



Natural Resources Education Quarterly

Fall 2003, Volume 2, Issue 1

Mission:

Facilitate programs and services in environmental education for the people of the San Luis Valley.

Fall Outdoor Field Trips

Come dance with the cranes, frolic in the sand, hide in the forests and explore your watershed. Schedule your FALL FIELD TRIPS today with one of the many SLV Environmental Education providers. Our fall issue is dedicated to describing some creative ways to get your students learning outside.

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Sand Dunes

Great Sand Dunes offers 1-2 hour, standards-correlated field education lessons on geology, high desert adaptations, animals & ecosystems, and cultural history. Programs are available for pre-kindergarten through twelfth grade either at the Dunes or in your classroom. We are also interested in working with teachers who'd like to use the Sand Dunes for other types of in-depth student experiences. For example, last year we did repeated programs with a local second grade in three different seasons, so they could experience seasonal changes to habitats in the dunes. We also worked with a fifth grade class that read "Hatchet" by Gary Paulson and then came to the dunes to learn about survival and wilderness skills. If you'd like to pursue something along these lines, please contact us to discuss your ideas.



Water & Agriculture

It's Time to Think About "Food for the Future:" Educational Opportunities Through Your Conservation Districts

Every fall, an exciting event takes place in 6th grade classrooms throughout the San Luis Valley, the 6th grade conservation poster contest. This year the theme of the contest is "Food for the Future". In preparation, students learn about several conservation practices that assist with the conservation of our natural resources. They will then be given poster board and time to create an artistic representation of how conservation will play a role in ensuring that there will be "food for the future"...a challenging assignment! At the end of the contest, winners are recognized and prizes are awarded for a job well done.

"Field to Table" tours are an excellent way to introduce your students to the world of agriculture. On these tours a local farmer or rancher explains what occurs during harvest time, how the produce is stored and sent to market. Youth are able to participate in hands-on activities as well as engaging in

The Great Sand Dunes is also in the midst of creating a long-term strategic plan that will guide future program development. We encourage all valley teachers to participate and give their input into this process! We need to hear YOUR voice.

To sign up for a program or participate in our planning process, call 719-378-6344 or email Kathy_Zelenka@nps.gov.

SLV ECEC
 2205 State Street
 Alamosa, CO 81101

Web Site:
<http://www.slv-rcd.org/ecec.html>

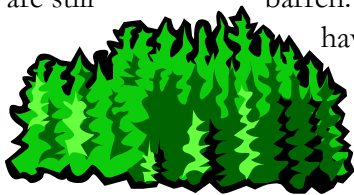




Wet & Dirty in South Fork

For over ten years, the South Fork Education Center has been meeting the needs of K-12th grade SLV teachers. This center, administered by the Rio Grande National Forest, offers a slew of educational opportunities in an outdoor setting. River, pond, meadow, and forest ecozones are easily accessible from the center.

Last year, the Million Fire ripped through the forest above the education center. Although this fire has created great hardship for some of the local residents, it has also created a fascinating outdoor laboratory. Students from third grade through high school study fire and succession with age appropriate lessons. Several middle and high school classes are doing long-term studies to determine how the land and vegetation changes over time. This year, some parts of the burned area have really greened up, while other parts are still barren. It is rare for students to have such a great opportunity to view the aftermath of a large fire.



Students can also study aquatic food webs, determine water quality, and learn about watersheds, while wading into the South Fork of the Rio Grande. The river is a short 10-minute walk away from the education center. There are lessons available for all grade levels, but third through sixth grade students also get to view their “catch” through 20X-40X dissecting scopes. Every autumn, the education center fills with the sound of excited voices as

students peer through the scopes at algae and aquatic bugs.

New this year is a lesson for upper elementary students about terrestrial insects. Students will be able to search for insects in the soils, meadows and trees around the center. This lesson will lead to an understanding of insect adaptations and the important roles they play in nature.

