

Wildlife and Mines

by Leah Gardner and Douglas John

CCR 3713(b) tells us that “All portals, tunnels, or openings [of mines must be] gated or protected from public entry, **but preserve access for wildlife**. But which wild animals make use of mines? Do they only use abandoned mineshafts or are there wildlife issues for currently operating quarries and reclaimed mine sites? What special measures must be taken?

Many people have become aware of the beneficial roles bats play in the environment, especially by keeping harmful insects in check. Mine shafts and adits provide bats with good habitat for roosting, hibernating and reproducing, in many cases replacing natural cave-type habitats that have been destroyed or disturbed. In fact, mines provide important habitat for more than half of the 45 bat species found in the U.S. In California, 20 species of bats are associated with underground mines (mines), many of which are sensitive species of concern (11). (10 of the 11 species of concern use mines)

Special bat gates and cupolas have been designed to install at the entry to abandoned mine shafts and adits by Bat Conservation International and state agencies to properly provide access while also making them safe for the public. For more information, contact our abandoned mined lands unit (AMLU) or visit Bat Conservation International at www.batcon.org.

But other species of animals besides bats may be encountered at abandoned or active mine sites. The Department of Fish and Game’s *California Wildlife Habitat Relationship System* (CWHR) lists 101 species ranging from lizards to wolverines that either depend on mines or find these human-made features preferable when it comes to seeking shelter, finding food or having babies. Undoubtedly, some of these same species used surface mining areas (quarries) for the same reason. Rehabilitating quarries can also provide area from which wildlife can move through as they move from one prime area to another. This becomes increasingly important as their habitat becomes ever more fragmented due to human activities. Quarries are important for other reasons as well; quarries can provide a host of plant species from which wildlife can feed upon that might not be available in the areas surrounding a quarry. These areas immediately adjacent to a quarry are known as edge habitat and are present whenever two adjacent habitats meet. These areas are known to house greater number of species than what is present in either of the two habitats alone. Rehabilitated quarries also act as dispersal areas for youngsters to move into, as adults maintain territories in more prime habitat. Finally, quarries often have unique soil types and consequently unique flora, providing biological islands that harbor some rare species of animals.

In addition to these, numerous species return to the reclaimed quarries as the habitat quality improves over time. In the case of instream mining or mining in a floodplain, sensitive species of fish such as the migrating salmonids must be considered.

Before any project begins, complete surveys of the site must be conducted by qualified biologists to insure that all species of plants and animals are identified. During the CEQA process, impacts to all biological resources are identified and site-specific mitigation measures are developed in conjunction with the Department of Fish and Game or the US Fish and Wildlife Service. These biological survey reports should accompany all reclamation plans submitted to OMR for review and the mitigation measures developed under CEQA should be incorporated into reclamation plans. This could involve such actions as avoiding sensitive areas of a site, fencing off or creating buffers around certain areas, avoiding blasting during certain times of the year such as nesting season, or educating employees about the characteristics and activities of species of concern. In this way, issues involving wildlife and mines can be addressed satisfactorily.

The photos below are from recent wildlife encounters by OMR staff, mine operators, and consultants.



The ringtail (*Bassariscus astutus*), also known as the ring-tailed cat or the miner's cat, is a fully protected species in California. Photo by Robert Shantz.



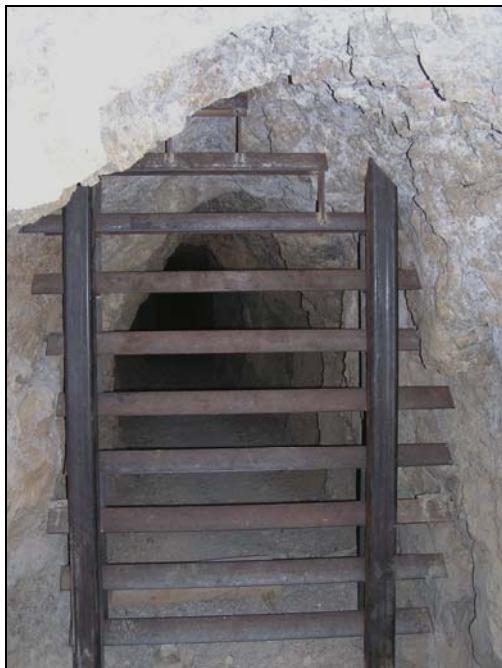
Mama and baby Nelson's bighorn sheep forage along recently revegetated benches and drink from the "guzzler" at this operating limestone quarry in San Bernardino County. Photo by Scott Lasley of Silver Sage.



A Chuckwalla (*Sauromalus obesus*) peacefully munches on a beavertail cactus flower outside the office of the Briggs Mine in Inyo County. Photo by Amy Kulas of Canyon Resouces..



This Coast Horned Lizard (*Phrynosoma coronatum*) – a species of special concern - made its home in the sandy slopes of a reclaimed section of an active quarry in Santa Cruz County.
Photo by Leah Gardner.



This bat gate installed at an abandoned mine in San Bernardino County allows bats to freely enter and leave the mine shafts, but helps to insure public safety. Photo by Leah Gardner.



Peninsular bighorn sheep (*Ovis canadensis cremnobates*), a distinct vertebrate population segment, is a state threatened and a federally endangered species only found in the Peninsular ranges of California and in Baja, Mexico. All subspecies of bighorn sheep, except Desert or Nelson's Bighorn Sheep (*Ovis canadensis nelsonii*) are listed as a California fully protected species. Photo by Jan Carey.



The Desert Tortoise (*Gopherus agassizii*) is a state threatened and a federally endangered species native to the Mojave Desert. Photo by Leah Gardner.