

Kimberly MacMillan

From: **Velma Smith** <vsmith@pewtrusts.org>

Date: Wed, May 4, 2011 at 5:04 PM

Subject: Comments on the Northern Arizona Proposed Withdrawl DEIS

To: "NAZproposedwithdrawal@azblm.org" <NAZproposedwithdrawal@azblm.org>

Attached please find a comment letter with comments on the Northern Arizona Proposed Withdrawal Draft EIS.

Thank you for your consideration.

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Comments on the Northern Arizona Proposed Withdrawal Draft EIS

May 4, 2011

Scott Florence, District Manager,
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Dear Mr. Florence:

Thank you for the opportunity to provide comments on the proposed withdrawal of public lands surrounding the Grand Canyon National Park. The Pew Environment Group strongly supports Alternative B, the withdrawal of the full million acres for a 20-year period, the longest time for such a withdrawal currently allowed by law, and we urge the Administration to expeditiously select that option.

Given the importance of the Grand Canyon, the risks of mining to the unique and irreplaceable natural and cultural resources of the area, and the significant uncertainties about the hydrologic conditions and potential impact discussed in the U.S. Geological Survey (USGS) studies of the three segregation areas, we believe that withdrawal of the full million acres is fully justified.

We also believe that the inadequacy of the 1872 Mining Law, clearly recognized in the Draft Environmental Impact Statement (DEIS) itself, demands a cautious approach to any mining near this spectacular national treasure.

In addition, we note that while individual breccias pipe mines may have relatively “small footprints” compared to traditional open pit mines, the Department and its DEIS should consider, not only the possible impacts of individual mines, but also the broader impacts of turning the three proposed withdrawal areas into full-fledged mining districts. In our view, the DEIS does not deal appropriately with these potential cumulative impacts or with the discussion and evaluation of possible worst-case scenarios.

We understand that it is not possible to precisely predict the extent of damages that could occur from numerous operations throughout the three parcels, but we believe it is inappropriate for the analysis to dismissively conclude that impacts on water, wildlife, tourism, aesthetics and cultural values may range from minor to major, and from short-term to long-lasting. The true value of the resources at risk and the inherent uncertainties of prediction should be more forthrightly addressed, and the option chosen that offers the most certainty for preventing damage to the delicate ecosystems of the Canyon region. Again, we believe that option is Alternative B, withdrawal of the full acreage for 20 years.

Importance of the Grand Canyon National Park region

As the Department is well aware, the area surrounding the three parcels being considered for withdrawal contains not only the incomparable Grand Canyon National Park, but also two national monuments and numerous pockets of designated wilderness and several areas identified as “Areas of Critical Environmental Concern” (ACECs). Several of these latter areas, such as Johnson Spring, Marble Canyon, Moonshine Ridge and Kanab Creek ACECs, lie partially or fully within the North and East areas proposed for withdrawal and were designated to provide special protections of cultural resources and threatened and endangered plants and wildlife. According to the USGS, almost 100 plants and animals identified as species of concern inhabit the general vicinity.¹

The unique region provides a large and important expanse of habitat and relatively undisturbed lands that have been successfully managed by your Department and the Forest Service for a range of uses—from family vacationing and active tourism, rafting, hunting and fishing to solitary wilderness hiking and camping, water quality protection and wildlife preservation. These uses could be profoundly impacted by multiple uranium mining operations within the area.

Portions of the greater Grand Canyon area have already felt the pressure of habitat disruption or drought as well as increasing demands for groundwater withdrawals,² and could suffer not only from chemical or radionuclide contamination associated with uranium mining, but also declining water supplies, fragmentation of habitat and disruption of migration corridors by roads and power lines, noise and traffic associated with exploration and development activities, loss of winter range areas or important calving, fawning or nesting habitat.

In order to preserve the important ecosystem values of the area, mining activities should be limited to the greatest extent possible throughout the area, with clear prohibitions on future mining claims across all three parcels.

Water impacts, critical but difficult to predict

Though northern Arizona is marked by its arid climate and desert habitat, it is also revered for the great Colorado River, which carved out the Canyon itself and today serves as a critical water supply for municipal, agricultural and other users, serving more than 25 million people in Las Vegas, Los Angeles and elsewhere whose drinking water comes from the Colorado and irrigating more than 3 million acres of farmland.³ As the Department knows and the National Academy emphasized in its 2007 report⁴ on

¹ U.S. Geological Survey, “USGS report details uranium resources and potential effects of uranium mining near Grand Canyon,” press release, February 18, 2010, <http://www.usgs.gov/newsroom/article.asp?ID=2406>.

