provided a venue to share results of the project and hosted a presentation on wolverines and Adventure Scientists' citizen science work. ClifBar, Osprey Packs, Steripen water purifiers, and Sunskis Sunglasses all provided donations to the project.

The goals of the survey included:

- collecting camera data on the presence or absence of wolverine, Canada lynx and gray wolf in the Uintas

- engaging volunteers from urban Salt Lake City
- building a constituency of advocates for public land and the Uinta-Wasatch-Cache National Forest
- raising public awareness of elusive carnivores
- demonstrating that committed volunteers can cover a large area in a cost-effective manner

The collaboration met each of these goals. Before this project, limited budgets for these species meant that the USFS had only 5 active cameras. This project added 34 more cameras, and over 3000 camera-nights (one camera active for one night) of survey effort across over 800 square miles. For comparison, a large project in Wyoming conducted by the Wyoming Game and Fish Department recorded 2000 camera-nights. The amount of data collected by this NFF-supported project was significant, and represents a snapshot of multiple species on the north slope of the range. This study could be repeated in one year, ten year or fifty year intervals to measure changes over time. In the midst of climate change and increasing human use of the Uinta-Wasatch-Cache this dataset serves as a baseline.

Beyond the data, volunteer engagement was perhaps the most significant accomplishment of the project. More than 90 people applied during a two-week application window. Adventure Scientists staff then selected 15 project leads and two alternates. Each of the lead volunteers recruited a partner to join the project. Every volunteer who attended the two training sessions completed their service with the project. This engagement has a viral effect as the volunteers tell friends, family, coworkers and neighbors about their work on the project. Given the multiple ways (social media, word-of-mouth, stories around a dinner table) people share stories, it is difficult to measure how many more people know about rare carnivores and the public lands of the Uinta-Wasatch-Cache National Forest as a result of this project, but it is a significant intangible benefit to data collection with citizen scientists.

As a growing organization, Adventure Scientists had the opportunity through this project to demonstrate the feasibility of this model of data collection. Many of the camera sites required 3+ hours of driving from Salt Lake City to remote trailheads accessed by jeep trails. Roundtrip hikes or trail runs of between 15 and 40 miles were required for all sites. Despite the remoteness, all camera sites were visited on schedule each month. Engaging outdoor enthusiasts in data collection allows scientists to gather physical data from vast landscapes, and in compressed periods of time, when compared to traditional approaches.

Sharing data collection adventures is core to Adventure Scientists' mission. On this project Adventure Scientists sought to highlight the experiences of volunteers. The project received local press in the Park City Record (and for the public presentation this spring), and the Salt Lake City Weekly, as well as national/international coverage in Al-Jazeera America and National Geographic News. A 7-minute edit of the video appearing on the National Geographic website will be shown in the Mountainfilm tour during 2016/2017. Through this exposure many more people will have the opportunity to learn about rare carnivores, the Uinta mountains, and the opportunity to volunteer for conservation while recreating.

The largest challenges on the project were logistical. Organizing two trainings at USFS campgrounds at over 10,000ft. with 45+ people to feed took many weeks of planning. The weather during the scouting and spring training weekends was another significant challenge. Over four feet of snow fell in late April, and many camera sites were at over 12,000 feet. The camera set up weekends required navigating deep isothermic snow at higher elevations and high water crossings at lower elevations. Impassible roads turned already long hikes into 20+ mile slogs. However, these challenges tend to be conditions outdoorspeople take pride in weathering, and the volunteers were no exception.

Dealing with the logistics of bait and camera supplies necessitated a half-time Salt Lake City-based Program Coordinator. This role was also responsible for organizing the camera data and transferring it to Forest Service staff. This was the first time Adventure Scientists hired a remote Project Coordinator, but it was essential for smooth operation of the project.

Dave Kelly filled the role and did everything from scour the DollarTree stores of the Salt Lake Basin for knock-off Calvin Klein perfume, to cut deals with his local butcher for beef femur bones for the camera bait stations.

This was the second camera project Adventure Scientists has conducted with support from the National Forest Foundation. As with the camera project to survey for Pacific Pine Marten on the Olympic Peninsula, a challenge remains in translating the great volunteer energy these projects generate into longer-term engagement. On both projects the volunteers were interested in continuing to volunteer, but there was no funding or mechanism in place to allow this. At the local level Forest Service districts often don't have the staffing necessary to manage volunteers for data collection. Adventure Scientists often operates these efforts as one-off, remote (from our Bozeman HQ) projects and does not have the funding to keep staff in place away from headquarters.

On future projects it would be ideal to build in time to establish a pathway for volunteers to continue their engagement. It could be through another existing NGO partner of the USFS or directly with USFS staff.

Citizen science and Adventure Scientists' model of engaging outdoor enthusiasts, are likely to continue growing in value to public land managers and scientists. This combination approach allows for robust data collection and constituency-building, making it worth considering for large-scale physical data collection efforts. Adventure Scientists recently signed a five-year master cost-share agreement with the National Partnerships Office of the USFS to make further collaborations possible.

Adventure Scientists would like to thank the National Forest Foundation for their two years of support at a critical time in our growth as an organization. We look forward to future opportunities to partner, and appreciate the good work you fund across the Forest Service system.