

# TO ALL WHO CARE ABOUT THE SERIOUS PROBLEM OF EXTREME MINING IN DELICATE ENVIRONMENTS IN ARIZONA

The academic community, even into other countries, is a part of the larger community of individuals that is seriously concerned about the possibility of intensive mining in southeastern Arizona, where water is very short and precious, and biodiversity is unusually high. In addition, there is considerable concern about the fallout with respect to availability and quality of water for people, not to speak of the loss of the major, sustainable economy of ecotourism.

Below is a document that summarizes some of these issues, together with the names of hundreds of academic signatories attesting to the concern of many who care about our environment, our state, and our country. The document was compiled and signatures obtained by Elizabeth Bernays (Regents' Professor Emeritus, University of Arizona) during February to July, 2012, and letters of approval from signatories are available.

## THE PROBLEM OF PROPOSED OPEN PIT MINES IN SANTA RITA MOUNTAINS AND PATAGONIA MOUNTAINS IN SE ARIZONA

Due to planned mines, southeast Arizona is threatened as a habitat for both wildlife and people. The biological diversity is higher than for any region in the USA, with its sky islands, washes, desert flats and grasslands creating a major tourism industry based on naturalists, hunters, hikers, bikers, and researchers. The Nature Conservancy's Patagonia-Sonoita Creek Preserve is quoted by the Audubon Society as the one of the best birding locations in the entire country.

There is a drought in Arizona, and severe drought predicted in the coming decades. Water will become ever more critical yet international companies are planning to develop mines for silver, copper and other metals. Such mining industries use vast quantities of fresh water and produce vast quantities of contaminated water. Best known is the planned Rosemont mine in the Santa Rita Mountains. The site is only 25 miles from Tucson, and closer to a number of smaller townships. Rosemont's water use estimate is over 3 trillion gallons per year [1] probably reducing the water table by at least 1000 feet over time and thus severely impacting the vegetation over square miles, affecting private wells and town water. Trees will disappear and habitat for most animals will be wrecked. The mining operation would last 20 years, yet drawdown of the water table is predicted to continue to expand for miles outward and for hundreds of years [2].

Just south of the Santa Rita Mountains, over 200 mining claims have recently been established in the Patagonia Mountains, with the possibility of future mining activity even bigger than that of Rosemont. This will destroy many square miles of forest and kill the town of Patagonia, along with the wild life. The oasis of Patagonia Lake would be lost forever. And the various companies are not to be trusted in their reports. For example, in October of 2011, a plan of operations submitted by Arizona Minerals, Inc. a subsidiary of Wildcat Silver Corporation, was to conduct exploratory drilling on public lands near Patagonia and was approved by the Forest Service. The memo lists floodplains, wetlands, and municipal watersheds as "not present." Yet the site is right in Harshaw Creek watershed, draining into Sonoita Creek (and hence Patagonia, Santa Cruz River and Nogales). Already, there are pollutants above those allowed for drinking water, resulting from some mining activity [3].

All the lands being considered for mining are prime wildlife habitat, provide important wildlife corridors, and are home to abundant game and non-game species such as deer, javelina, bats, mountain lion, coatimundi, quail, hawks, vultures, golden eagles, and songbirds. Threatened and endangered species, such as the Lesser Long-nosed Bat, and the Pima Pineapple Cactus, and other vulnerable species such as the Jaguar, Rufous-winged Sparrow, and Bell's Vireo occur in the area. In the Patagonia Mountains several of the proposed mines are in critical habitat for the threatened Mexican Spotted Owl [4]. The actual damage to the habitat, and the derived damage from lowered water tables would severely impact these and most other animals.

Besides the drastic effect on water, the level of industrial activity and road traffic will have a huge impact on the whole area south of Tucson. For Rosemont mine alone, hundreds of mine trucks will travel 24/7 up and down highway 83. There would also be truckloads of concentrated sulfuric acid, a variety of petroleum products, surfactants, and cyanide. This is a two-lane major scenic route for the cyclists, motorcyclists and motorists, as well as off-road riders, that make up a large part of the sustainable industry in the "Mountain Empire" of Sonoita, Elgin and Patagonia (birding, hiking, wine tasting, horseback riding, biking, camping, hunting, visiting art galleries and historical monuments). If there were to be mining in the Patagonia Mountains, truck traffic could be ten times more than the traffic of the Rosemont mine. The current sustainable economy would be lost to a 20-year activity, leaving a trail of ghost towns.

In some of the most scenic and popular regions in the state these open pit mines also threaten the whole appearance of the countryside. Rosemont pit would cover 700 acres and the billion tons of tailings would cover another 3,000 acres, most of it on forestry land. Such tailings provide the toxic dust familiar from such mines, and a hazard in this windy desert environment. Further, there would be 250 acres of equipment, 24/7 blasting, and the end of dark skies in this astronomers' paradise. Air quality in relation to Rosemont is serious enough for Pima County to deny an air-quality permit though the company is working to overturn the ruling. The situation would be worse in Patagonia with the nearest possible mine being just eight miles south of town.

The huge pits with their toxic lakes will be a serious hazard for birds of many species including rare migrating birds, and especially those attracted to water. The liners of such pits are known to tear quite frequently, releasing noxious chemicals into the ground water. The released acid reacts with other ores washing out other toxic heavy metals such as cadmium, lead and arsenic, so that they contaminate the ground water.

In conclusion, it appears that southeastern Arizona, and in particular the Santa Rita-Patagonia Mountain region is too sensitive, too scenic, and too valuable to be exploited by huge mining operations. This is a desert and water is its most valuable resource. This is a special area for wildlife and recreation of all kinds. This is too close to a major city, and to historic and irreplaceable small townships with their special kinds of sustainable development.

1. Water Consumption at Copper Mines in Arizona, by Dr. Madan M. Singh, State of Arizona Department of Mines & Mineral Resources, Special Report 29, December 2010.
2. Hydrogeology of the Santa Rita Rosemont Project Site: Numerical Groundwater Modeling of the Conceptual Flow, Model and Effects of the Construction of the Proposed Open Pit, April 2008. Prepared for Pima County Regional Flood Control District, Prepared by: Tom Myers PhD, Hydrologic Consultant.
3. ADEQ Report, Total Maximum Daily Load For Upper Alum Gulch, Sonoita Creek Basin, Santa Cruz River Watershed, Coronado National Forest near Patagonia, Santa Cruz County, Arizona HUC 15050301-561A Parameters: Cadmium, Copper, Zinc, and Acidity. June 30, 2003
4. Ganey JL and Balda RP Distribution and Habitat Use of the Mexican Spotted Owl in Arizona, Condor 91, 366-361.

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