Lastly, don't think the South Fork Education Center is just about science. There are excellent



opportunities to do sensory, art, writing, and math activities. In fact, many of these types of activities are already incorporated into the standard lessons. Additionally, the education specialist is always ready to work with teachers to meet their specific needs. For more information, or to

Del Norte 6th grader studying the burned area at south fork

schedule a trip to the South Fork Education Center, call or write Mike Blakeman at: 719-657-6023 or mblakeman@fs.fed.us.

Come dance with the cranes, frolic in the sand, hide in the forests, and explore your watershed. Schedule your FALL FIELD TRIPS today with one of the many Environmental Education providers in the San Luis Valley see page 7 for a list of resources.

San Luis Valley Education Events

CAEE Teaching Outside the Box Conference

April 30 - May 2, 2004 at Snow Mountain Ranch, near Granby, CO.

Internationally known nature educator and author Joseph Cornell will give the keynote speech at next spring's conference. Workshops will focus on natural and cultural history, outdoor skills and team building, assessment and research, as well as artistic projects suitable for classroom or outdoor use. Earn 1 hour of teacher recertification credit for participating in 16 hours of workshops over the weekend. Credit is offered through Colorado School of Mines. More details can be found on the Colorado Alliance for Environmental Education's website: www.caeec.org.

Through generous support of the San Luis Valley Earth Day Committee, ECEC has obtained **funds to sponsor one teacher from the valley to attend the 2004 Teaching Outside the Box Conference.**

Look for application details in the Winter 2004 ECEC newsletter.



2003 Environmental Education Transportation Grant Applications Available on ECEC website or by calling Carol Gurule at 589-3907.

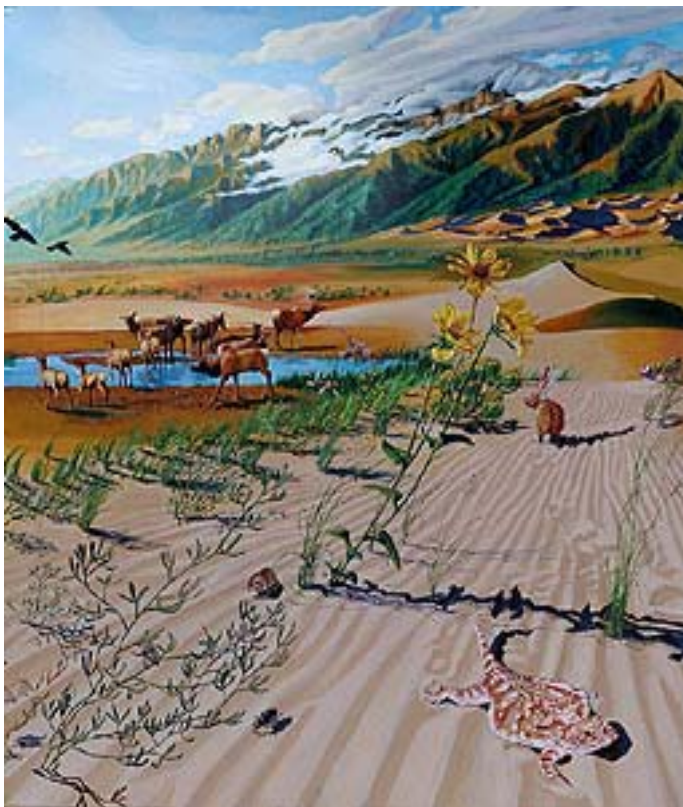
Autumn Environmental Education Workshop Extravaganza

Great Sand Dunes and Zapata-Medano Ranch
September 27th and 28th. Participants will receive **Project Learning Tree** and **Project Food, Land and People** activity guides and materials. Join us in this beautiful setting to experience the themes and activities of these two great curricula. Share with other classroom teachers and students the engaging activities that help us to make a connection with our environment. Time: 9am-6pm on Saturday and 8am-3pm Sunday. Target audience: K-12th grade educators/ Cost: \$60.00 for materials and \$25.00 for meals. Participants need to arrange for their own overnight accommodations (group camping will be available at the Sand Dunes and a hotel near the park will be reserving rooms for us). 1 semester hour graduate credit available through Colorado School of Mines. To register call Debbie Ackley at 719-327-2820 ext. 49.

