

Bosque Ecosystem Monitoring Program

Black Institute for Environmental Studies at Bosque School

November 2014

www.bosqueschool.org/bemp.aspx

Fundamentals in the Field Fall Tour



This fall BEMP hosted our annual Fall Field Tour with our community partners Will Barnes with the New Mexico State Land Office (SLO), Jennifer Owen-White with the Valle de Oro (VdO) National Wildlife Refuge and Paul Tashjian with the US Fish & Wildlife Service.

Our group of 40+ professionals, students and interested community members toured the VdO and adjacent SLO BEMP sites. Both agencies gave overviews. Paul and Jennifer shared the updated refuge land management plan (top photo) and Will noted the SLO's commitment to getting and keeping New Mexican's on the land (bottom photo).



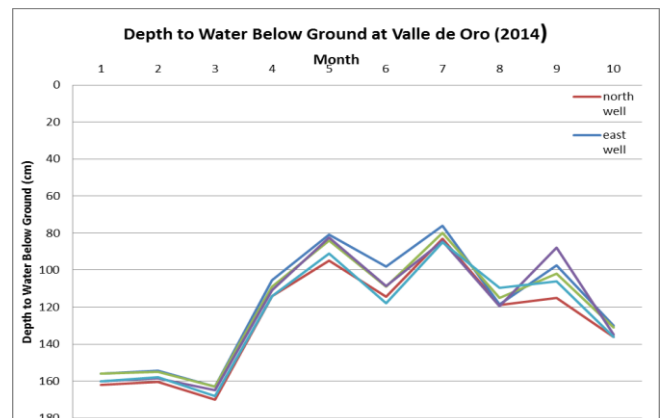
BEMP Co-Director Kim Eichhorst (middle photo) updated agency representatives, students and volunteers on the importance of long-term monitoring, vegetative responses to drought and landscape alteration, as well as building successful community partnerships.

BEMP Science Coordinator Jennifer Schuetz provided the following graph of the first year of BEMP shallow groundwater measurements.

Thank you for the GREAT day outside!



Photos by Dan Shaw

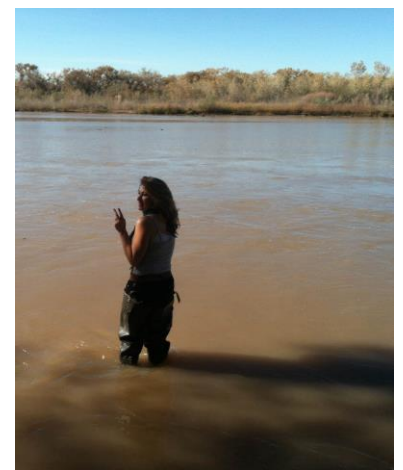


EPA Urban Waters

Jennifer Schuetz, Science Coordinator

The first week of November 2014, BEMP began its first of six rounds of intensive water quality data collections as part of an EPA Urban Waters grant. BEMP staff collected water samples to measure levels of *E. coli*, PCBs and pesticides, and pharmaceuticals and personal care products in the Rio Grande and irrigation ditches from the 550 bridge in Bernalillo to Los Lunas, including several sites in Albuquerque. UNM interns helped staff collect field parameters such as dissolved oxygen, pH, conductivity, turbidity, temperature and anions (chloride, nitrate, sulfate, phosphate and bromide) in the river, ditch and ground water throughout this area. Subsequent collections will be in April, July and November 2015 and April and July 2016, with the project wrapping up September 2016. BEMP looks forward to seeing this data used by the EPA and NM Environment Department. Special thanks to Scott Murray, lead of the monitoring team for NM Environment Department (NMED) Surface Water Quality Bureau and Jodey Kougioulis, NMED quality assurance officer!

A secondary facet of this data collection is education and outreach to K-12 students. We are excited to have UNM interns and high school students join us in the collections of field parameters with oversight by BEMP staff. In addition, BEMP staff will feature this data set in some of our classroom activities; which students will use to learn about water pollution and data graphing.



Top left: New Mexico Environmental Department's Scott Murray shares water quality testing tips with BEMP staff, from left: Jennifer Schuetz, Rowan Converse, Kim Fike and Kelly Steinberg. *Top right:* UNM Field Assistants Matt Leister (left) and Sean O'Neill (right) assess water quality along the Middle Rio Grande Valley.

Bottom left & right: APS School on Wheels students of brave the Rio Grande's brisk temperatures in November; left = Dominic Lopez, right = Jade Archuleta. *Bottom center:* Teacher Dr. Terry Dunbar shares his botany skills and interest with his high school students at their National Hispanic Cultural Center BEMP site. These students also participate in the New Mexico Department of Game and Fish's Watershed Watch program!



