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Succeeding Together

?BCI and the National Park Service build on years of cooperation

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The Last Chance Mine held a treasure trove of copper when it opened about 1890. But hauling ore out of the Grand Canyon on the backs of mules proved too costly, and the mine shut down in 1907. The spectacular canyon became a national park in 1919, and biologists discovered a maternity colony of Townsend's big-eared bats (*Corynorhinus townsendii*) inside the mine in 1988. Wildlife managers recommended closing the mine's three openings with bat-friendly gates to protect both people and bats. And that is where things sat for two decades "until Bat Conservation International and Grand Canyon National Park joined forces.

Jason Corbett, Coordinator of BCI's Southwest Subterranean Program, was working with Hattie Oswald of the National Park Service on a bat-use survey of Grand Canyon caves and mines in 2008. They confirmed the importance of the Last Chance Mine and the need for gates, just as previous biologists had. This time, though, Corbett took the idea to a valued BCI partner, Freeport-McMoRan Copper and Gold, Inc. The company promptly agreed to fund the project. With money in hand, things moved quickly.

But nothing is ever easy in the Grand Canyon. Two of the mine entrances emerge along the side of a 300-foot (90-meter) cliff. The gating contractor, MineGates Inc., assembled an experienced team and the Park Service provided a manager and other staff, as well as aviators and a helicopter.

In September 2009, three crews went to work on three gates. The Grand Canyon National Park pilots proved remarkably adept at placing tons of materials and gear exactly where they needed to be, and the crews required just a day and a half to get the prefabricated gates in place. After months of planning and decades of waiting, the Last Chance Mine was gated and its bats are protected.

The helicopter made for a less exhausting effort than during an earlier joint project. In 1997, Grand Canyon National Park, BCI and other partners used rafts to ferry tons of steel and equipment 31 miles (50 kilometers) down the Colorado River. Then they carried 200-pound (90-kilogram) steel bars up a near-vertical slope to reach Stanton's Cave. The result was a large gate, 20 feet (6 meters) across, that protects a colony of Townsend's big-eared bats.

Hattie Oswald, meanwhile, notes that Corbett arranged donor funding not only for the Last Chance Mine gates, but also for the continuing Comparative Cave and Mine Use Bat Study.

"Neither project would have been possible without BCI's support and assistance," she said. "Jason assisted with collecting the data and providing the motivation to actually get the gating project going. I can't emphasize enough how important BCI has been for these two projects."

The feeling is mutual "as it has been for decades. "Working with the Park Service is a

real pleasure," Corbett said. "I've worked with a number of Park Service people and they are extremely committed to wildlife and conservation. Together, we have accomplished great things for bat conservation and I'm sure we'll continue to do so for years to come."

The National Park Service has "a broad responsibility, not only for many species of wildlife, but for all the other natural resources," said Bert Frost, NPS Associate Director of Natural Resource Stewardship and Science. "Bats are one of many things that we manage." And they are becoming increasingly important as the Park Service expands its efforts.

In the past, Frost said, bats were spotlighted at some parks, while "at others, they were just off the radar. That is changing as we move into broader management" both geographically and biologically.

The National Park Service instituted "Vital Signs Monitoring" several years ago. The program established 32 inventory and monitoring networks that link parks with similar geographic and resource characteristics. "Each of our networks has identified a suite of vital signs that help us understand what is going on. Many of those networks have bats as one of their vital signs.

"Bat Conservation International is a great partner for the Park Service," Frost said. "A lot of our goals are similar and we both understand that bats are important, not only at the local level, but at the landscape and ecosystem level."

BCI's links to the National Park Service reach back to the early 1980s and a long effort to create a new national park in the U.S. territory of American Samoa.

BCI was alerted by botanist and BCI Member Paul Cox to an alarming decline of Samoan flying foxes (*Pteropus samoensis*) in 1983. Two years later, Cox, BCI Founder Merlin Tuttle and BCI Board Chairman Verne Read and his wife, Marion, visited the South Pacific islands to discuss with local officials the possibility of establishing a national park to protect the bats.

In the next few years, Tuttle and Read testified before several congressional subcommittees as BCI members began a letter-writing campaign. President Ronald Reagan signed the bill establishing the National Park of American Samoa in 1988. The park was officially created in 1993. "If not for BCI's efforts, this unique tropical-island park might still be on the drawing board," Park Superintendent Chris Stein wrote in 1997.