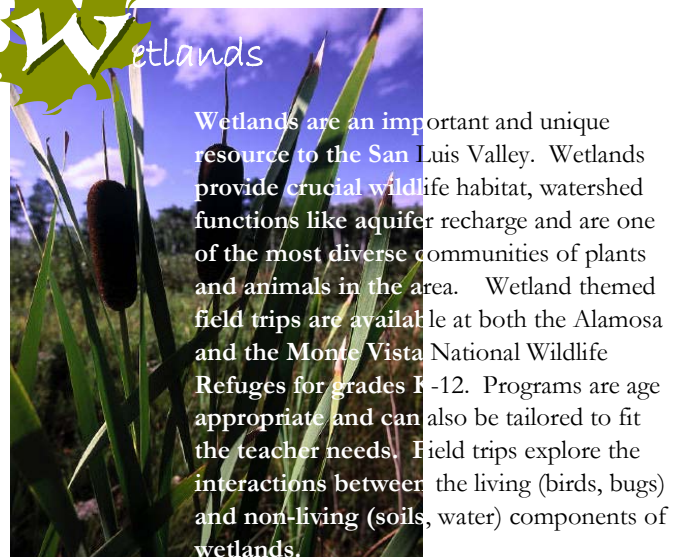
Watch for FREE Posters

Need a way to help bring some of the San Luis Valley's amazing outdoor resources into your classroom? Local artist David Zelenka has donated an original painting depicting unique features of our sand sheet ecosystem to be reproduced as a poster for all San Luis Valley teachers. Great Sand Dunes staff collaborated with the artist to develop standards-correlated educational activities on the poster's reverse side. There is also an interactive version of the poster online (www.nps.gov/grsa) where students can learn more about the plants and animals depicted in the poster.

Great Sand Dunes National Monument and Preserve is giving these posters to all valley teachers free of-charge in Fall 2003. Posters will be sent to the principals' attention at each school in the 14 valley districts.



The Sandhill Crane is a beloved migratory resident of the San Luis Valley. 20,000 of these graceful creatures visit us each spring and fall. The Monte Vista National Wildlife Refuge offers great opportunities throughout the fall to see these creatures. Spring and fall field trips at the Refuge are centered on these charismatic mega fauna and their migratory habits. Cranes offer learning opportunities in many subjects from art and literature to math and science. Programs are still being planned and can be tailored to a teacher's particular curriculum needs. A typical program includes a visit by Refuge education staff to your school and a full day field trip with guided hands-on learning activities at the Monte Vista National Wildlife Refuge. Programs are offered for students aged K-12.



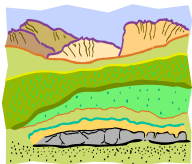
Wetlands are an important and unique resource to the San Luis Valley. Wetlands provide crucial wildlife habitat, watershed functions like aquifer recharge and are one of the most diverse communities of plants and animals in the area. Wetland themed field trips are available at both the Alamosa and the Monte Vista National Wildlife Refuges for grades K-12. Programs are age appropriate and can also be tailored to fit the teacher needs. Field trips explore the interactions between the living (birds, bugs) and non-living (soils, water) components of wetlands.

Students also explore personal connections to these buggy, muddy swamps in fun hands-on learning experiences. Both the

Crane and Wetland programs at the National Wildlife Refuges are UNDER CONSTRUCTION and feedback is encouraged.

The Refuge also offer in-class presentations on the National Wildlife Refuge System, and The National Jr. Duck Stamp Contest (Interactive lesson on wildlife art).

