

## **Final Report for PNW CESU Task Agreement J8W07080021**

Project Title: Administrative Support of the Upper Columbia Basin Network Inventory and Monitoring Program Office

Cooperator: University of Idaho

PI for U Idaho: Dr. Gerald Wright

NPS Key Official: Gordon Dicus

This Task Agreement was established in 2008 through the Pacific Northwest Cooperative Ecosystem Studies Unit. The agreement had a five-year duration, and expired September 30, 2013. The purpose of the agreement was to define an affiliation between the National Park Service and the University of Idaho for administrative and technical support in directing a cooperative program of research, inventory, and monitoring in the parks that comprise the Upper Columbia Basin Network (UCBN) of the NPS Inventory and Monitoring Program. The administrative support provided by the University of Idaho includes but is not limited to office space, information technology support, library services, and project staff (principle investigators and students). The UCBN program benefits the University by providing students the opportunity to learn about the National Park Service and to work with the NPS to gain technical skills relevant to the natural resource job market.

A number of natural resource projects have arisen from the collaboration fostered by this administrative support agreement:

1. Technical Assistance. PI is Dr. Gerald Wright. Project has provided long-term employment to two UI students and shorter employment periods to two other UI students. This project has provided critical data, GIS, and science communication support to a variety of projects, thereby supporting a number of technical reports published in the NPS Natural Resource Report series in addition to several peer-reviewed journal articles.
2. Aspen Monitoring. PI is Dr. Eva Strand. Project has employed several UI students on a short-term basis. Three technical reports have been published in the NPS Natural Resource Report series, with a fourth report in preparation. A manuscript is in preparation for submission to a peer-reviewed journal. The project developed a peer-reviewed monitoring protocol and set of standard operating procedures.
3. American Pika Monitoring. PI is Dr. Gerald Wright. Project provided long-term employment to one UI student and hired a few students for short-term fieldwork opportunities. Two technical reports have been published in the NPS Natural Resource Report series. A widely-referenced, peer-reviewed monitoring protocol and set of standard operating procedures was developed. And four peer-reviewed journal articles have been published to date, with another in preparation.
4. Statistical Assistance. PI is Dr. Kirk Steinhorst. Project has provided assistance with statistical analysis for a wide variety of projects, contributing substantially to numerous technical reports published in the NPS Natural Resource Report series.

The Upper Columbia Basin Inventory and Monitoring Network has produced a significant amount of high-quality products, many of which have benefited from the collaboration between the NPS and the University of Idaho. Reports, publications, and technical protocols and standard operating procedures developed by the UCBN are frequently referenced, and have been adopted in other NPS Inventory and Monitoring Networks as well as by other agencies. A list of some of these journal articles, reports, and protocols is provided below. The UCBN places strong emphasis on effective science communication to a variety of target audiences, and the breadth and quality of this work is reflected on the UCBN website (<http://science.nature.nps.gov/im/units/ucbn/>).

Publications by the Upper Columbia Basin Network Inventory and Monitoring program, involving collaborative work supported by University of Idaho task agreements.

#### Journal articles:

Irvine KM and Rodhouse TJ. 2010. Power analysis for trend in ordinal cover classes: implications for long-term vegetation monitoring. *Journal of Vegetation Science*. 21:1152-1161.

Jeffress MR et al. 2014. The idiosyncrasies of place: geographic variation in the climate-distribution relationships of the American pika. *Ecological Applications*. In press.

Rodhouse TJ et al. 2009. Habitat selection of rodents along a pinyon-juniper woodland-savannah gradient. *Journal of Mammalogy*. 91(2):447-457.

Rodhouse TJ et al. 2010. Distribution of American pikas in a low-elevation lava landscape: conservation implications from the range periphery. *Journal of Mammalogy*. 91(5):1287-1299.

Rodhouse TJ et al. 2011. A practical sampling design for acoustic surveys of bats. *The Journal of Wildlife Management*. 75(5):1094-1102.

Rodhouse TJ et al. 2012. Assessing the status and trend of bat populations across broad geographic regions with dynamic distribution models. *Ecological Applications*. 22(4):1098-1113.

Stucki DS et al. 2013. Natural resource conservation in a cultural park: evaluating the importance of Big Hole National Battlefield to the endemic Lemhi penstemon. *Natural Areas Journal*. 33(1):500-508.

#### National Park Service publications:

Esposito D et al. 2012. Sagebrush steppe vegetation monitoring in the Clarno Unit of John Day Fossil Beds National Monument: 2012 annual report. *Natural Resource Data Series*. NPS/UCBN/NRDS—2012/396. National Park Service.

