

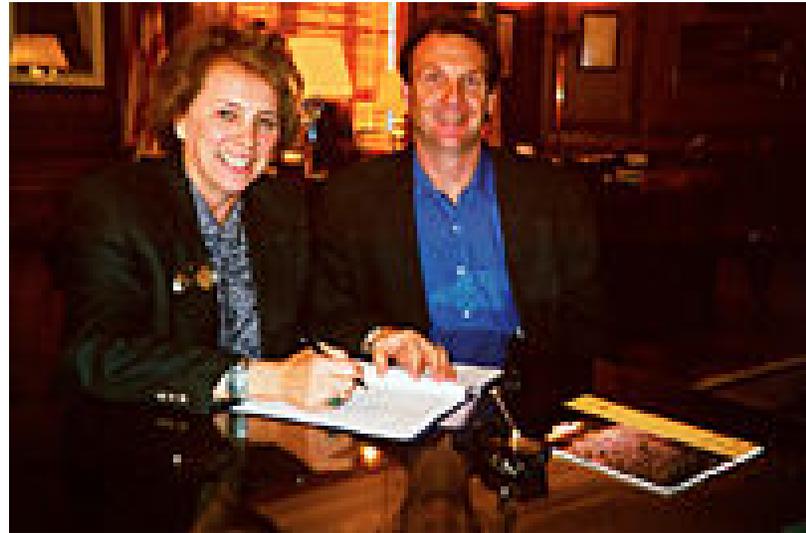


Bats and abandoned mine land reclamation

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The following article was written by [Vance Greer](#), Office of Surface Mining, Abandoned Mine Land Program. Vance presents an overview of the relationship between abandoned mine reclamation and bats and stresses the importance of saving bat habitats. For those who want additional information, it is available directly through web links at the end of the article.

On December 15, 1998 Kathy Karpan, Director, Office of Surface Mining and Steven N. Walker, Associate Executive Director, [Bat Conservation International \(BCI\)](#) signed a [Memorandum of Understanding](#). Bat Conservation International is a non-profit organization formed to promote the conservation of bats and bat habitats. The Office of Surface Mining's abandoned mine land (AML) program, due to the reclamation of underground mine shaft and portals, plays a significant role in the protection of this critical habitat.



If you are wondering why we would need such an Memorandum of Understanding or you are one of those folks that think all bats are the vampire creatures portrayed in the Dracula movies, consider this. Bracken Cave, near San Antonio, Texas, is the spring roosting site of some 20 million Mexican free-tailed bats. Each bat weighs approximately one ounce and will consume one-half its body weight in insects each night. The mathematical result is that this one colony of bats consumes over 150 tons of insects each night. A much smaller colony living in the Old Orient Mine in Colorado consumes almost 2 tons of insects each night.



In addition to their role as primary predators of a wide variety of insects that cost farmers and foresters billions of dollars, these flying mammals are also instrumental in the pollination and seed dispersal of numerous plant species. For example, Margarita lovers should know that tequila is produced from the agave plant whose seed production drops to 1/3000th of normal without bats as pollinators. Bat droppings (guano) support entire ecosystems of unique organisms, including bacteria which can be used to detoxify waste, improve detergents and produce gasohol.

Contrary to their much-maligned image, bats are ecologically and economically critical to the well being of the nation. And yet, over half of the 43 species living in the U.S. are endangered or on the candidate list for endangered species. As their traditional habitats such as caves and tree hollows are being disturbed by human intrusion, bats are becoming more and more dependent on abandoned mine sites for suitable habitat. Many of the

43 species, including endangered species, have been observed using abandoned mines either as permanent roosts or temporary stops during migration. Abandoned mines provide microclimates similar to caves, suitable for rearing young, hibernation, and rest stops during migration in the spring and fall. Closure of mine openings without a biological survey can trap and destroy an entire colony of bats.

The Office of Surface Mining and the States, through their Abandoned Mine Land programs, are committed to the protection and preservation of bats, their habitat, and their ecosystems. Although procedures may differ from program to program, a biological survey normally is conducted in coordination with wildlife departments to check for bat habitation prior to closure of a mine opening. If bat activity is confirmed, the typical response is to construct a bat gate. Bat gates may be different sizes, shapes, or designs but usually involve a steel grid with openings large enough to allow passage for the bats, yet small enough to prevent human entry. Gates often are installed on mine openings with no visible signs of bat habitation in order to maintain ventilation patterns which may be essential to adjacent or connecting areas which do contain bats.



