



Post-doctoral Position



Grand Canyon Monitoring and Research Center (USGS) & Utah State University

***Identifying linkages between dam operations and the population biology of salmonids in tailwater ecosystems***

We seek a highly motivated post-doctoral scientist to lead a synthesis of salmonid population biology in tailwater ecosystems in the Colorado River basin and Intermountain West. The successful candidate will have experience in aquatic ecology or fisheries biology as well as proven record of publications in peer-reviewed journals. Strong organizational, communication, and writing skills are required.

**Background:**

Salmonids often thrive in the artificial tailwater ecosystems found below dams, and many attributes of these populations (densities, size distribution, growth rates, downstream distribution, etc.) may be affected by dam operations. For example, in the tailwater below the Glen Canyon Dam, artificial floods have been linked to dramatic increases in densities of juvenile rainbow trout, but large cohorts of juvenile rainbow trout may contribute to declines in the abundance of larger trout desired by anglers. Large cohorts of juvenile rainbow trout may also disperse downstream where they pose risks (predation, competition) to rare native fish species in Grand Canyon. While water quality (i.e., relatively cold and clear water) is probably similar across all tailwaters, the daily and seasonal timing of releases may differ substantially among tailwaters depending on water delivery requirements, hydropower production, and reservoir volume. In addition, the temperature regime may vary greatly depending on dam configuration. These differences in water releases may affect salmonid populations through a number of mechanisms including changing metabolic costs or altering the abundance and composition of the invertebrate prey base. Identifying the causes of variation in salmonid populations among tailwaters is of particular interest because this information may allow managers to better predict how changes in operations at a particular dam will alter an important recreational resource and potentially affect native fish populations in downstream reaches.

**Project Description:**

To better resolve the linkages between dam operations and rainbow trout demography in the Glen Canyon tailwater, we seek a post-doctoral scientist to lead a synthesis of monitoring and research data from tailwaters throughout the Intermountain West, with an emphasis on tailwaters in the Colorado River basin. The post-doctoral researcher will make connections with the scientists from state, federal, academic, and tribal organizations needed to acquire relevant data from other tailwaters (i.e., data on the prey base, fish species, size, abundance and distribution, and discharge and water temperature data). Additionally, the postdoctoral researcher will have the opportunity to design and conduct new primary research studies in Glen Canyon and other tailwaters in the Colorado River basin. We expect that the synthesis will culminate with a series of high-impact peer-reviewed publications and a symposium organized by the post-doctoral researcher. Insights gained from the synthesis will help inform ongoing adaptive management experimentation in Glen and Grand Canyon (see [www.gcdamp.gov](http://www.gcdamp.gov)).

**Appointment Details:**

Term of appointment is two years with the possibility of a third year contingent on funding and adequate progress by the applicant; start date is as soon as possible, preferably no later than 1 February 2013. Review of applications will begin on October 15 and will continue until a suitable candidate is identified. **Salary is \$69,000/yr (GS12) + full benefits.** All local and professional travel costs will be covered. Scientist will be co-advised by research scientists at the USGS Grand Canyon Monitoring and Research Center and faculty at Utah State University; a strong partnership exists between the two, with some faculty holding dual appointments with both entities. The postdoc will be primarily located in Flagstaff, Arizona at USGS-GCMRC but will have the opportunity to spend up to 10% of their time at Utah State University, in the Department of Watershed Sciences. Opportunities for teaching courses and seminars as well as obtaining additional training while at Utah State are available.

**Institutional background:**

The U.S. Geological Survey's Grand Canyon Monitoring and Research Center (GCMRC; [www.gcmrc.gov](http://www.gcmrc.gov)) is the science arm of the Glen Canyon Dam Adaptive Management Program. The construction and operation of Glen Canyon Dam has fundamentally altered the physical template of the Colorado River (e.g., sediment inputs and water clarity, water temperature, geomorphology), which has in turn affected biological resources of concern including introduced rainbow trout and native, endangered fish populations. Scientists at GCMRC develop and implement research and long-term monitoring of physical, biological, and cultural resources downstream from Glen Canyon Dam needed to inform the adaptive management process.

Utah State University is a land grant public research university located just 15 minutes from two mountain ranges and within a half day's drive of six national parks, including Yellowstone. It's big-school opportunities with a small-school feel. The Department of Watershed Sciences at Utah State University offers comprehensive educational opportunities for post-graduate, graduate, and undergraduate students in the hydrologic and ecological sciences pertaining to watersheds. The faculty provide expertise in all aspects of the hydrologic cycle, in the conservation, restoration and management of fisheries and aquatic ecosystems, and in the remote sensing and geographic analysis of the earth's landcovers. <http://www.cnr.usu.edu/wats/>

**How to Apply:**

APPLICANTS MUST BE UNITED STATES CITIZENS. Verification of employment eligibility will be required at the time of appointment.

Interested candidates should send inquiries, letter of interest, curriculum vitae, and contact information to Theodore Kennedy ([tkennedy@usgs.gov](mailto:tkennedy@usgs.gov)), Charles Yackulic ([cyackulic@usgs.gov](mailto:cyackulic@usgs.gov)), and Phaedra Budy ([Phaedra.budy@usu.edu](mailto:Phaedra.budy@usu.edu)).