Jeffress M et al. 2013. Pilot testing a pika monitoring protocol in Glacier National Park: Project Report 2012. *Natural Resource Technical Report*. NPS/UCBN/NRTR—2013/667. National Park Service.

Rodhouse TJ. 2009. Monitoring sagebrush-steppe vegetation in the Upper Columbia Basin Network: 2008 annual monitoring report for City of Rocks National Reserve, Hagerman Fossil Beds National Monument, and John Day Fossil Beds National Monument. *Natural Resource Technical Report*. NPS/UCBN/NRTR—2009/182. National Park Service.

Rodhouse TJ. 2011. Sagebrush steppe vegetation monitoring in Craters of the Moon National Monument and Preserve and City of Rocks National Reserve: 2010 annual report. *Natural Resource Technical Report*. NPS/UCBN/NRTR—2011/462. National Park Service.

Strand E and Bunting S. 2009. Monitoring Aspen in the Upper Columbia Basin Network: 2008 monitoring report for City of Rocks National Reserve and Craters of the Moon National Monument and Preserve. Natural Resource Technical Report. NPS/UCBN/NRTR—2009/196. National Park Service.

Strand EK et al. 2011. Upper Columbia Basin Network aspen monitoring annual report 2010: Craters of the Moon National Monument and Preserve (CRMO). Natural Resource Technical Report. NPS/UCBN/NRTR—2011/456. National Park Service.

Stucki DS and Rodhouse TJ. 2012. Upper Columbia Basin Network limber pine community dynamics 2012 annual monitoring report: Craters of the Moon National Monument and Preserve. Natural Resource Data Series. NPS/UCBN/NRDS—2012/382. National Park Service.

Stucki DS and Rodhouse TJ. 2012. Sagebrush steppe vegetation monitoring in Hagerman Fossil Beds National Monument: 2012 annual report. Natural Resource Data Series. NPS/UCBN/NRDS—2012/402. National Park Service.

Stucki D and Rodhouse T. 2012. Sagebrush steppe vegetation monitoring in City of Rocks National Reserve: 2012 annual report. Natural Resource Data Series. NPS/UCBN/NRDS—2012/407. National Park Service.

Yeo JJ and Rodhouse TJ. 2012. Sagebrush steppe vegetation monitoring in John Day Fossil Beds National Monument: 2011 annual report. Natural Resource Data Series. NPS/UCBN/NRDS—2012/226. National Park Service.

Yeo JJ and Rodhouse TJ. 2012. Sagebrush steppe vegetation monitoring in Lake Roosevelt National Recreation Area: 2011 annual report. Natural Resource Data Series. NPS/UCBN/NRDS—2012/231. National Park Service.

#### National Park Service Monitoring Protocols:

Garrett LK et al. 2010. Upper Columbia Basin Network osprey monitoring protocol: Narrative and Standard Operating Procedures version 1.0. Natural Resource Report. NPS/UCBN/NRR—2010/269. National Park Service.

Jeffress MR et al. 2011. Monitoring the American pika (*Ochotona princeps*) in the Pacific West Region - Crater Lake National Park, Craters of the Moon National Monument and Preserve, Lassen Volcanic National Park, and Lava Beds National Monument: Narrative and Standard Operating Procedures version 1.0. Natural Resource Report. NPS/UCBN/NRR—2011/336. National Park Service.

McKinney ST et al. 2012. Monitoring white pine (*Pinus albicaulis*, *P. balfouriana*, *P. flexilis*) community dynamics in the Pacific West Region - Klamath, Sierra Nevada, and Upper Columbia Basin Networks: Narrative and Standard Operating Procedures version 1.0. Natural Resource Report. NPS/PWR/NRR—2012/532. National Park Service.

Starkey EN et al. 2011. Upper Columbia Basin Network Stream Channel Characteristics Monitoring Protocol: Narrative and Standard Operating Procedures version 1.0. Natural Resource Report. NPS/UCBN/NRR—2011/340. National Park Service.

Starkey EN et al. 2011. Upper Columbia Basin Network riparian condition monitoring protocol: Narrative and Standard Operating Procedures version 1.0. Natural Resource Report. NPS/UCBN/NRR—2011/463. National Park Service.

Strand EK et al. 2009. Upper Columbia Basin Network Aspen Monitoring Protocol: Narrative and Standard Operating Procedures version 1.0. Natural Resource Report. NPS/UCBN/NRR—2009/147. National Park Service.

Yeo JJ et al. 2009. Upper Columbia Basin Network Sagebrush Steppe Vegetation Monitoring Protocol: Narrative and Standard Operating Procedures version 1.0. Natural Resource Report. NPS/UCBN/NRR—2009/142. National Park Service.