UNM, Sevilleta and Valles Caldera Connections...



This spring, UNM BEMP intern Gary Johnston will work with the Sevilleta Long-Term Ecological Research (LTER) network and the Valles Caldera National Preserve to process over 10 years of jackrabbit survey data as part of an independent study (Biol 499).

Gary, pictured on top left, is a current Biol 408L student in our BEMP Bosque Intern class. After his first adventure rabbitting, Gary was hooked on the ecological connections and will work to present BEMP and Valles Caldera/Sevilleta partner data at UNM's Biology Research Day. He shares a brief look into his interests below...



"Growing up, my father regularly took me outdoors and taught me the importance of protecting the land and wildlife. He also shared the calming effects nature has on us and our need to be one with nature. These ideas have carried over into my adult life and have driven me to use the biological knowledge I learned in school to help protect our great outdoors and the species that inhabit it by working towards a career in wildlife biology. When I learned about the Bosque Internship class I immediately signed up for it because I saw the potential of learning hands on the skills I will need for the future. I like collecting data that helps our bosque ecosystem and in the process, helps children learn the benefits of science and what nature provides us. My interests include conservation biology, restoration ecology, and the functions of trophic cascades in ecosystems."

Welcome Michael Jensen, our EPA Ambassador!

In early December I will officially be the new **Middle Rio Grande Urban Waters Ambassador** assisting projects under the *Urban Waters Federal Partnership*. The Federal Partnership is an agreement among 14 federal agencies to look for ways to collaborate on - or at least look for intersections among - projects in urban areas that impact directly or indirectly on water-related issues. There are 19 Urban Waters sites across the country.

In the Albuquerque area, there are nine projects that range from the Valle de Oro National Wildlife Refuge and Middle Rio Grande restoration, to corridor improvement on Bridge Street, to climate change scenario planning in Central New Mexico. Reflecting the Partnership, I will be a BEMPer, paid for by the EPA, and working out of the HUD office in the downtown federal building. Prior to this exciting new opportunity, I worked for 9 1/2 years for Amigos Bravos – a river conservation non-profit based in Taos - most recently as their Middle Rio Grande Projects Director. I have also traveled a lot and have lived and worked in Norway, Germany and Brazil, as well as in San Francisco, Austin and Washington DC.



I wish I'd had a school like the Bosque School to go to!



UNM BEMP office moves & Bio 408/508L students get creative...

Our UNM BEMP office, housed in the Biology Annex since our start in 1996 has been upgraded to Castetter Hall Room 184. The move occurred just before the Thanksgiving holiday and makes it easier for UNM students, faculty and researchers to find us.

Every semester, BEMP staff Kim Eichhorst, PhD; Jennifer Schuetz, Science Coordinator and Kimi Scheerer, Education Coordinator work with 14-22 students to learn about monitoring along the Middle Rio Grande Valley. Students participate in the three core goals of BEMP: science, education and stewardship. The class breaks the syllabus down into a variety of traditional and non-traditional teaching methods including: classroom lectures, engaging hands-on activities, field work, mentoring in the community and an environmental education component! Students that excel in the class have the opportunity to work with staff as mentors, and apply what they have learned via field, lab and education work in the community.



Left: Fall 2014 UNM students have class at our Badger BEMP site, just south of the Alameda bridge in Albuquerque; Center: BEMP's now-empty former office in the Biology Annex; Right = BEMP students learn about the effects of urban run-off with our StormWater Science class!

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Albuquerque Community Foundation ♦ Bernalillo County Open Space ♦ Bosque School ♦ Greater Rio Grande Watershed Alliance ♦ Goodman Family ♦ LANL Foundation ♦ McKee/Crawford Foundation ♦ Middle Rio Grande Conservancy District ♦ McCune Charitable Foundation ♦ Mid Rio Grande Stormwater Quality Team (AMAFCA; Bernalillo County; City of Albuquerque; CUIDAD Soil & Water Conservation District; NM Dept. of Transportation; SSCAFCA & the Town of Bernalillo) ♦ National Science Foundation's Schoolyard Education Program at UNM's Sevilleta Long Term Ecological Research Site ♦ New Mexico Association of Soil & Water Conservation Districts ♦ New Mexico State Parks ♦ Sandoval County ♦ The Nature Conservancy ♦ U.S. Army Corps of Engineers ♦ U.S. Bureau of Reclamation ♦ USDA Forest Service



OUR MISSION

*The mission of the Bosque Ecosystem Monitoring Program (BEMP) is collaborative **long-term** ecological monitoring of key abiotic and biotic processes and characteristics to promote continued education, understanding and stewardship of the riparian ecosystem to scientists, teachers, students, policy makers and the public.*

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