To schedule a field trip call Kristen Gilbert, Outdoor Recreation Planner at the Alamosa/Monte Vista National Wildlife Refuge at 589-4021 or Kristen_gilbert@fws.gov.



Teacher Resources Page

Soil Supreme

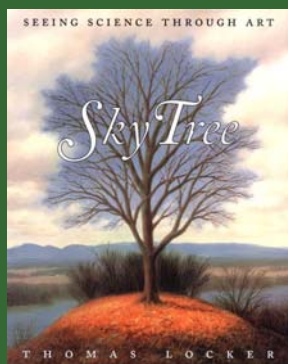
Students can investigate the three dominant soil layers through a fun and delicious project called "Soil Supreme." First, the class will need one cake pan, or some clear plastic cups. Students will crush vanilla wafers and place at the bottom, of the pan. This will represent parent material. Chocolate ice cream or pudding can be used next, representing the middle part of soil. Next, students add a layer of crushed dark chocolate cookies to form the top layer of the soil. Gummy worms also make a nice addition to topsoil. Freeze the final product for two hours before serving.

1. Cut a piece of Soil Supreme and discuss the layers of this cross section with students. Help students understand that the cake is a model of the real world.
2. Hand out pieces of Soil Supreme and enjoy. (Remember to eat in a clean classroom rather than in a science laboratory, and be mindful of any food allergies.)

Be sure to clean eating areas.

Fall Reading

Sky Tree, Seeing Science Through Art by Tom Locker



Science and art appreciation join forces in this unusual variation on the theme of changing seasons. Accomplished oil paintings in a high romantic style show a single tree and its surroundings in transition—in deep winter or at the peak of autumn, for example. Quasi-surrealistic scenes of clouds, birds and stars filling bare winter branches challenge the reader to imagine the tree interacting with the sky and its inhabitants, and to ponder the liberties representational artists may take. Accompanying text lightly points out incremental changes in atmosphere and their effects, and each image is paired also with a question or two directly addressing the reader ("Why does this painting make you feel sad? Is the tree dying?"; "How does this painting capture the stillness of a snowy day?").

Written by Candace Christiansen, a chemistry teacher as well as a children's author, the questions and their answers (included in an illustrated epilogue) give a mildly scientific cast to basic lessons in understanding art. A modest introduction, but neither art nor science really blooms. Ages 5-9. Copyright 1995 Reed Business Information, Inc.

Classroom Extension

- *Studies of Change:* Have your students record in journals or on a classroom bulletin board the seasonal changes of a tree in your school yard. For older students have them pursue a phenological (study of change) observations of their choice examples: migratory bird sightings throughout the fall, the lunar phase, the path of the sun as we progress to winter, etc.

Colorado Junior Duck Stamp Contest Moves to the SLV



The Federal Junior Ducks Stamp Conservation and Design Program is a national art and environmental education program which solicits waterfowl art from kids from all over the country. For the past ten years the Colorado Contest has been coordinated from the Rocky Mountain Arsenal near Denver. **As of 2004 the contest has been transferred to the Alamosa/Monte Vista National Wildlife Refuges in the San Luis Valley.**

Historically participation in the contest has centered around the Front Range, with little participation from the San Luis Valley and other rural areas. As the new coordinator of the contest, the Refuge hopes to sustain Front Range participation, but also encourage San Luis Valley teachers and students to participate.

The contest is a perfect way for science teachers to integrate art, and a great way for art teachers to integrate science. **This fall the Refuge will be offering an outreach program (1 hour in-class lesson) about the contest and integrating art and science in the classroom.** There is also a national curriculum and local teachers guide for participating teachers. Each year a panel of artists and natural resources experts pick 100 Colorado winners to compete in the National Contest in Washington DC. Information packets will be available in early October 2003. For entry forms, to schedule a program, obtain a teacher guide, or to get more involved in this great program contact Alamosa/Monte Vista National Wildlife Refuge, Kristen Gilbert, 589-4021, kristen_gilbert@fws. Check out the national website at www.duckstamps.fws.gov.

