

Bosque Ecosystem Monitoring Program

Black Institute for Environmental Studies at Bosque School

Volume 7, Issue 4 ~ October 2012



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.

www.bosqueschool.org/bemp.aspx
edited by: Kimi Scheerer



THE UNIVERSITY of
NEW MEXICO

BOSQUE SCHOOL



scholarship • community • integrity

Science, Education & Stewardship on the New Mexico Landscape

As the school year ramps up again BEMP gets a whole new set of students out in the bosque for a year of data collection... take a peek at our back-to-school beginnings!

Photos 1 & 2 – After collecting our BEMP data, students from **Wilson Middle School's** mixed grade *Survey of Science* class journal along the river. This trip marks the first of about eight that they will take into the bosque throughout the year. Teacher Mary Erwin, has monitored the **Rio Grande Nature Center BEMP** site with students for the past nine years!

www.rgnc.org

Photo 3 – Fourth & fifth graders from **Dolores Gonzales Elementary** picnic under the shade of cottonwoods after collecting their BEMP data and visiting the **San Juan Chama Drinking Water Diversion Dam** just north of their Calabacillas site!

www.aps.edu

Photo 4 – **School of Dreams Academy (SODA)** teacher Bonnie Dodge and her mixed 7-9th grade students readily jump for BEMPin' JOY in the *dry* riverbed of Los Lunas. During our entomology prep class for their upcoming pitfall trapping session, students easily crossed the riverbed and kept their shoes DRY as riverflow = zero.

*See more about low river levels on
pages 2 and 3!*



www.sodacharter.com





UNM Field Office FUN

Left: BEMP Field Coordinator **Jen Schuetz** (far right) met with 10 water professionals from Sudan, Egypt and Ethiopia in late May to showcase BEMP's use of volunteers to collect scientific data. These visitors were in the U.S. on a month-long visit to learn about trans-boundary water issues as part of the **Nile Basin Initiative** (www.nilebasin.org). The Albuquerque Center for International Visitors coordinated their visit to Albuquerque. Jen's dream is to see BEMP used as a model to monitor riparian and river health in each of these countries!

Right: This past summer BEMP was lucky to have two outstanding Bosque School high school students, **Jonathan Brearley** (left) and **Abby Kuchar** (right) assist with BEMP field and lab work. They are pictured here in the river with BEMP Field & Lab Assistant **Danny Ortwerth** (center) collecting water chemistry data in the Rio Grande in Albuquerque. Throughout the summer they helped with monthly monitoring, pitfall trapping, river and groundwater chemistry data collections in the field. They spent countless hours sorting leaf litter in the lab and closed the gap between collected and processed data! They also got some great experience in entomology, identifying and counting the arthropods from pitfall traps along the valley.

We greatly appreciated their help and great attitudes ~ Thank you Abby and Jon!!!



Low River Levels

UNM BIO 408 Bosque Intern Nick Homziak (left) is silhouetted along the western banks of the Rio Grande in Albuquerque just before print (September 21st, 2012). This year marks an obvious year of drought along the middle Rio Grande with portions of the riverbed drying out in Los Lunas (page 1, photo 4) and farther south. The increased nature of islands and sandbars noted in this picture illustrates the decreased flows of the sediment rich Rio Grande.

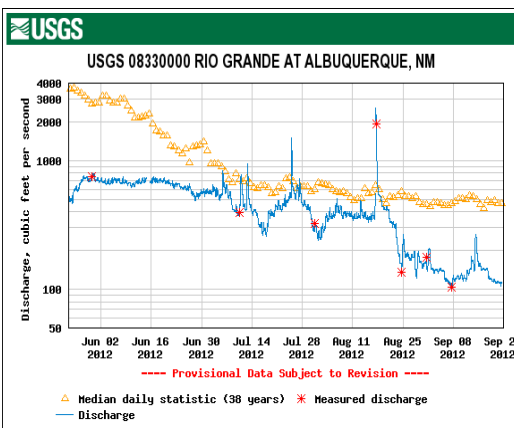
<http://waterdata.usgs.gov>

Click on **Current Conditions** and then **New Mexico...**

I used gauge 8330000.

