University of Nevada, Reno

UNR Global Water Center Post Docs in Aquatic Ecology

The University of Nevada's Global Water Center: Solutions for Sustainability (www.unr.edu/water) seeks dedicated and talented researchers to engage in projects that are collaborative and muti-institutional in nature. **To apply please send a) a cover letter (no more than 2 pages) of interest for each position request below and b) a full CV.** Cover letters should explicitly state your qualifications for each position including papers accepted or in review. Applicants must have clearly demonstrated the ability to publish data in peer-reviewed journals. Postdoctoral researcher positions require the completion of a PhD by the start date for the position. The salary rate for postdoctoral research positions is $47,500 per year.

Positions are for 2 years (unless noted below) with the annual renewal of contracts based on availability of funds and productivity of the researcher.

Material should be sent to Dr. Sudeep Chandra, sudeep@unr.edu by April 15, 2018. Position are open until filled. Please indicate the position you are interested in applying to (e.g. Position 1, Positions 2, etc.) based on the information below.

Position #1 Ecological Flows in Shasta River.

Location: Reno, NV and Mt. Shasta, CA.

Job Summary

Research quantifying the relationship between flow dynamics, habitat extent and condition, and drift invertebrate production in the Upper Shasta River, CA.

Background

Surface water diversions can impact the natural flow regime of rivers, which can, in turn, disrupt the ecology of entire riverine systems. Given the increasing demand on water for human use and increased frequency of drought, the need to optimize streamflow allocation that maximizes the benefit for both human and environmental resources is critical. Balancing water use and ecosystem needs, however, necessitates a means of relating flows to environmental outcomes and setting measurable environmental objectives, so that flow regimes can be crafted to maximize progress against both environmental objectives and water use. The Center is teaming with researchers from Trout Unlimited and McBain Associates and working with landowners along the Shasta River to quantify the relationship between water management, habitat, and ecosystem productivity.

Position

The researcher will be principally focused on investigating the relationship between flow, habitat extent and quality, and invertebrate production on the Shasta River. As a component of this, the Postdoctoral Fellow would lead the application and refinement of existing bioenergetics models to explore linkages in modeled fish growth potential with flow mediated patters in invertebrate production. Based on this, the Postdoctoral Fellow would additionally lead the development of recommendations for flow and habitat management that optimize ecosystem conditions. Flow scenarios and restoration actions would then become the basis for an adaptive management plan for environmental flows in the face of increasing constraints on water resources by both humans and climate change.

In addition to research oversight, a component of the Postdoctoral Fellow responsibilities would include development and implementation of a logical and physical data management structure to house and support the ongoing storage and service of Shasta River data over the long-term.

Principal Responsibilities

- Conduct research, including literature reviews, interviews with other issue experts and stakeholders, field based data collection, laboratory and computer based data synthesis and analysis, statistical analysis, spatial analysis, modelling, etc.
- Author science-based written documents related to research, planning, restoration, and monitoring efforts for a range of forums including grant reports and peer reviewed scientific journals.
- Represent the Center on collaborative project science team including engagement on the overall research program.
- Prepare and give oral presentations.
- Participate in outreach to landowners, decision makers, funders, and the general public.
- Supervise field and lab staff
- Develop a logical and physical data management structure to house and serve project data over the long-term

Qualifications

We seek an experienced, organized individual with a background in aquatic ecology, aquatic invertebrate ecology, salmonid ecology, aquatic food-web dynamics, and/ or related areas of specialization, as well as the ability to work collegially with a diverse suite of partners. Competitive candidates will have specific qualifications including:

- Experience developing, funding, and advancing on-the-ground scientific research projects and/or science-based restoration projects.
- Strong analytical skills and the ability to develop and apply conceptual frameworks to large and diverse datasets.
- Excellent communication and interpersonal skills.
- Strong public speaking and writing skills.
- Initiative and self-management.
- Creative and strategic thinking skills.
- Willingness to travel frequently from Reno, NV to Siskiyou County, CA. and to work remotely as necessitated by travel.
- Background in and familiarity with data management a plus
- Background and familiarity with fish bioenergetics models a plus
- Background and familiarity with stream hydrology a plus
- Familiarity with the regulatory structure surrounding rivers and fish a plus.
- Interest in working in a team setting to draft additional proposals and ideas for research.

Postdoctoral Position #2 Lake Tahoe: Aquatic Plant Invasion Ecology.

Location: Reno, NV and Lake Tahoe (CA-NV)

Job Summary

Research quantifying the efficacy of treatment methods for controlling invasive curly leaf pondweed and understanding the key life-history attributes of pondweed ecology and changes to the nearshore ecosystem in Lake Tahoe.

