



## ***Instructionally Related Activities Report Form***

SPONSOR: LINDA O'HIOK  
DEPARTMENT: ENVIRONMENTAL SCIENCE AND RESOURCE MANAGEMENT  
ACTIVITY TITLE: LOS ANGELES AQUEDUCT AND OWENS RIVER FIELD TRIP  
DATE(S) OF ACTIVITY: APRIL 26-28, 2013

### **SUPPORTING DOCUMENTATION**

Attach:

- 1) Student evaluations or assessments- *removing all student names and other identifying information*
- 2a) Please list the number of students participating for each segment of the activity.
- 2b) For overnight activities, please include the majors and graduation dates or class level(s) of students on a separate sheet.
- 3) Any images demonstrating student participation (up to 6 images). Please include captions for all photos.
- 4) A summary of expenses.

E-mail to the IRA Coordinator at [lisa.ayre-smith@csuci.edu](mailto:lisa.ayre-smith@csuci.edu) within 30 days after the activity.  
*It is recommended that sponsors also retain copies of reports for your records.*

*Thank you for your commitment to engaging our students!!*

### **PLEASE ANSWER THE FOLLOWING QUESTIONS:**

#### **(1) PROVIDE A DESCRIPTION OF THE ACTIVITY;**

In late January, 2013, I was informed by the Metropolitan Water District (MWD) that they could not offer the three-day field trip to the Colorado River Aqueduct that was originally proposed and funded by the spring 2013 IRA. As a late substitution, and I believe a better field trip, students in ESRM 463 Water Resources Management participated in a three-day field trip to the Owens Valley to explore the environmental and social impacts of the City of Los Angeles (LA DWP) extraction and transportation of water via the LA Aqueduct to that city. The trip included visiting Owens Lake, the Owens Valley Visitor Center, Lower Owens Restoration Project (LORP), LA DWP Owens River Diversion, Alabama Gates, Southern California Edison Rush Creek Power Plant, Mono Lake and Visitor Center, Rush Creek Restoration, Paiute Reservation Restoration Pond, and Bristlecone Pine Forest.

In preparation for the field trip, students read their textbook and watched the film Cadillac Desert about the history of the City of Los Angeles, its explosive population growth in the late 1800's, and need to secure reliable sources of water. The trip included lectures on historical and current water and environmental issues in the City of Los Angeles and the Owens Valley, and discussions on policies, politics, conflicts, conflict resolution, the Public Trust

Doctrine and the environment, science and climate change.

The presenters included Lori Demody, a biologist from LA DWP, and Michael Prather, an Inyo County Water Commissioner, who showed us the Lower Owens River, diversion, and Alabama Gates, and spoke about the history of Owens Valley and the controversies of dewatering and restoration. Larry Freilich from Inyo County Water Department and Jason Smith from the Southern California Edison Rush Creek Power Plant discussed energy, climate change, and the restoration of the Owens River. Bartshe Miller from the Mono Lake Committee, gave us a tour of Mono Lake and Rush Creek restoration and talked about the lowering of Mono Lake and its fragile ecosystem, the Public Trust Doctrine, and the California Supreme Court decision to protect Mono Lake. Hillary Behr, an AmeriCorp intern at the Bishop Paiute Tribe Reservation showed us the restoration pond to protect the endangered Owens Valley pup fish. Dunja Sawka, a CSUCI student, gave us a tour of the ancient Bristlecone Pines and discussed how the 4000 year old trees provide us with historical evidence of climate change.

The class was presented with a summary of the history of water exploitation in the Owens Valley. For example, in 1900, William Mulholland, Chief Engineer for the City of Los Angeles, identified the Owens River, which drains the Eastern Sierra Nevada Mountains, as a reliable source of water to support Los Angeles' growing population. To secure the water rights, Los Angeles secretly purchased much of the land in the Owens Valley. In 1913, the City of Los Angeles completed the construction of the 223 mile, gravity-flow, Los Angeles Aqueduct that delivered Owens River water to Los Angeles. As the population continued to grow, Los Angeles mined the groundwater in the Owens Valley and constructed a second aqueduct to siphon water from the Mono Basin. The catastrophic environmental consequences of dewatering the Owens Valley and Mono Basin resulted in devastation of the Owens Lake ecosystem and significant lowering of Mono Lake. The viable agricultural community in the Owens Valley was effectively eliminated. To protect the Mono Lake ecosystem, the Mono Lake Committee brought suit against the City of Los Angeles. In 1983, the California Supreme Court enforced the Public Trust Doctrine over water resources and ruled that the state has an obligation to protect Mono Lake, which required reconsideration of past water allocation decisions. The City of Los Angeles had to provide water for the environment. After 100 years, the controversy is still unresolved and vigorously debated.

