

Instructionally Related Activities Report Form

SPONSOR: Linda O'Hirok
PROGRAM/DEPARTMENT: ESRM
ACTIVITY TITLE: ESRM 463 Owens Valley Field Trip
DATE (S) OF ACTIVITY: March 3-5, 2017

Please submit via email to the IRA Coordinator along with any supporting documentation at david.daniels@csuci.edu within 30 days after the activity. Thank you for your commitment to engaging our students!

A. ADDRESS THE FOLLOWING QUESTIONS:

- (1) PROVIDE A DESCRIPTION OF THE ACTIVITY;
 - (2) HOW DID THE ACTIVITY RELATE TO A COURSE(S) AND/OR LEARNING OBJECTIVES?
 - (3) WHAT DO YOU SEE AS THE STRENGTHS OF THE ACTIVITY?
 - (4) WHAT WOULD YOU SAY ARE/WERE THE ACTIVITY'S WEAKNESSES?
 - (5) HOW WOULD YOU IMPROVE THIS ACTIVITY FOR NEXT TIME?
 - (6) WHAT DID YOU LEARN FROM THE PROCESS?
 - (7) WHAT ARE STUDENT RESPONSES TO THE ACTIVITY? ATTACH STUDENT EVALUATIONS OR ASSESSMENTS (IN ACCORDANCE WITH FERPA RESTRICTIONS YOU MUST REMOVE ALL PERSONALLY IDENTIFIABLE STUDENT INFORMATION)
 - 8) GIVE A SUMMARY OF EXPENSES FOR THE ACTIVITY (DO NOT INCLUDE ACCOUNTING STRINGS)
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B. ATTENDEE LIST- SUPPORTING DOCUMENT:

In addition to the report form, *in a separate document*, attach to your email a list of attendees complete with each student major and grade level. This for IRA Committee reference only and will not be published on the IRA website. Include your name and the title of your IRA activity on the document.

C. IMAGES FROM ACTIVITY:

Please embed 3-5 images in this document (or attach in .JPEG format) that demonstrate student participation with captions/titles.

(1) PROVIDE A DESCRIPTION OF THE ACTIVITY

ESRM 463 Water Resources Management

Owens Valley Field Trip, March 3-5, 2017

And 6th Annual Water Symposium, May 1, 2017

DESCRIPTION OF THE ACTIVITY;

The students in ESRM 463 Water Resources Management participated in a three-day field trip (March 3-5, 2017) 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, June Mountain, Rush Creek Restoration, and the Bishop Paiute Reservation Restoration Ponds and Visitor Center.

In preparation for the field trip, students received lectures, 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 class also received a summary of the history of water exploitation in the Owens Valley and Field Guide. 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.



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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. 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.

The guest presenters included Bill Deane, biologist and project manager 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. Daniel Pritchette from White Mountains Research Center in Bishop gave a lecture on the early history-pre-Los Angeles water diversion in the Owens Valley. Larry Freilich from Inyo County Water Department and Jeremy Veenker 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. Harry Williams, an Elder of the Bishop Paiute Tribe Reservation showed us the restoration pond to protect the endangered Owens Valley pup fish. He also provided a lecture about the impact of LADWP on the tribe. Lastly, we were fortunate to be able to take the June Mountain ski lift up the mountain to see all of Mono Lake and Rush Creek and gain perspective of the geography of the area, the grand scale of the LADWP Los Angeles Aqueduct diversion, and the significant snow pack this year.

The field trip addressed the goals and objectives of Water Resources Management. Students presented posters and provided demonstrations at the May 1st, 2017, 6th Annual Water Symposium for Madrona Elementary School and Redwood Middle School in Thousand Oaks, 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 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 also articulated the process steps of environmental conflict resolution and how the conflicts span borders and understand 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.



I assessed their learning by evaluating their posters and process demonstrations at the Water Symposium, as well as giving a written exam and had them write reflections of both the Owens Valley Field Trip and Water Symposium. I have attached a few of these reflections from both CSU Channel Islands students and Madrona Elementary students and photographs. I have been quite impressed by the application of concepts they had learned as well as their creativity towards water conservation and water education.

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

Students take the concepts they have learned in class and apply them to a complicated real world problem in the Owens Valley and Mono Lake. The geography of the area, mountains on both sides of the valleys, is contained, and allows the students to not be too overwhelmed by thinking about all of California's water issues. This geography provides them the opportunity to focus.

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

Not enough time to appreciate all of the complex issues in this valley.

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

I would like to make this a four-day trip and perhaps go to Death Valley and evaluate an area with 4 inches a rain a year.

(6) WHAT DID YOU LEARN FROM THE PROCESS?

I have learned that students are passionate about and 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. In particular, the unprecedented drought we have experienced and one year of significant precipitation requires that students understand these complicated issues. One year of precipitation does not solve the drought problem.

