

Final Summary Report

January 15, 2018

PROJECT TITLE: Administrative Support for the Klamath Network – Southern Oregon University Inventory, Monitoring, and Research Partnership

TASK AGREEMENT/CONTRACT NO.:
P13AC00714

COOPERATIVE AGREEMENT NO.:
H8W07110001

TERM OF AGREEMENT:
07/15/2013 to 01/30/2018

COOPERATOR: Southern Oregon University

PRINCIPAL INVESTIGATOR: Dr. Peter Schroeder, Department of Biology, Southern Oregon University
AGREEMENT TECHNICAL REPRESENTATIVE: Dr. Alice Chung-MacCoubrey, NPS

PROJECT OVERVIEW

This task agreement establishes a partnership between Southern Oregon University (SOU) and the Klamath Network (KLMN) that provides Klamath Network staff with courtesy staff appointments at SOU and permits the Network staff to use suitable SOU offices and infrastructure, including laboratories, computer related services, equipment, supplies, telephone services, university libraries, and other materials or facilities on the same basis provided to other staff members. In turn, this agreement emphasizes providing valuable opportunities for hands-on student projects and internships that fulfill accepted student learning goals while addressing recognized needs in the network parks. Funding in the agreement provides compensation to the university for on-campus services such as computer accounts and information technology support, telephones, interlibrary loan costs, and student and administrative employment. Besides providing for library privileges and SOU e-mail accounts for KLMN staff at no cost, this agreement also facilitates collaborative contractual opportunities in research, educational, and employment for SOU researchers and students in the Klamath Network parks, and provides avenues for KLMN staff to provide consultative services to faculty and students through such activities as leading seminars, serving on graduate committees, and teaching guest lectures.

2016 PROJECT DESCRIPTIONS

Joint accomplishments in 2016 supported by the funding and resources provided through this administrative agreement between SOU and the KLMN have resulted from two projects: 1) a Whitebark Pine Monitoring Project supervised by NPS botanist Sean Smith that employed SOU Environmental Science and Policy student intern Byron Birss to assist with data collection for the Klamath Network's Whitebark Pine Monitoring Protocol (WBP) within Crater Lake and Lassen National Parks, and 2) an ongoing SOU Insect Collection Databasing Project supervised by SOU Affiliate Associate Professor of Biology Peter Schroeder that has irregularly employed four students over the past 3 years (one SOU biology student Micah Nash in 2016) to database the SOU Insect Collection.

2017 PROJECT DESCRIPTIONS

Three projects were supported by the funding and resources provided through this administrative agreement between SOU and the KLMN in 2017: 1) the continuing Whitebark Pine Monitoring Project (as described above) employed SOU student intern Erica Rudolph to assist with data collection for the Klamath Network's Whitebark Pine Monitoring Protocol (WBP) within Crater Lake and Lassen Volcanic National Parks, 2) an outreach project supervised by NPS Science Communication Specialist Sonya Daw that employed SOU Environmental Education graduate student intern Melissa Donner to assist in the graphic design of a KLMN logo and a poster describing KLMN inventory and monitoring programs, and 3) field support for collecting

vegetation data used to conduct an accuracy assessment of a KLMN vegetation mapping product.

KEY PROJECT ACCOMPLISHMENTS

Key accomplishments of these projects, as well as the ongoing daily functioning of the Network, greatly relied on the office space provided to KLMN staff (via both the rented dwelling on 1383 Oregon St, Ashland and office space within the SOU Science Building), computer assistance and support, and staff privileges provided by SOU via this agreement. In 2017, SOU and NPS negotiated a reduction in administrative support costs through a one-time waiver by SOU of indirect costs on NPS office space through December 2018. In addition, SOU identified a new principal investigator in the Biology department in order to strengthen communication and connections between students and NPS (e.g., increase student awareness of I&M program, recruit students for internships). Specific key accomplishments for research and learning outcomes as intended in this agreement are listed in detail for each project below.

