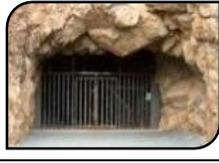


Selected AMLU Abandoned Mine Remediation Projects (2006)

(Click on pictures below or scroll down for more information.)

	<p>Partner(s): BLM Ridgecrest Field Office Closure type: Bat and owl compatible cupola Location: Adjacent to Highway 395, San Bernardino County Completed: December 2006</p>
	<p>Partner(s): State Parks, Bureau of Reclamation, Teichert Closure type: Bat gates Location: El Dorado County Completed: November 2006</p>
	<p>Partner(s): USFS Eldorado National Forest Closure type: Polyurethane foam Location: El Dorado County Completed: November 2006</p>
	<p>Partner(s): BLM Needles Field Office Closure type: Bat gate Location: ½-mile from Route 66, San Bernardino County Completed: September 2006</p>
	<p>Partner(s): USFS Eldorado National Forest Closure type: Culvert gate Location: ½-mile from elementary school, El Dorado County Completed: June 2006</p>
	<p>Partner(s): USFS Tahoe National Forest, Western States Trail Foundation Closure type: Polyurethane foam Location: Along Western States Trail, Placer County Completed: June 2006</p>
	<p>Partner(s): BLM Bishop Field Office, USFS Inyo National Forest, Bat Conservation International (BCI) Closure type: Bat cupola and bat gate Location: Inyo County Completed: April 2006</p>
	<p>Partner(s): BLM El Centro Field Office, CCC Closure type: Fences Location: Imperial County Completed: March 2006</p>
	<p>Partner(s): BLM Palm Springs Field Office, BCI Closure type: Bat gates Location: Riverside County Completed: January 2006</p>

Bat Cupola Adjacent to Highway 395, San Bernardino County, December 2006



BEFORE



AFTER

In December 2006, the AMLU partnered with the Ridgecrest Field Office of the Bureau of Land Management (BLM) and contracted with Frontier Environmental Solutions to install a cupola on an extremely dangerous shaft. This shaft, which is reported to be 1,600 feet deep, is located less than 20 feet from a busy stretch of Highway 395.

The presence of a great horned owl required a closure design that could accommodate the owl's use of the shaft. This resulted in the first bat-and-owl-friendly (i.e., allows for bat and bird ingress and egress) closure installed by the AMLU. State Parks Off-Highway Motor Vehicle Recreation Division "Green Sticker" fees helped to fund the bat surveys for this project.

"BLM's partnership with the AMLU is providing outstanding opportunities to protect the public land users and local wildlife populations. The "395 Shaft Cupola" is just one of many abandoned mine protection examples the partnership has completed in the recent years. There are approximately 75 other mine shafts in the immediate area that will be assessed for wildlife values. The shafts with wildlife (bats and owls) values will be protected. The remaining shafts will be either backfilled or fenced to protect the general public." – Richard Forester, BLM California State Office

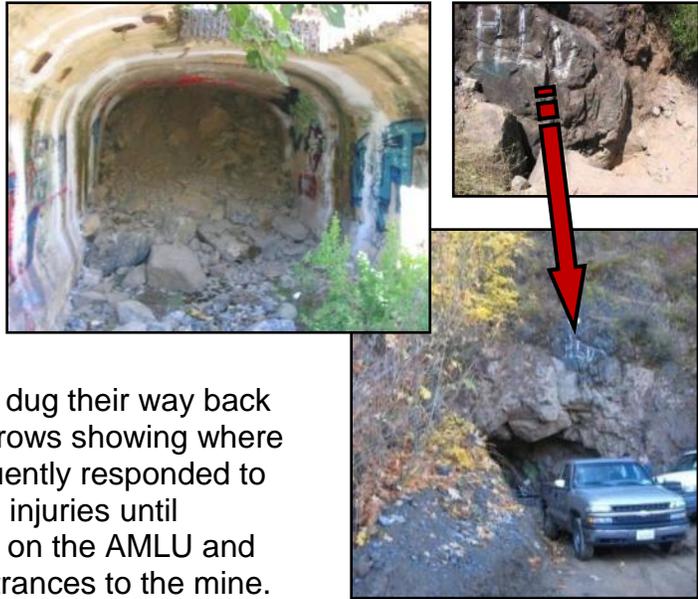
Bat Gates at Limestone Mine/Cave, El Dorado County, November 2006

In November 2006, the AMLU—in partnership with California State Parks, the U.S. Bureau of Reclamation, and Teichert Aggregates—helped to install bat-compatible gates at the historic Hawver Cave/Mountain Quarries Mine in the Auburn State Recreation Area. Hawver Cave was originally discovered in the 1880s by miners looking for limestone. From 1908-1910, many ice-age animal remains were discovered and documented in the cave.