(7) WHAT ARE STUDENT RESPONSES TO THE ACTIVITY? ATTACH STUDENT EVALUATIONS OR ASSESSMENTS (IN ACCORDANCE WITH FERPA RESTRICTIONS YOU MUST REMOVE ALL PERSONALLY IDENTIFIABLE STUDENT INFORMATION)

The Owens Valley trip felt similar to going home for me because of the wide-open spaces, snow covered mountains, and miles of Joshua Trees. I definitely have a love affair with the history and geology of the area, so this trip was right up my alley. I really enjoyed listening to each speaker's different perspective, some more optimistic than others. Instead of only getting one side of the story we got multiple; as a result, I feel confident that I have a clear picture of the resources and the way they are managed, or in some cases not managed.

Now, every time I look at a lake I will wonder if it is a glacial mountain deposit or a lake formed by earthquakes. And every time I look at a mountain range I'll look for either a v or u shaped valley and then try to find the moraines. Owens Valley and the lectures there taught me a little more about special awareness. Being more aware of what surrounds us is something that I believe is missing in society. As Resource Managers and Environmental Scientists it is our job to try to educate people and make them more aware of the natural world around them. Owens Valley is an important place for many reasons: politically, geographically, and intrinsically but most people don't know it exists. This needs to change and everyone should visit Owens Valley at least once.

Knowing where our water comes from and how it impacts the source is part of this knowledge. Besides the immense beauty of the area, Owens Valley can teach us how not to manage as well as how to manage our scarce resources.

I believe this trip is very important for our ESRM programs and also for our school altogether. I would love to see it offered to more than just the water resource management class and as a longer educational trip. Students should understand the impact of taking water from one place to have another place thrive.

Reily Pratt

This past weekend, I journeyed to Owens Valley to see first had the impacts of water management practices on society and the ecosystem. The valley has served as an important source of water for the city of Los Angeles since the construction of the aqueduct in the beginning of the twentieth century. Moving water from the valley was controversial, and local opposition culminated in attempted dynamiting of the aqueduct in 1927. Since then, water management in the area has been a source of contention between LA Department of Water and Power, the Inyo County Water District and the Paiute Tribe native to the area.

The last major stop on our trip was Mono Lake. As a terminal lake, all water that drains into the lake has nowhere to go. Water level has far receded from historical levels, a fact that is evident in the tufa far from the current shore. This is largely due to extraction by LA, and drought. The goal of restoration efforts is to raise the lake another thirteen feet, which will be an enormous boon to the riparian areas of Mono's tributaries, which are heavily impaired from drought and historical floods. Mono Lake is unique from a water management perspective, in that it is one of the few places in California with a specific water plan. If the lake falls another two feet, all diversions must cease. Noting the ecological value of a place and not simply the monetary value of the resources it holds, gives me hope that our view of nature is shifting towards a more ethical treatment of the biota and landscape we inhabit.

Stephanie Jones
Dr. O'Hirok
ESRM 463

Owens Valley Field Trip Reflection

The three day field trip out to the Owens Valley was one of the best learning experiences I have had at California State University, Channel Islands. It was a great opportunity to be able to experience what the Owens Valley looks like in real life after learning about it in the classroom.

ent perspectives of the water wars between LADWP and the

Owens Valley Committee. Owens Lake is still so beautiful even though it does not have very much water besides what is there for the dust mitigation. I would have to say that the highlight of the first day was seeing around 1,700 American Avocets flying together above the lake – it was truly magical.

I enjoyed touring Southern California Edison’s Hydro-plant at June Lake. I am an extreme advocate for renewable energy and it was very interesting to learn about the hydroelectric process and especially that 98% energy is transferred from the water. Lunch at June Mountain Saturday afternoon was so much fun and I am thankful we had the opportunity to be able to go up the ski lift and play in the snow. Also, the glacial geomorphology around June Mountain was amazing and I was able to understand the concept a lot better by seeing examples of it all around me.

My favorite part of the trip was visiting Mono Lake. The calcium carbonate tufa towers make the lake so unique. Bartshe Miller gave us a really great, informational tour of the lake. I was really interested to hear that Mono Lake is one of the few places in California that has an active drought management plan. Overall, it was a very fun learning experience and I am so glad to have had the opportunity to go out and experience all that the Owens Valley has to offer.

Rhakia Alcares

ESRM: Water resource

Dr. O’Hirok

Owens Valley field trip

The field trip to Owens Valley and the Mono basin really opened up my eyes to how resources are managed. Often times we go about our daily lives, so accustomed to what we do, where we get our food and our water that we don’t think about where our resources originate. I didn’t know that the Mono basin was full of life, created tufas, and hosted a significant amount of birds in season. I didn’t know how a hydropower plant works, or how it’s monitored. I didn’t know how



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how much water is taken from the lake and given to LA, or what that looks like. This trip allowed me to understand because I was there, I could physically see the process and the impacts. I feel more motivated to keep learning about my natural world, how it pertains to me and others, and how I can make a difference in protecting the environment

C. PLEASE INCLUDE UP TO 6 IMAGES IN THIS DOCUMENT TO DEMONSTRATE STUDENT PARTICIPATION



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