Center for Native Ecosystems

Saving endangered plants and wildlife in the Greater Southern Rockies.

Front Range Pika Project
Final Report
January 28, 2011

In May 2010 the Boulder County Nature Association's small research grant fund made a generous $1,000 grant in support of Center for Native Ecosystems' Front Range Pika Project. This final report provides a narrative and financial summary of the challenges and accomplishments of the 2010 pilot season and touches on our plans for the future of this long-term monitoring project.

The Front Range Pika Project is a collaborative citizen science initiative developed and carried out in conjunction with researchers at the University of Colorado and Colorado State University, the Denver Zoo, and the Mountain Studies Institute. Collectively our organizations engaged and trained interested community members in the kickoff season of a long term project monitoring populations of the American pika in Colorado's Front Range, including alpine locations in Boulder County.

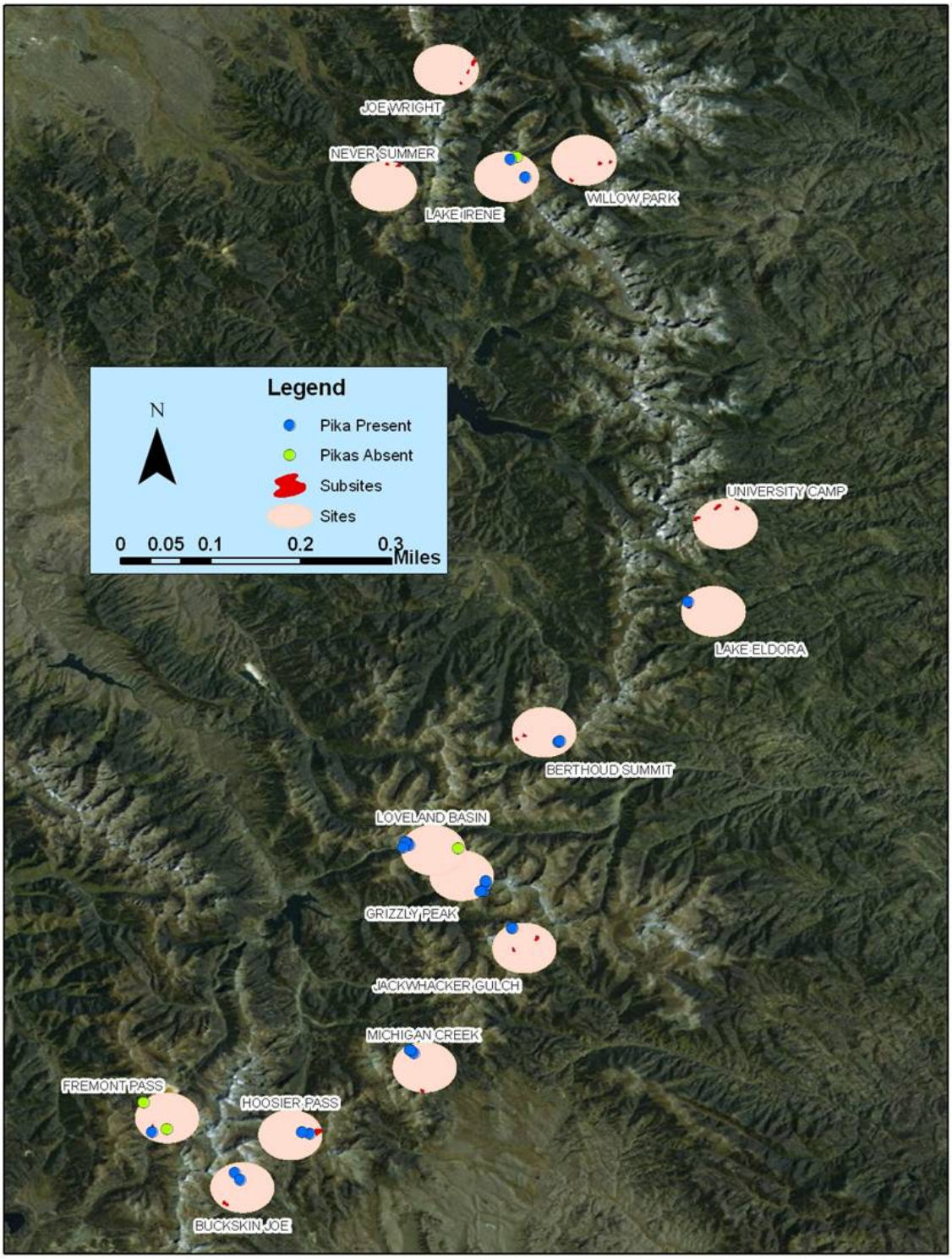
Field Research

Center for Native Ecosystems, in collaboration with our partners, trained a core team of volunteer citizen scientists to survey sites for pika populations through the summer of 2010. We held two trainings (each consisting of a classroom session followed by a field session) and trained 27 volunteers to conduct straightforward yet scientifically-rigorous surveys of alpine talus sites potentially inhabited by pika. Eight o f the trained volunteers were unable to participate in field surveys due to scheduling conflicts, injury, and work circumstances but most of those indicated they would like to participate in 2011.

From May through November 2010, nineteen of those citizen scientists surveyed 24 sites throughout the Front Range Mountains, including sites in Boulder County. The sites were selected by the Colorado Division of Wildlife through GIS modeling to be at the same aspect and elevation as Snowpack telemetry (SNOTEL) sites, such that long-term data sets on pika occupancy can be correlated with data on snowpack and other climactic data.

Please see the attached volunteer manual with survey instructions and data sheets for more detail.

Map of study area – Colorado's Front Range



A team of two volunteers visited each site. Each volunteer conducted an independent survey consisting of the following elements:

- Determining whether talus was present, and thus whether the site was potential pika habitat