Mining of limestone at “Mountain Quarries” (other names were applied over the years) started in 1910. When operating, it was the largest limestone mine in Northern California. After work ceased in 1942, most of the equipment was removed from the site, and the main entrance was blocked with fallen rock.

In subsequent years, however, people dug their way back into the abandoned mine, and drew arrows showing where others could enter. Park rangers frequently responded to partygoers, vandalism, and occasional injuries until recently, when State Parks staff called on the AMLU and its partners to close several known entrances to the mine.

BEFORE GATING (with rock pile)



DURING (rock cleared)



AFTER



AFTER (closeup)

“The Limestone Quarry project was accomplished as a partnership between California State Parks, Teichert Aggregates (Cool Cave Plant) and the California Abandoned Mine Lands Unit (AMLU) of the Department of Conservation. This mine safety project could not have been accomplished without the financial assistance and technical advice of the AMLU.” -- Mike Lynch, Supervisor, Environmental Resources Group, California State Parks at the Auburn State Recreation Area.

Polyurethane Foam Closures at the “Bottomless Pits,” El Dorado County, November 2006



BEFORE

On October 26, 2006, a collaborative effort between the U.S. Forest Service (USFS) and the AMLU in the Eldorado National Forest (NF) resulted in the remediation of four dangerous abandoned mine shafts in one day. One unfenced shaft was located within 12 feet of a well-traveled forest trail. Vandals had cut a large hole into a sturdy chain-link fence that the USFS had installed around another one of the shafts.

All four shafts, with diameters up to 10 feet and depths up to 78 feet, were closed using plugs of polyurethane foam supplied by the ALMU.



DURING

“Thanks to the support and enthusiasm of the staff at the Abandoned Mine Lands Unit, we’ve done a great job in mediating a very hazardous situation! I look forward to working with the Department on future projects.” -- Charis Parker, Eldorado NF Wildlife Biologist and Acting District Ranger

“I am pleased with the efforts that all have put into this effort. I leave for my new job in Washington, DC knowing that you have made our forest a little safer.” -- Timothy A. Dabney, Eldorado NF District Ranger



AFTER

Adit, 1/2-Mile from Route 66, San Bernardino County, September 2006



BEFORE

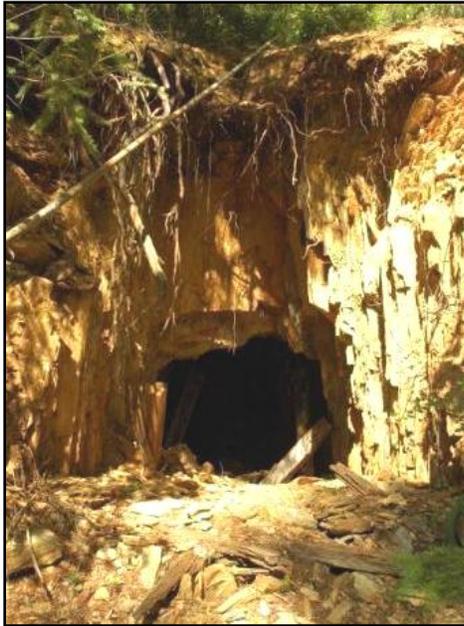


AFTER

In September 2006, Frontier Environmental Solutions, contracted by the AMLU in partnership with the Needles Field Office of the Bureau of Land Management (BLM), installed a bat-compatible gate on an adit that had a hazardous 50-foot-deep winze (vertical opening) located approximately 15 meters inside the mine portal (entrance). The location of the abandoned mine near a heavily traveled road, the ease of accessibility, and the presence of the winze had made this mine an inviting physical hazard to humans until the bat gate was installed. The gate also protects California Leaf-nosed Bats (*Macrotus californicus*) that use the adit for a maternity and day roost. State Parks Off-Highway Motor Vehicle Recreation Division "Green Sticker" fees helped fund the bat surveys for this project.