Over 300 bat gates have been funded and constructed since the commencement of the Abandoned Mine Land program, with the Office of Surface Mining Federal Reclamation Program and the various State programs averaging from 1 to 15 gates per year. Costs range from a few hundred dollars to \$18,000, with an average of less than \$5,000. One reclamation project in Ohio involved the installation of bat gates over three large mine openings and cost \$54,000. The type of gate installed depends on the size of the opening and the species of bat using it. While most species tolerate gates and readily adapt to them, some species do not. For these bats a concrete wall blocking most of the opening is effective so long as a horizontal opening is left at the top of the closure to accommodate the bats. Other type gates may include a lockable gate to provide for future human entry if necessary. Bat gates must meet the primary objective of protecting the public from a hazardous condition and, oddly enough, are often more economical than conventional mine closure methods.



Given that bats rely heavily on abandoned mines for their survival it is imperative that the Office of Surface Mining and the other involved government agencies continue the protection of those mine habitats. Enhanced public awareness will assist in this protective efforts by pointing out the many benefits derived from our bat population and dispelling some of the myths. There is growing evidence that the public is taking a more favorable view of bats. Blueprints are available and many people are building bat houses in their backyards, much the same as you do for wrens and other birds. This Memorandum of

Understanding will result in closer collaboration with Bat Conservation International and the saving of more prime bat habitat in abandoned underground mines.

If your interest has been sufficiently tweaked, excellent publications are available. Copies of "[Bats: Masters of the Night Sky](#)" are available free of charge from the [Bureau of Land Management](#), Public Affairs, 1849 C Street, N.W., Room 5600, Washington, D.C. 20240 or

phone: (202) 208-5717. Copies of "[Bats and Mines](#)" are available through [Bat Conservation International](#), P.O. Box 162603, Austin, Texas 78716. Instructions and diagrams for building your own bat house may also be obtained from BCI.

Links to additional information:

[How to Build a Bat House](#)

[The Bat House Builders Handbook](#)

[Can't Build a Bat House - Buy a Bat House](#)

[Build a Bat Garden](#)

[Bat Web Sites](#)

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Memorandum of Understanding: Bat Conservation International

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BAT CONSERVATION INTERNATIONAL and the UNITED STATES DEPARTMENT OF THE INTERIOR OFFICE OF SURFACE MINING

I. AUTHORITY

This Memorandum of Understanding (MOU) is made and entered into by and between Bat Conservation International, Inc., hereinafter referred to as BCI, and the Office of Surface Mining, United States Department of the Interior, hereinafter referred to as OSM, under the provisions of Section 413 (a) of the Surface Mining Control and Reclamation Act of 1977, as amended, (SMCRA).

II. PURPOSE

The purpose of this MOU is to establish a framework for cooperative efforts between the two organizations to maintain and increase the conservation of bats and their habitats.

III. STATEMENT OF MUTUAL INTEREST AND MUTUAL BENEFITS

BCI, a non-profit organization, was formed to promote the conservation, study, and protection of bats, their roosts and habitats, and to provide for and promote public education about bats and their role in the ecosystem. BCI's North American Bats and Mines Project (NABMP) was founded in 1993 by BCI and its agency partners to protect mine-roosting bat populations threatened by mine closure and reclamation nationwide. The NABMP has helped facilitate, implement, or provide technical assistance for bat-compatible mine closures throughout the United States, and has provided training on bat conservation and mine land management to hundreds of wildlife and mine land managers.

OSM is involved in the reclamation of mine lands abandoned prior to the passage of SMCRA. Generally, the abandoned mine land (AML) programs are administered by States or Indian Tribes through programs which have been approved by OSM. In those States or Indian Tribes with abandoned coal mines but without an approved program, OSM is the reclamation authority.

The AML program, due to the reclamation of abandoned mine shafts and portals, is the most important OSM program with regards to bat conservation and will be the focal point of this MOU. However, whenever active mining opens into abandoned underground workings or "pillar shaving" operations threatens bat habitats, OSM will support appropriate safeguards.