When referencing the USGS Central Bridge river gauge (graph on left), the Sept. 21st value of **114 cubic feet/second (cfs)** is shockingly low compared to the 30 year median which is closer to 500 cfs for this time of year. Yikes! Take a look at the Albuquerque Bernalillo County Water Utility Authority website where they encourage residents to reduce watering AND water use for fall!

www.abcwua.org



U.S. Drought Monitor

September 18, 2012

Valid 7 a.m. EST

New Mexico

Drought Conditions (Percent Area)

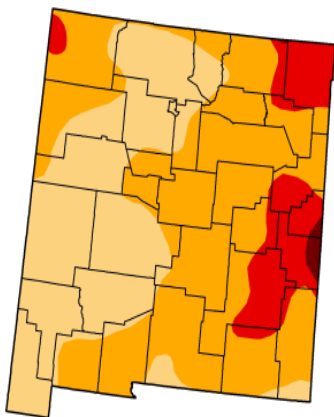
| | None | D0-D4 | D1-D4 | D2-D4 | D3-D4 | D4 |
|---|------|--------|--------|-------|-------|-------|
| Current | 0.00 | 100.00 | 100.00 | 62.56 | 12.25 | 0.66 |
| Last Week (09/11/2012 map) | 0.00 | 100.00 | 100.00 | 62.40 | 12.35 | 0.66 |
| 3 Months Ago (06/19/2012 map) | 0.00 | 100.00 | 99.64 | 81.29 | 25.17 | 0.00 |
| Start of Calendar Year (12/27/2011 map) | 8.63 | 91.37 | 87.60 | 72.15 | 23.37 | 7.57 |
| Start of Water Year (09/27/2011 map) | 0.00 | 100.00 | 96.40 | 88.99 | 69.61 | 35.13 |
| One Year Ago (09/13/2011 map) | 0.00 | 100.00 | 100.00 | 89.33 | 72.20 | 38.22 |

Intensity:

| | |
|-----------------------|--------------------------|
| D0 Abnormally Dry | D3 Drought - Extreme |
| D1 Drought - Moderate | D4 Drought - Exceptional |
| D2 Drought - Severe | |

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

<http://droughtmonitor.unl.edu>



Released Thursday, September 20, 2012
David Simera, Western Regional Climate Center

Bosque Ecosystem Monitoring Program (BEMP) Comprehensive Report: 1997-2009



Kim D. Eichhorst, Daniel C. Shaw, Jennifer F. Schmetz, Kimi Scheerer,
Melanie Keithley, and Clifford S. Crawford



BEMP Comprehensive Report NOW ONLINE!

www.bosqueschool.org/reports.aspx

Click and view BEMP's comprehensive overview with site data and management strategy interpretations in regard our field sites. BEMP highlights the effects of: fire, flood, mechanical clearing, the San Juan Drinking Water Diversion dam and more, along the often urban interface of the Rio Grande corridor.

Want your OWN hard copy? Contact Kimi at:
kimi.scheerer@bosqueschool.org

Drought got ya down...? Down on water use we hope! ☺ A little further research with the National Oceanic and Atmospheric Administration (NOAA) and the National Weather Forecast Office here in Albuquerque helps me discover the image above. As the colors note, **ALL** of New Mexico is experiencing some form of drought... what can you do to help?!

www.srh.noaa.gov/abq/?n=drought

2013 BEMP Student Congress Events...

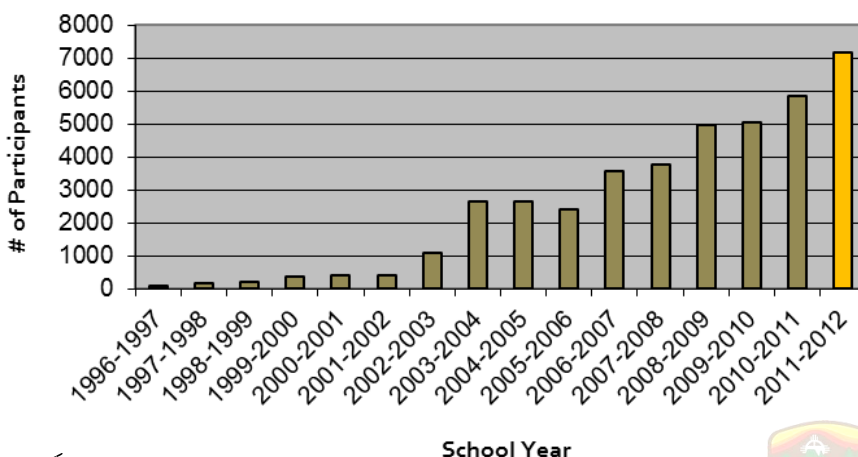
BEMP Outreach Numbers 2011-2012

Grades 7-12th at Golondrinas... Thursday, April 25th
Grades K-6th at Bosque School, Abq... Friday, April 26th