"The BLM Needles Field Office is satisfied with the completed product, and we appreciate the financial contribution your office was able to make towards this project.... It has been a pleasure working with you on this project. Hopefully, your office and staff with the Needles Field Office will be able to partner on future abandoned mine projects." -- Heather McKenny, Wildlife Biologist, BLM Needles Field Office

Otter Creek Mine Remediation, El Dorado County, June 2006



BEFORE



DURING

On June 27, 2006, Dolver Company Inc., contracted by the AMLU in partnership with the El Dorado National Forest, installed a 20-foot-long steel culvert with a bat-friendly gate on an abandoned mine adit on federal land approximately ¼ -mile from the Otter Creek School in El Dorado County. Earthmoving equipment was then used to collapse unstable earth and rock around the culvert. The adit was so close to the school that AMLU staff could hear children singing while onsite developing the mine closure plan.

"It's a good thing [the adit was sealed], since this is so close to the school. Safety's always an issue. I'm not sure whether any of our students were aware of the mine, but if they had found it, well, kids are naturally curious." -- Darcy Knight, Vice President, Black Oak Mine Unified School District

Western States Trail Collapsed Mine Closure, Placer County, June 2006



BEFORE

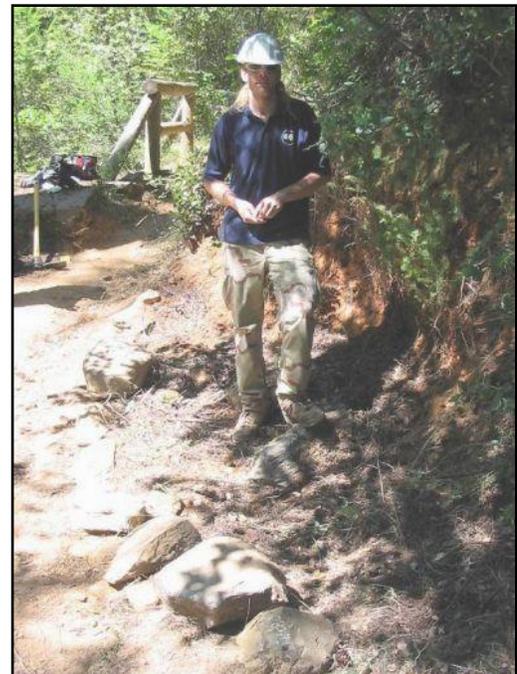


DURING

In June 2006, two days before the start of the Western States Endurance Run and about six weeks before the start of the 52nd Tevis Cup Endurance Ride, AMLU and Tahoe National Forest staffs closed a collapsed abandoned mine under a section of the Western States Trail in Placer County. When first discovered, Western States Trail Foundation volunteers flagged the trail and the site of the collapse to warn users of the potential danger.

In one day, workers poured 17 cubic yards—the equivalent of a 10-foot-by-15-foot room—of polyurethane foam (PUF) provided by the AMLU into the mine opening. At the end of the day, there was little evidence the hole ever existed.

“This teamwork and generous donations of time and materials reflects positively on the California DOC Office of Mine Reclamation. We greatly appreciate your agency’s help and look forward to continuing our excellent relationship in the future.” -- Steven T. Eubanks, Forest Supervisor, Tahoe National Forest



AFTER

Bat Gate Building Workshop, Inyo County, April 2006



BEFORE (with cupola frame around shaft)



AFTER

From April 24-28, 2006, the AMLU cosponsored a Bat Gate Building Workshop in Bishop, CA with the Inyo National Forest (NF), Bishop Field Office of the Bureau of Land Management (BLM), and Bat Conservation International. Students received hands-on instruction on the techniques and intricacies of proposing and constructing a bat gate on an adit (horizontal opening) and a cupola on a shaft (vertical opening). Ed Winchester from Frontier Environmental Solutions and Pat Brown and Bob Berry of Brown-Berry Biological Consulting were on hand to provide instruction and insight. The Inyo NF's Aeroplane Mine served as the classroom for the bat gate construction portion of the week and the Southern Belle Mine was the training grounds for the latest cupola to be built on the Bishop BLM Office's land. Both projects went smoothly and were completed ahead of schedule. The students finished the week dirty and tired, but also full of new real world knowledge and smiles. State Parks Off-Highway Motor Vehicle Recreation Division "Green Sticker" fees helped fund the bat surveys for this project.