- Conducting a survey for evidence of both present and past pika occupancy (including presence of pikas, pika scat, hay piles, or other signs)
- Recording the GPS coordinates of the talus patch
- Recording information on variables that might influence pika detectability (e.g. cloud cover, temperature etc.)
- Recording information on habitat variables (surrounding vegetation, depth of talus, evidence of presence of water under the talus, size of largest boulders, talus area, etc.)
- Determining whether marmots and brown-capped rosy finches were present
- Capturing photos from the center of the site in 4 cardinal directions to document the surrounding vegetation

This pilot season yielded a set of baseline data that will enable us to use continued long-term monitoring to evaluate factors that may drive changes in pika distribution. In addition, we will be able to use experience gained through our first field season to further refine our data collection protocols, volunteer training process, etc. In 2011, we will conduct citizen science monitoring of pika populations at all of these sites, and expand the number of volunteers, and add additional sites. We intend to continue to monitor sites for 10 years. Long-term citizen science monitoring of pika occupancy at these sites will help us understand how pika distribution is changing over time, and how changing climate is affecting pika populations in the region.

In addition to the Front Range portion of the project, we coordinated with two partner projects across the state. Mountain Studies Institute used the same site selection process, data collection protocols and volunteer training manuals to conduct citizen science to gather baseline data on pika distribution in the San Juan Mountains of southwest Colorado. Colorado Division of Wildlife technicians used the same site selection process and data collection protocols to gather similar data across the rest of Colorado. The result of this collaboration is a consistent baseline data set on pika distribution across the state. We intend to continue this productive partnership into the future. One additional partner in New Mexico may participate in this effort in 2011.

The data gathered this year will add to and validate the results of other long-term studies on pika distribution across the species' range, including studies being conducted by our colleagues at the University of Colorado and the National Park Service's Pikas in Peril project.