Background

There are a number of invasive species established in the nearshore of Lake Tahoe. A recent invader, Curly Leaf Pondweed (*Potamogeton crispus*), has the potential to augment ecosystem changes and facilitate the expansion of invasive bass species in the nearshore habitat. The Lake Tahoe Aquatic Invasive Species Implementation Plan specifically highlights the need for developing control strategies and answering critical gaps in knowledge for management for curly leaf pondweed.

Position

The researcher will quantify curly leaf pondweed life history traits and the impacts of pondweed to local nearshore ecosystem and biodiversity. Evaluations will occur from field measurements. In addition, the researcher will quantify the efficacy of plant control strategies on different parts of the plants life history. Plant control strategies include those currently utilized by the local management agencies (e.g. diver deployed mats, hand pulling, dredging) along with novel and emerging techniques (e.g. using large scale ultra violet light deployments) through laboratory experiments. Based on the field observations of life history responses of pondweed and an understanding of the efficacy of control methods, an implementation strategy will be developed for the lake to guide best management practices of control.

Principal Responsibilities

- Conduct research, including literature reviews, field based data collection, laboratory and computer based data synthesis and analysis, statistical analysis.
- Author science-based written documents related to research, planning, and monitoring efforts for peer reviewed scientific journals.
- Represent the Center on committees involving scientists and managers that seek to restore the nearshore of Lake Tahoe and prevent the future establishment of biological invasions.
- Prepare and give oral presentations.
- Participate in outreach to landowners, decision makers, funders, and the general public.
- Supervise field and laboratory undergraduate assistants.

Qualifications

We seek an experienced, organized individual with a background in aquatic ecology, invasion biology with an interest in restoration ecology and engaging with management agencies. Competitive candidates will have specific qualifications including:

- Experience developing, funding, and advancing on-the-ground scientific research projects and/or science-based restoration projects.
- Strong analytical skills.
- Excellent communication and interpersonal skills.
- Strong public speaking and writing skills.
- Initiative and self-management.
- Creative and strategic thinking skills.

- Willingness to work independently.
- Background in and familiarity with data management a plus

Postdoctoral Position #3 Climate and mountain lake ecological interactions.

Location: Reno, NV and Mt. Shasta, CA

Duration: 1 year with subsequent years dependent on funding

Job Summary

Research quantifying the relationship between alterations in climate and mountain lake ecological interactions.

Background

Climate change in the Western United States results in increasing stressors to mountain lake ecosystems. Stressors from climate may include disturbances from atmospheric rivers or increased drought resulting in mortality of forest structure, alterations in run off characteristics, and changes to lake hydrologic budgets. There has been very little research in the smaller lakes of the Western United States on the interactions of climate, climate related stressors to lake ecological function. We want to understand the role of climate change and subsequent alterations to the terrestrial environment and within lake habitats (littoral benthic and pelagic environments). The researcher can utilize a long term (>58 year) data set where measurements have been collected from Castle Lake. Measurements include physical, chemical and biological attributes in the lake. In addition, opportunities are available to conduct micro- and mesocosm experiments at the site and utilize measurements that can be collected from watersheds and lakes around Castle Lake station. The Castle station is situated at 1646 m above sea level, in a pristine but accessible area of Northern California's Siskiyou Mountains. More information about the current monitoring and research program can be found here, http://aquaticecosystemslab.org/projects/castlelake/

Position

The researcher will quantify the influence of climate to the terrestrial and/ or lake ecological dynamics. Specific research questions will be developed with the faculty advisors.

Principal Responsibilities

- Conduct research, including literature reviews, field based data collection, laboratory and computer based data synthesis and analysis, statistical analysis.
- Author science-based written documents related to research, planning, and monitoring efforts for peer reviewed scientific journals.
- Lead and participating in ongoing monitoring activities at Castle Lake station.
- Prepare and give oral presentations.
- Supervise field and laboratory graduate students and undergraduate assistants.
- Willingness to work in a remote, field setting for extended periods (3-4 months).

Qualifications

We seek an experienced, organized individual with a background in limnology, aquatic ecology, or ecosystem ecology. Competitive candidates will have specific qualifications including:

- Experience in developing and advancing on-the-ground scientific research projects.
- Strong analytical skills.
- Excellent communication and interpersonal skills.
- Strong public speaking and writing skills.
- Initiative and self-management.
- Creative and strategic thinking skills.
- Willingness to work independently.
- Background in and familiarity with data management a plus.