Paymaster Mine Hazard Mitigation Project, Imperial County, March 2006



BEFORE



AFTER

Keeping in line with its philosophy of building working partnerships, in March 2006, the AMLU teamed up with the Bureau of Land Management (BLM) and California Conservation Corps (CCC) to fence seven dangerous abandoned mine shafts (vertical openings) and two enormous stopes (excavations used in the mining of ore) at the Paymaster Mine on BLM land in Imperial County. Roads lead straight into the stopes, with recent evidence that vehicles have driven very close to the edge, while the seven shafts lie adjacent to a well-traveled road in the area.

The CCC brought out a very willing and capable group of five young adults and crew leader Jimmy Galvan to work with the AMLU staff. Several of the shafts required T-posts to be installed in bedrock, which necessitated the use of a hammer drill to create holes for the T-posts. Steep hills adjacent to some of the features added another level of difficulty to the project.

“None of this would have been possible without the considerable help and effort of the OMR coordinating this effort, and contributing substantial staff time and funds. The CCC ... did an outstanding job providing quality labor at a competitive cost. I really hope that this partnership continues to grow and is nurtured by the BLM in California.” -- Jamie Blair, BLM El Centro Field Office

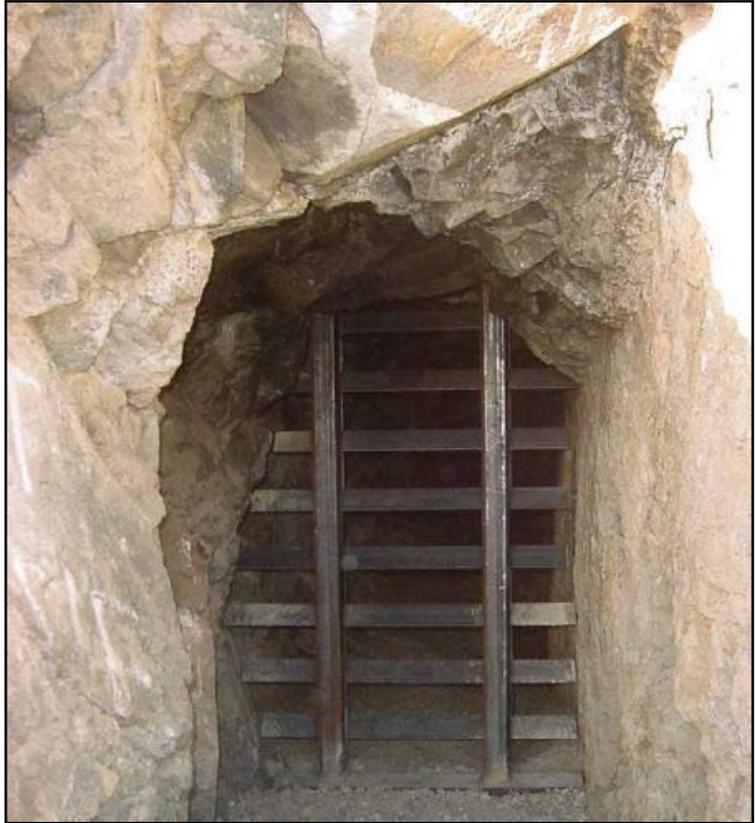


Bat Gates, Riverside County, January 2006



BEFORE

(Note, there is an extremely hazardous vertical shaft on the right side of the floor of this adit.)



AFTER

(The hazardous shaft is behind the gate. The gate protects both people and bats.)

In an effort to protect the public and preserve bat habitat, the AMLU installed two bat gates at this abandoned mine in Riverside County near Blythe. One of the gated adits has a deep vertical shaft in the floor just 20 feet inside, and both support large colonies of bats. Support from the Palms Springs BLM office and additional funding from Bat Conservation International made this project possible. In addition, State Parks Off-Highway Motor Vehicle Recreation Division "Green Sticker" fees helped to fund the bat surveys for this project.