SOU Insect Collection Databasing Project

Research Outcomes: To date, information – including identification and collection data – for nearly 11,000 (44%) of the approximately 25,000 specimens in the SOU insect collection have been catalogued into a database (Excel spreadsheet). This accomplishment represents over 250 cumulative hours of student work over the course of 4 years. Once completed, the database will give SOU, NPS, and other researchers easy electronic access to collection data for all the insect specimens held in the SOU Natural History Collections, avoiding unnecessary handling and potential breakage of the specimens.

Learning Outcomes: This project has provided the student interns involved in this project the following skills training, instruction, and work experiences:

- Training in the careful and efficient cataloguing of data entry into a database (Excel spreadsheet)
- Training in the careful and proper handling of valuable natural history specimens
- Instruction in identifying key insect groups (orders and families) and their taxonomic relationships
- A deeper understanding of the natural and historical value of natural history collections

KLMN Whitebark Pine Monitoring Project

Research outcomes: Target goals of sampling 10, 50 by 50 meter sites at each Crater Lake and Lassen Volcanic National Parks (20 total sites) were met and completed between mid-July and late August. Specific research objectives included 1) measuring and recording tree diameter at breast height (DBH), tree height, and assessing canopy kill, 2) cataloguing locations of sampling sites using geographical positioning systems (GPS), and 3) identifying tree species and levels of Whitebark Pine Blister Rust (*Cronartium ribicola*) infection within sample sites.

Learning outcomes: This internship provided two interns: 1) Byron Birss (2016), and 2) Erica Rudolph (2017) with the following skills training, instruction, and/or work experiences:

- Training in aspects of forest mensuration: measuring tree DBH (diameter at breast height), tree height, and assessing canopy kill.
- Training in off trail navigation, using map and compass as well as GPS unit to locate predetermined sites
- Training in data entry using MS office Access database including data quality control and assurance.
- Instruction in identifying subalpine trees to species level.
- Instruction in the biology and identifying characteristics of Whitepine blister rust (*Cronartium ribicola*), whitebark pine ecology, as well as general ecology.
- Experience and practiced ability to critically assess safety hazards and to speak up if uncomfortable with terrain.

- In addition to the learning outcomes listed above, both interns received college course credit toward fulfilling senior capstone requirements. Byron Birss completed his senior capstone within the SOU Department of Business, Communication, and the Environment under the mentorship of Dr. Greg Jones, and Erica Rudolph earned her capstone within the SOU Department of Biology under the mentorship of Dr. Michael Parker.

KLMN Graphic Design Project

Research Outcomes: Target goals of producing outreach materials describing KLMN inventory and monitoring programs were met and completed between late March and mid-April 2017. Specific project objectives included 1) providing a graphic design for a logo that represented the six national parks within the KLMN and was color compatible with the National Park Service arrowhead colors, and 2) designing a 3' by 4' poster that described and promoted the KLMN inventory and monitoring program as well as the specific vital signs monitored by the program. A traveling copy of the poster, accompanied with a portable stand, was also created for display at NPS meetings, seasonal orientations, conferences, and other venues that offer opportunities to educate NPS staff and the public about KLMN programs. The newly created KLMN logo will be used to visually brand NPS science communication products, such as NPS "Featured Creature" natural history articles and NPS newsletters. The logo may also be used on other outreach materials, such as baseball-style caps or field shirts for NPS crews.

Learning Outcomes: This project provided the student intern involved in this project the following specific skills training, instruction, and/or work experiences:

- Gaining a hands-on experience of working closely with NPS staff and personnel in learning about and following guidelines and protocol used by NPS to promote their programs via outreach projects with specific goals and aimed at select audiences
- Practical training and experience in graphic design:
 - choosing and translating concrete natural resource items (e.g., tree, stream, cave) into simplified graphic images that best represented program monitoring objectives and content
 - designing a poster: combining colors, sizing fonts, arranging image and content, sizing document
 - researching imagery and understanding and complying with copyright laws
 - using graphics software (Adobe Illustrator)
 - participating in an iterative critique of developing a graphic design that involved the receipt from and response to critical feedback from reviewers