BCI and the National Park Service signed their first Memorandum of Understanding in 1995, pledging cooperation in bat research and conservation on national parks nationwide. Over the years, BCI and the parks have collaborated on many projects, including bat and mine surveys, education programs and the installation of bat-friendly gates on caves and mines in Arizona, California, Kentucky, North Carolina, Texas and elsewhere.

Elaine Leslie, now Deputy Chief of the NPS Biological Resource Division, worked at Grand Canyon during the daunting Stanton Cave project. She recalls some 15 years ago, when the park "entered into dialog with BCI to, first of all, get the staff some much-needed training." Many national parks, she said, were just becoming aware of bats, but "we knew very little about species distribution and abundance. (After training), we started collaborative efforts on inventory and monitoring of bats, and also looking at what we could do to better protect bats throughout the park."

Training has been a big part of BCI's ties to the Park Service. More than 60 Park Service biologists, rangers and other staffers have attended BCI's Bat Conservation and Management Workshops. BCI has held a number of the workshops at Mammoth Cave National Park in Kentucky and Lava Beds National Monument in California.

Among workshop graduates is John Burghardt, Coordinator of the NPS Abandoned Mine Lands (AML) Program. After joining the Park Service in Colorado, the geologist was asked in 1992 to work with the Colorado Division of Wildlife's Bats and Inactive Mines Program. He soon began proposing mine-gating projects for the national parks in the West. "Dan Taylor of BCI (now Coordinator of BCI's Water for Wildlife Program) got me a scholarship to go to the workshop in Arizona. Those workshops are great, they're phenomenal," Burghardt said. "That's what really gave me a strong background in bats â€” the foundation that I still use today. For a geologist, I do a lot of biology."

The AML program evaluates abandoned-mine sites for human safety and use by bats, which often roost in old mines. "We're doing a federal Recovery Act project now with 147 abandoned mine sites in 17 states, and a lot of those involve bat-compatible closures. That's when BCI's expertise is very valuable," Burghardt said. "I really lean on Jason Corbett and (Cave and Mine Resources Specialist) Jim Kennedy and their expertise in making decisions on closures and materials."

Kennedy helped survey 72 old mines on the Organ Pipe Cactus National Monument in 2009, recommending bat-friendly closures for 15 of them. The Park Service assigned elite, armed park rangers to accompany the biologists into the Arizona border area, which is known more for its drug-smuggling routes than its bat populations.

Corbett, meanwhile, is surveying mines, many of them on Park Service lands, throughout the Western states.

And just as BCI has occasionally arranged funding for projects on Park Service lands, the Park Service often returns the favor. Raymond Skiles is Wildlife Biologist at Big Bend National Park in West Texas, where Emory Cave provides a critical roost for endangered Mexican long-nosed bats (*Leptonycteris nivalis*). These pollinating bats spend winters in Mexico, then follow "nectar corridors" of blooming agave plants up to the southern fringes of West Texas and New Mexico for the summer.

"We've been able to provide NPS funding for the last two years to help Christa Weise (Coordinator of BCI's Latin America and the Caribbean Program) work in northern Mexico, trying to find additional roosts for *nivalis* and to document its habitat," Skiles said. Such efforts are important as the Park Service takes a broader view of conservation realities: "In order to protect the park's resources, we have to work beyond the boundaries of the park and even the nation."

Burghardt notes that in these days when White-nose Syndrome is threatening to sweep into the West, he and Corbett often work together to ensure that bat and mine inventories do not endanger bats or risk introducing this devastating disease.

The Park Service established a White-nose Syndrome Working Group in March 2009. "In putting this group together," said leader Kevin Castle, "I tried to pull in Park Service ecologists from all across the country. We have been proactive on this issue. We have parks that have closed cave access, and others that are monitoring decontamination of gear â€” and education, of course. I really see education as one of our major roles. Mammoth Cave,

for instance, gets 400,000 visitors a year, and we are able to educate those people."

The Park Service joined BCI and others in cosponsoring a major WNS science conference to set research and management priorities. And, Castle said, "We recently put on a 'webinar' for government people that included information on surveillance and monitoring techniques, and Mylea Bayless (WNS Emergency Response Coordinator) was one of our guest speakers. We wanted to get that expertise and that connection with BCI."

Peter Dratch, NPS Endangered Species Specialist, said he attended a BCI workshop some years ago. "I went to 'bat camp' and it was really great. It still has a big impression on me in terms of widening my view of bats.