BCI and OSM have responsibilities and interests in protecting the environment, including wildlife resources and their habitats. It is mutually agreed that BCI and OSM will assist each other in educating OSM staff, States, and Tribes about the beneficial roles of bats, cooperate in

the protection of bats and their habitats, and utilize OSM authorities, including technical and financial assistance, to promote and aid the conservation of bats and their habitats on State and Tribal lands.

In consideration of the above premises, BCI and OSM agree as follows:

IV. OSM SHALL:

1. Consider the conservation of bats and their habitats in the development and implementation of abandoned mine land reclamation standards and recommendations to States and Indian tribes.
2. Provide assistance in the development of program criteria, consistent with the practices of abandoned mine land reclamation, which will help manage bats and their habitats effectively and economically.
3. For the Federal Reclamation Program, monitor non-emergency AML shaft and portal areas for bat activity prior to reclamation and, as appropriate, require the use of bat gates to seal the shafts or portals where bat habitation is known and would be endangered if sealed otherwise. Encourage the States and Tribes to do likewise.
4. Promote the education of OSM staff, State agencies and Indian tribes of the beneficial aspect of conserving bats, tested methods to safeguard bat habitat and public health, and ways to mitigate for loss of bat roosts and habitats. This can be accomplished through educational materials, bulletins, and/or training sessions.

V. BCI SHALL:

1. Cooperate with OSM in meeting the purpose of this MOU and in accomplishing items of mutual interest and benefit related to the protection and conservation of bats during reclamation activities.
2. Provide expertise and consultation on bat management and conservation for implementation of agreed upon projects such as inventorying, habitat improvement and restoration, and monitoring.
3. Provide expertise on bat conservation and land management training, education, and demonstration projects. Exchange information and publications with OSM, State agencies, and Tribal groups about bats, bat habitats, and bat conservation/mitigation during mine land reclamation.
4. Acknowledge the assistance of OSM in its publications or other works resulting from its activities under this MOU.
5. Not refer to this MOU in commercial advertising in a manner which states or implies that OSM has approved or endorsed the activities of BCI.

VI. IT IS MUTUALLY AGREED AND UNDERSTOOD BY AND BETWEEN THE SAID PARTIES THAT:

1. BCI and OSM will meet at least annually to discuss, identify, and coordinate the various

proposed projects that will achieve the goals of this MOU.

2. As agreed to on a project-by-project basis, they will assist each other in the planning, implementation, and monitoring of projects developed subsequent to this agreement.

3. This MOU in no way restricts BCI or OSM from participating in similar activities or arrangements with other public or private agencies, organizations, or individuals.

4. Nothing in this MOU shall be construed as giving BCI or OSM any type of exclusive arrangements to the exclusion or detriment of other interested groups or organizations.

5. This MOU does not constitute an obligation or commitment of federal funds. Any project involving reimbursement or contribution of funds between OSM and BCI will be handled in accordance with applicable laws, regulations, and procedures, and will be subject to the availability of appropriate funds.

6. This agreement will become effective upon approval by both parties, and will extend for a period of 5 years thereafter. At the conclusion of the 5 year period, this agreement will be reviewed to determine whether it should be renewed, modified, or terminated. A letter signed by both parties shall be sufficient to renew this agreement for an additional period not to exceed 5 years.

7. This agreement may be terminated at any time prior to its expiration upon mutual agreement of both parties or upon written notice by either party to the other.

8. This agreement may be modified by amendment at any time upon written agreement by both parties.

VII. THE PRINCIPAL CONTACTS FOR THIS AGREEMENT ARE:

Name Sheryl Ducummon

Title, North American Bats and Mines Project Director

Address Bat Conservation International, Inc.

P.O. Box 162603

Austin, Texas 78716

Phone Number (512) 327-9721

Email sducummon@batcon.org

Name Gene Krueger

Title, Chief, Division of Reclamation Support

Address Office of Surface Mining

1951 Constitution Ave

Washington, D.C. 20240

Phone Number (202) 208-2937

Email gkrueger@osmre.gov

VIII. EFFECTIVE DATE:

IN WITNESS WHEREOF, the parties hereto have executed this MOU as of the last written date below.

KATHY KARPAN.....(Signed December 15, 1998)

Director

USDI-Office of Surface Mining

STEVEN M. WALKER....(Signed December 15, 1998)

Associate Executive Director

Bat Conservation International, Inc.

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