



Southeast Fire Management Success Story

Learning About Burning Workshop for Educators Features Mammoth Cave National Park's New Wildland Fire Curriculum

More than a dozen educators from across the country participated in a wildland fire education session, titled "Learning About Burning," at the National Interpreter's Workshop in Mobile, Alabama in November 2005. National Park Service Southeast Region Fire Education Specialist Michelle Fidler and Mammoth Cave National Park Environmental Education Coordinator Cheryl Messenger co-presented the two-hour session. After a brief overview of wildland fire from a Southeastern perspective, participants had a chance to explore activities from Mammoth Cave National Park's new wildland fire curriculum.



Utilizing Belt Weather Kits



Measuring Wind Speed



Practicing Size Estimation Skills

Mammoth Cave National Park is located in southcentral Kentucky. The component ecosystems within the Mammoth Cave area karst landscape are functionally connected and must be managed holistically in order to restore appropriate biodiversity. Fire is a powerful determining force in vegetation communities. Whether a given area with fire potential is prairie, savanna, or forest is governed largely by fire regime, and these vegetation types define habitats, including food supply, for a broad spectrum of wildlife. For the river and connected aquatic cave ecosystem, vegetation determines the amounts and quality of water, sediment, and organic matter that enter. For the terrestrial cave ecosystem, the types and quantities of insects, fungi and plants available to bats, woodrats, and cave crickets are largely determined by major vegetation types, several of which are fire dependent. Therefore, Mammoth Cave has embarked on a program of safety minded and ecologically sound prescribed burning.

To help raise public awareness of the park's fire management program, environmental education staff at the park developed a wildland fire education curriculum. It is designed as an interdisciplinary unit that meets both state and national education standards and is specifically correlated to Kentucky state standards. It will serve 4-8 grade classrooms in the park's surrounding 10 county Barren River Area Develop District, providing opportunities to bring together students' science, social studies, math, physical education and language arts skills. The curriculum is a proactive step to begin changing values and understanding in the local community.

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The following is a summary of lesson plans in Mammoth Cave's Fire! Curriculum:

Recipe for a Fire: To illustrate the fire triangle, the teacher distributes necklace cards, designating students as Fire, Heat, Fuel, and Oxygen. If the students designated as Fire are able to capture sufficient amounts of heat, fuel, and oxygen – and bring them back to their home base – the fire survives. If not, the triangle topples and the fire is extinguished.

“Go Fire”: **Stopping the Flames:** Based on the oriental game of “GO,” this activity illustrates fire fighting strategies and allows students to practice decision making skills. One team becomes the fire. The second team is the firefighters. A wildland fire is started when a “flame” is placed on any intersection of the playing field. The fire manager wants to contain the fire by surrounding it with four of his firefighters. But if he is not careful, his firefighters may become surrounded by fire! The team with the greatest number of players at the end of the game is the winner.

Fire and Man – Friend or Foe: Students interpret different cultural viewpoints in regard to fire and learn how man's view of fire has changed over time. They work with one of four groups to read a fictional journal entry from either a young pioneer/adventurer, a Native American, a young wife moving west with her husband, or a firefighter with the National Park Service. Students will research and discuss the culture of the group represented in their journal entry.

Hot Habitats (Classified): Students learn about habitats and discover that fire is not always detrimental to an animal's habitat. They work in small groups to review cards that describe habitat preferences for bison, elk, bobcat, bald eagle, coyote, cottontail rabbit, and quail and their adaptations to fire. Students write classified ads to advertise the type of “home” their assigned animal would prefer.

Plot Monitoring: Students establish a monitoring plot near their school, where they gather and analyze data to learn about the correlation between fuel loads and fire potential.

Acre by Acre: Have you ever wondered how firefighters know that a fire burned 3,000 acres today or is 20% contained? Students experiment with methods of estimating the size of a plot.

Fire and Weather: Working in teams, students use weather symbols to interpret a weather map and decide which areas may be safe or unsafe to send firefighters in to suppress a wildland fire.

Weather in Your Pocket: Changing weather can spell danger for firefighters. Working in groups, students use belt weather kits to measure relative humidity, calculate wind speed, take dry-bulb and wet-bulb temperature readings, use a compass, and compute rate of fire spread.

Firefighting Costs Money! The teacher conducts a show-and-tell show session with articles of clothing for wildland firefighters and other specialized equipment provided in a traveling trunk. Students estimate the weight of equipment and calculate the cost to outfit a firefighter.

Mammoth Cave National Park plans to offer one-day training workshops to offer teachers in-depth exposure to wildland fire management, science, and policy and hands-on experience using activities in the curriculum. The park will also create several traveling trunks for teachers, filled with curriculum supporting equipment and supplies. The Mammoth Cave Wildland Fire Curriculum is available on-line at <http://www.nps.gov/mac/FireCurriculum.pdf>.