"Most of these parks are responsible for preserving multiple resources, so it's not just going to be about bats," he said. "But we are trying to give the public an appreciation of how important these bats are. It often starts with an individual (park staffer) who champions bats at a park, then we do everything we can to give those champions some support."

BCI faces many bat-conservation challenges in the United States and around the world, but with partners like the National Park Service, none are insurmountable.

ROBERT LOCKE is Director of Publications at Bat Conservation International.

Partners for Bat Conservation

Here's a sampling of collaborations between the National Park Service and Bat Conservation International:

A national park for bats (1985-88): BCI Founder Merlin Tuttle and Board Chairman Verne Read visited American Samoa to meet with local officials about the possibility of a national park to protect flying foxes. Over the next few years, both men testified before congressional committees and BCI members began writing letters to Congress. A bill creating the national park passed the House and Senate and President Ronald Reagan signed the measure on November 1, 1988.

Gating a Texas mine (1995): BCI partnered with the National Park Service and the Texas Railroad Commission to install bat-friendly gates at the abandoned Mariscal Mine on Big Bend National Park in West Texas. The mine housed one of the nation's largest maternity colonies of Townsend's big-eared bats. BCI also helped survey nearby Emory Cave and conducted habitat studies on the endangered Mexican long-nosed bat.

Formalizing the partnership (1995): BCI and the National Park Service signed a formal Memorandum of Understanding, committing to jointly develop bat-conservation and research projects on Park Service lands across the United States.

The bats of Mammoth Cave (1995-97): With the invitation and assistance of Rick Olson, Ecologist at Mammoth Cave National Park, Merlin Tuttle and Jim Kennedy of BCI confirmed the historic use of this popular cave by millions of now-endangered Indiana (Myotis sodalis) and gray myotis (M. grisescens), as well as several other bat species. A bat-friendly gate was installed on a primary cave entrance.

A gate in the Grand Canyon (1997): Stanton's Cave in Grand Canyon National Park once sheltered Arizona's largest known maternity colony of Townsend's big-eared bats "until

a chain-link fence spanned the entrance to protect archaeological artifacts. The bats disappeared. Grand Canyon Wildlife Biologist Jim Petterson proposed replacing the fence with a bat-friendly gate. BCI provided funds and advice and, with state and federal partners, the gate was built. Bats began returning to the cave in a matter of months.

A gate for endangered bats (1998): BCI, the Park Service and other partners sponsored a cave-gating workshop that installed a bat-friendly gate to protect a colony of endangered gray myotis at Gregory Cave in Great Smoky Mountains National Park.

Surveying mines in the desert (1999-2003): BCI and National Park Service biologists jointly surveyed more than 150 abandoned mines in the Joshua Tree and Death Valley National Parks and the Mojave National Monument. Bat-friendly gates and other measures were undertaken to protect the bats at many of the sites.

Bats in Death Valley (2003): BCI and partners sponsored a gating workshop at Death Valley National Park. Participants built a new gate to replace two earlier versions that were blamed in part for the decline of a maternity colony of Townsend's big-eared bats in the cave. Subsequent monitoring found a 275 percent increase in the number of bats.

Artificial trees at Mammoth (2004): BCI tested two innovative artificial roosts for Rafinesque's big-eared bats (*Corynorhinus rafinesquii*) at Mammoth Cave National Park. The structures, built of cinder blocks, are designed to mimic hollow trees the species uses for roosts. Bats began moving into the artificial roosts within a few months.

Bear Gulch Cave gets a gate (2004): A popular tourist cave at Pinnacles National Monument in Central California, Bear Gulch Cave is used by a maternity colony of Townsend's big-eared bats. The Park Service, assisted by BCI, installed several gates to allow visitors to enter some areas of the cave for part of the year without disturbing the bat colony. The cave is closed while pups are being raised.

Stalking bats in the desert (2009): The National Park Service provided funds, expertise and protection as BCI and partners hiked through the Arizona desert near the U.S./Mexico border to assess 72 abandoned mines on the sprawling Organ Pipe Cactus National Monument.

Designing gates for endangered bats (2008-09): The long-abandoned State of Texas Mine at Coronado National Memorial in Arizona houses a seasonal colony of up to 30,000 endangered lesser long-nosed bats (*Leptonycteris yerbabuenae*), but existing gates are inadequate. In 2008, BCI and the Park Service conducted a series of tests to determine the most efficient gate design for this important site.

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