Continued from page 1... Water and Agriculture

conversations surrounding agricultural topics. Fall is an excellent time to set up a "Field to Table" trip in order to observe harvest.

The riparian and river trailer is another excellent teaching tool that is requested often throughout the San Luis Valley. This mobile trailer is available throughout the fall and spring and can easily be transported to your school (it tends to freeze in the winter time!). The river trailer illustrates several concepts such as; sediment transport, meanders, watersheds, wetlands, aquifers, stream bank erosion, as well as the functions of a healthy riparian system. Often, teachers request the river trailer for an entire day so that I can meet with several classes.



Another water education presentation that is available is the groundwater model. This model is easy to transport any time of year and allows youth to visualize many hydrological occurrences such as, the water table, both the confined and the unconfined aquifers, how water moves through the Rio Grande Watershed, ground water recharge, and much more.

In addition to the above-mentioned options, there are also presentations covering water conservation, snow surveys and water forecasting as well as organic farm tours, tree plantings/living snow fence creation, river study, and water quality trips.

Please call Angie today at 719-589-3907 x114 to set up a classroom presentation, a field trip, or to learn more about additional conservation education opportunities.

"Nature is not only all that is visible to the eye — it also includes the inner pictures of the soul." ~Edward Munch

Student Reflections on Outdoor Field Trips



STUDENT OPPORTUNITY: Are you inspired by your outdoor experiences in the San Luis Valley? Submit your essays, artwork, poetry, or conservation project descriptions to ECEC and they might just get published! ECEC is looking for student work to publish in our quarterly newsletter and on the web. Inspire others and feel the pride of publishing! Submit your creations to Kristen Gilbert, 9383 El Rancho Lane, Alamosa, CO 81101 or via email at Kristen_gilbert@fws.gov.

Prickly Pear
White thorns
Green
Round
Water inside
Hurts to touch
Poison in needles
- 5th grade student, Sargent Elementary (Sand Dunes)

Wonderful
Even
To
Living
Animals
Now
Deceased
- 6th grade student, Sangre de Cristo Elementary (Blanca Wetlands)

I especially enjoyed the chicken trailer. It was cool how it could be moved and how the chickens would eat the seeds and other things. They made the trip great not just O.K.
- 5th grade student, Sargen Elementary (La Jara Organic Farm)

For the forestry study we hiked up into the hills and measured the trees that were burned in the Million fire. We really are helping out next years class so they can compare their results to ours and see how much the environment has changed.
- High school student, Del Norte High School (South Fork Ed. Center)

I learned what a tommyknocker does. What the ribs of a mining area are, what the back is, what the face is, and that women were bad luck in mines!????!!
- 4th grade student, Sargent Elementary (Creede Mining Museum)

EE Contacts

Geology, Animals & Ecosystems, Cultures & Archaeology	Great Sand Dunes National Monument and Preserve. . . Kathy Zelenka. . . 719-378-6344 Kathy_Zelenka@nps.gov
Forest Ecosystems	Rio Grande National Forest . . . Mike Blakeman . . .657-3321
Wetland Ecosystems and Wildlife	Alamosa/Monte Vista National Wildlife Refuges . . . Kristen Gilbert. . . 589-4021
Water and Soil Conservation	SLV Conservation Districts . . . Angie Graber. . . 589-3907 X114
Service Learning	Volunteer Connections. . . Kristene Mooman. . . 719-589-5688. . . vcf@amigo.net
Natural Resource Conservation Camp at Beaver Creek	Colorado State University Extension Service. . . Robert Mathis. . .657-0213
Other Resources	The Nature Conservancy. . . Fitz Fitzgerald Colorado State Forest Service. . . Boyd Lebeda SLV Resource Conservation and Development. . . Jim Mietz