

## Watershed Research and Education Program River Restoration and Management Workshop

Workshop participants and guides convened in the Verde Valley to explore the challenges faced by the Verde River riparian area and watershed. The group was led by Dr. Alice Gibb and included teachers and environmental educators from around Flagstaff and the Verde Valley as well as specialists in areas of riparian area and watershed conservation. Participants were asked to read/review three readings that covered topics from native fish vs. non-native fish, native plant restoration, and historic use of the river as a drinking water and irrigation source. It was the goal of the workshop to relate the readings back to the river so that educators could take what they learned back into the classroom.

The workshop began with Chip Norton and Laura Moser discussing the challenges to the watershed by invasive plant species, specifically Russian olive, salt cedar, “Tree of Heaven”, and giant reed. These species were introduced accidentally and purposefully by humans near the watershed and are choking out the native riparian plants. Currently, government agencies have been doing their best to remove these plants and restore native plants. The group was brought to these areas of restoration to show the educators what is being done and to educate them on the current challenges of the projects.

The group was then brought on a boat tour of the Verde River with the help of Sedona Adventure Tours. The river trip allowed participants to see and interact with native and non-native species in and around the river. Aspects of the readings were also placed in context — such as water rights, non-native species of fishes, non-native water plants and the interactions between these disturbances. Educators observed non-native carp that can eat juvenile native species, and were told about the impacts of the non-native fisheries on the river. Educators were also able to see examples of historic water diversion and use along the river. They also saw areas where native plants had been successfully restored and areas where non-natives still dominate. The river trip also gave everyone an opportunity to talk more casually which led to exchanges of ideas for further developing the course and reaching out to a broader group of people. In the short term, the group was able to educate our river tour guide. This, in itself, will further the education of those people who travel on the Verde.



Lunch at the Horn Saloon became an opportunity to further the development of collaborative efforts initiated on the river trip. These collaborations will hopefully allow the WREP to reach out to other educators in the Verde Valley and possibly as far as Phoenix. Alice Gibb discussed possibilities for field trips and educator workshops with the hopes that they may take the information they gain back to the classroom. Educating the next generation is going to be critical for the next generation of watershed management and protection.

The final stop on the agenda was bubbling ponds fish hatchery, where teachers were educated about native fishes by the director Matthew O’Neill. Educators were able to see and interact with fish that are critically endangered in Arizona and were discussed on the river trip. Educators were shocked to learn that one or more species at the hatchery could go extinct during their lifetime. Matt gave the group a tour of Bubbling Ponds and allowed the educators to see the hatchery’s current efforts to reestablish these species throughout the Verde River Watershed and Arizona. Educators were surprised by the dire circumstances and showed great interest in showing their students Arizona’s native fishes.



The trip served as a learning experience for both educators and instructors and fostered the growth of collaborative efforts to bring awareness into the classroom. Teachers bring back intimate knowledge of the problems faced by the Verde River to students, with the hopes of educating the next generation on the importance of riparian corridor and watershed conservation.

### **Workshop Participants and Guides**

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