Data collected by our citizen scientists is housed in an innovative citizen science database http://www.citsci.org/cwis438/Browse/Project/Project_Info.php?ProjectID=275&WebSiteID=7 developed by the Natural Resource Ecology Laboratory at Colorado State University (CSU). The data is available to scientists and managers, and can be downloaded in several useful formats.

Community Involvement and Conservation

We educated and engaged more than 20 local residents who are now becoming informed advocates for the conservation of Rocky Mountain species and ecosystems. Participants were happy to have the opportunity to be part of an interesting field experience, a larger research project, endangered species advocacy, and to connect with preeminent researchers conducting pika studies.

We were able to offer them a few small bonuses throughout the season, including Chipotle burritos at the trainings (thanks to a generous in-kind donation from Chipotle) and an end-of-season reception at the Denver Zoo. There Dr. Chris Ray from the University of Colorado presented her research and expressed her gratitude for volunteers' commitment to helping build a robust dataset on this dwindling species.

We worked with a graphic designer to create a logo for the Front Range Pika Project, above. At the end of season party, each volunteer received a Front Range Pika Project hat and a set of Center for Native Ecosystems wildlife notecards, which everyone raved about. They completed surveys about their experience and we received excellent feedback which we will incorporate into our 2011 plan. Most indicated in their surveys that they plan to participate in the Front Range Pika Project in 2011.

This pilot field season was the first step in gathering the information needed to understand conservation opportunities and challenges for pika in a warming climate. In coming years, the project will build a long-term data set to understand changes in pika distribution over time. This information will be used to engage with decision makers to begin developing actionable plans to respond to the threat climate change poses to high elevation species and ecosystems.

Lessons Learned for 2011

Many of our project participants were unfamiliar with using a GPS unit to either find or mark coordinates. In 2011 we will provide much more comprehensive GPS training, both at the initial classroom session as well as in the field. Volunteers also wanted confirmation that they had arrived at the right site, so we are thinking through a way to mark each site with a temporary marker.

We will do some work on site selection before the 2011 season, adding some and eliminating others that were difficult to access or didn't contain talus. Volunteers also expressed interest in adding an opportunistic element so they could do an impromptu pika survey whenever they were hiking or passing through alpine ecosystems not part of the pre-identified survey area.

Financial Report

Item	Notes	BCNA Funds Expended	Other Funds Expended	In-kind support	Total CNE Expenditures
Staff Biologist Salary	.1 FTE from April through October	$250	$2,310		$2,560
Assistant Staff Biologist	.1 FTE from April to October		$2,240		$2,240
Temperature Data Loggers	Budgeted at $2,000 – did not purchase				$0
Volunteer Trainings	2 trainings (in-kind Chipotle donation)		$200	$400	$200
Travel	Four staff field visits ($40 each)		$160		$160
Development and printing of citizen science materials	Field guides, data sheets, protocols, maps, directions to field sites	$750	$1,250		$2,000
CitSci.org database	CSU contributed in kind support for pilot year (custom features put on hold until 2011)			$4,300	$0
GPS Units	Borrowed from CDOW			$600	$0
Binoculars	Used participants' binoculars				$0
Volunteer Appreciation	Pika project logo, hats, party		$250	$700	$250
TOTAL		**$1,000**	**$6,410**	**$6,000**	**$7,410**

Conclusion

The pilot season of the Front Range Pika Project was an overwhelming success. The project directly involved the community in climate change research. Project participants became knowledgeable about pika ecology and the threats that climate change may pose to Colorado's alpine ecosystems. Pika project volunteers gained an interest in future engagement in CNE activities focused on development of long-term adaptive management strategies to protect cold-loving species in the face of a warming climate.

The Boulder County Nature Association provided the first specific grant in support of this endeavor, and we are indebted to you for your trust and support. We intend to make this a long term monitoring effort and we very much appreciate your assistance in helping us get the project off the ground. We would love to involve BCNA members directly in the project in 2011 and look forward to speaking with you about that prospect. Please let us know if you have any questions or feedback about this report.