Students visited critical water supply facilities (aqueduct and reservoirs) for the City of Los Angeles and restoration sites, and discussed factors affecting reliability, safety, quality, quantity, and cost of water resources with respect to mitigate environmental impacts.

**(2) HOW DID THE ACTIVITY RELATE TO A COURSE(S) AND/OR LEARNING OBJECTIVES?**

The field trip addressed the goals and objectives of Water Resources Management. Students presented posters and provided demonstrations at the 2<sup>nd</sup> Annual Water Symposiums for Madrona Elementary School, to formulate connections between theory taught in the classroom and things seen and concepts covered during the field trip. Students demonstrated that they understand the factors influencing water availability in the Southern California and particularly Los Angeles, understand the concepts and principles of water and watershed management, can specify and quantify the important components of water management systems, can define water management problems, can predict external effects, can identify possible causes, and propose and evaluate solutions from both environmental science and resource management perspectives. They have also articulated the process steps of environmental conflict resolution and how the conflicts span borders and a understanding of the role of language and dialogue in policy development. The Owens Valley field trip provided students an opportunity to understand the objectives of the City of Los Angeles, as well as the politics/negotiations required to accomplish these goals, and negotiate water quantity and quality for their constituents and protect the environment.

**(3) WHAT DO YOU SEE AS THE STRENGTHS OF THE ACTIVITY?**

Following the Los Angeles Aqueduct for hundreds of miles through the Mojave Desert, visiting the diversion of Owens River, touring the restoration sites and power plant, and experiencing the environmental of the Owens Valley and shrinking Mono Lake, provided students the opportunity to apply the theories and concepts learned in the classroom to the actual processes of acquiring and delivering a vital resource of water to the public.

**(4) WHAT WOULD YOU SAY ARE/WERE THE ACTIVITY'S WEAKNESSES?**

Although the student read the Los Angeles/Owens Valley case study in their textbook, the major weakness would be lack of student preparation in terms of understanding the major issues in the area.

A logistical weakness was limited bus daily travel time. We could only use the bus for 10 hours per day. Once we started driving we needed to complete all of our activities within 10 hours which was restrictive. Any hikes that were planned had to be eliminated from the schedule.

**(5) HOW WOULD YOU IMPROVE THIS ACTIVITY FOR NEXT TIME?**

Prior to the trip, I would have the students research and present overviews

about the history, water rights issues and the property acquisition process, ecosystems and restoration, as well as the Public Trust Doctrine and California Supreme Court decision. The objective would be for students to have more information to ask questions of our guest speakers and promote class discussion.

There is so much to see and learn about in the Owens Valley and Mono Basin. Three days is not enough time to fully appreciate the area. I would like to extend the trip by one day.

**(6) WHAT DID YOU LEARN FROM THE PROCESS?**

I learned that students are passionate about and are understand issues related to water. And they recognize that climate change and overpopulation need to be addressed to adequately conserve and equitably distribute this vital resource. I assessed their learning by evaluating their posters and process demonstrations at the Water Symposium, as well as giving a written exam. I was quite impressed by the application of concepts they had learned as well as their creativity towards water conservation.

E-mail to the IRA Coordinator at [lisa.ayre-smith@csuci.edu](mailto:lisa.ayre-smith@csuci.edu) within 30 days after the activity.

ESRM Water Resources Management  
Owens Valley Field Trip  
April 26-28, 2013

Budget

Transportation	\$	3,285.00
Roadrunner Shuttle		

Room and Board		
Lodging 2 nights	\$	1,081.92
Bishop Rodeway Inn		

Food (approximately)	\$	<u>400.00</u>
	\$	4,766.92