This past 2011-2012 school year BEMP worked with an **all-time high** of **7,184**...students, teachers, community members, college interns, research partners, parents, agency professionals, festival attendees, tribal representatives & government leaders! BEMP is thrilled to connect with so many environmental stewards in New Mexico. **Special THANKS** to Melanie Keithley and her teaching hawk **Gavilán** AND the **Mesilla Valley Bosque State Park** for sponsoring a BEMP field site and education programs in southern New Mexico!



BEMP Annual Participation



BEMP Field Photo: Belen

Reynolds Forested – Aug. 2012



Photo: BEMP Educator Kim Fike

2012-2013 Participating Schools & Groups

| | |
|----------------------------------|------------------------------------|
| Albuquerque Biopark | Las Cruces Public Schools |
| Abq. Institute of Math & Science | Los Lunas High School |
| Alvarado Elementary | Montessori of the Rio Grande |
| Bandelier Elementary | Mountain Mahogany |
| Bernalillo Middle School | NM Museum – Young Explorers |
| Bosque Farms Elementary | New Mexico State Parks |
| Bosque School | North Star Elementary |
| Citizen Schools | Ohkay Owingeh Comm School |
| Cottonwood Valley Charter School | Pueblo of Santa Ana |
| Dolores Gonzales Elementary | Rio Grande Elementary |
| Earthforce: Summer of Service | Rio Rancho Cyber Academy |
| Escuela Luz de Mundo | Roots & Shoots |
| Georgia O'Keeffe Elementary | Santo Domingo Middle School |
| Harrison Middle School | School of Dreams Academy |
| Holy Ghost Catholic School | School on Wheels Alternative HS |
| Hoover Middle School | Sevilleta National Wildlife Refuge |
| Hope Christian School | The Montessori School |
| La Academic de Esperanza | Van Buren Middle School |
| La Cueva High School | Wilson Middle School |

New Mexico Watershed Watch / BEMP Partners

Cimarron High School, Cochiti School, Desert Academy, East Mountain High School, Espanola Valley High School, NM School of the Arts, Santa Fe Prep & United World College



IMPORTANT DATES

Oct. 11-13th – **NMSTA/NMCTM/EEANM Conference**
at **Bosque School, Albuquerque**
register at: www.nmsta.org

Oct. 15-19th – **BEMP monthly monitoring**

Oct. 26th - Sevilleta NWR jackrabbit survey

Oct. 29-30th – *Rio Rancho Water Festival*

Nov. 19-20th – **BEMP monthly monitoring**

Dec. 17-21st – **BEMP monthly monitoring**

Feb. 26th – **Crawford Symposium 4-7pm**

Bosque School ~ Albuquerque, NM



Photos: Madeleine Carey, BEMP Summer College Intern

Holy Cute Critter Kimi!!! That's right... found HERE in the mountains of New Mexico, this furry friend of low temperatures scampers about collecting forbs, grasses, sedges, twigs, moss and lichen (mmm... mmm!)

Who is this animal?

Contact Kimi at kimi.scheerer@bosqueschool.org to brag about your smarts, share stories OR get info about regional research! ☺

THANK YOU

to those that sponsor BEMP

AMAFCA, Stormwater Quality Team ♦ Albuquerque Community Foundation ♦ Bernalillo County Open Space ♦ Bosque School ♦ Captain Planet Foundation, Inc. ♦ Educational Foundation of America ♦ Goodman Family ♦ LANL Foundation ♦ McKee/Crawford Foundation ♦ Messengers of Healing Winds Foundation ♦ Middle Rio Grande Bosque Initiative/U.S. Fish and Wildlife Service ♦ Middle Rio Grande Conservancy District ♦ 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 Forest & Watershed Institute at Highlands University ♦ Norcross Foundation ♦ PNM Inc. ♦ Sandoval County ♦ U.S. Army Corps of Engineers ♦ U.S. Bureau of Reclamation ♦ USDA Forest Service ♦ 7 Bar Foundation