² See, for example, National Park Service, “A Study of Seeps and Springs,” website, updated January 4, 2010, <http://www.nps.gov/grca/naturescience/seepspringstudy.htm>; National Park Service, “Springs and seeps: Inventories provide data on at-risk wetland resources in Mojave Desert Network parks,” in Natural Resource Year in Review—2006, http://www.nature.nps.gov/yearinreview/YIR2006/01_e.html; and Arizona Department of Water Resources, “Western Plateau Planning Area Water Resource Issues—Studies, Planning and Conservation,” updated November 18, 2010, <http://www.azwater.gov/AzDWR/StatewidePlanning/WaterAtlas/WesternPlateau/PlanningAreaOverview/WaterResources.htm>.

³ Tim P. Barnett and David W. Pierce, “Sustainable water deliveries from the Colorado River in a changing climate,” Proceedings of the National Academy of Sciences, April 20, 2009, <http://www.pnas.org/content/early/2009/04/17/0812762106.abstract>.

the river, the challenge of managing river flows to serve millions of users in seven U.S. states and Mexico, will only grow more difficult given western population growth and regional climate warming trends. We urge the Department, then, to keep in mind the critical nature of this resource and to adopt a cautious approach in allowing mining activities that have the potential to affect either the quality or quantity of river flows, including seepage into groundwater that will eventually discharge into the river system.

We also urge the Department to act carefully to protect the multiple large and small springs throughout the region. As numerous scientists have pointed out, these springs support valuable riparian habitats, where species diversity can be from 100 to 500 times greater than that found in surrounding areas. According to the National Park Service, “[a]though springs make up less than .01% of Grand Canyon’s landscape, they are its lifeblood,” and without their water many species would be unable to survive the harsh environment of the area.⁵

On these points, we were disappointed that the DEIS appears to downplay the potential impact of spring losses that could readily occur, depending upon the locations and operation of specific mines and to discount the possible impacts of uranium, arsenic, lead or other contaminants that might be transported into surface flows or eventually into the Redwall-Muav or R-aquifer.

While we understand that the Department cannot predict precisely which springs might be at risk, we believe that the DEIS should recognize that even temporary loss of an individual spring could have serious repercussions for the Park area’s species diversity. Even if spring flows are eventually restored, species loss could be permanent. The assessment should also evaluate the impact that groundwater pumping from multiple mines over many years could have on future demands for groundwater supplies, considering those demands along with potential demands from further population growth.

On the issue of water quality, we understand that the local factors affecting fate and transport of contaminants into the environment differ from some other areas that have experienced long-term water contamination problems, but we were disappointed to see that the study gives little consideration to the role of flash flooding or the potential for cross-contamination of shallow and deeper aquifers via existing, abandoned or future wells. We were also disappointed with the broad assumption that contamination may be acceptable because of high volume flows in and to the R-aquifer, and with what we believe may be a misinterpretation of the USGS water quality studies in the area.

As you know, USGS carried out research and field work, dealing with time limitations and weather constraints that kept them from taking new surface water samples. Their investigation does not, as some industry representatives state and the DEIS implies, offer solid evidence that past mining has not resulted in contamination. To the contrary, their results show elevated radioactivity at all of the sites investigated, with the exception of Jumpup Canyon, which was selected as a background comparison site. The USGS scientists are careful to point out, however, that these limited investigations are not conclusive and that additional data as well as a more complete understanding of groundwater flow patterns in the area would be required to draw solid conclusions. In their words, “A more thorough

⁴ Water Science and Technology Board, National Research Council, Colorado River Basin Water Management: Evaluating and Adjusting to Hydroclimatic Variability, National Academies Press, 2007, <http://www.nap.edu/openbook.php?isbn=0309105242>.

⁵ National Park Service, Study of Seeps and Springs.

investigation of water chemistry in the Grand Canyon region is required to better understand groundwater flow paths, travel times, and contributions from mining activities, particularly on the north side of the Colorado River.”⁶

While it may be too late to truly understand the impact of past mining operations, we urge the Department to make additional investigations a priority. We believe that the withdrawal period offers a reasonable window for developing the knowledge and baseline data that are needed to protect the water resources that run through this vulnerable area with its complex interplay of groundwater and surface water and a multitude of fractures, faults, sinkholes and other features that can serve as conduits for contaminant movement.

Wildlife at risk

In addition to the major uncertainties regarding water flows and the impacts of past mining activity, the DEIS mentions a range of other unresolved issues. Taken together, we believe that these multiple uncertainties necessitate a continued pause in mining activity in the area.

For example, government scientists looking at potential impacts on wildlife and aquatic species in the region note the need for additional species-specific data on the toxicity of the range of contaminants likely to be associated with mining in the region. Their caution regarding the lack of research into biological impacts on species other than humans means that the Department must be careful not to assume, as some industry representatives have, that contamination at levels below current drinking water standards, will be acceptable.

It is clear from the recent USGS report on biological pathways that the ecological assessment of potential impacts is hampered by lack of species-specific toxicity data on uranium and an acknowledged lack of information on habitat usage within the three parcels. In addition, the analysis does not cover selenium, arsenic or other constituents that may occur with the uranium, be mobilized in the environment by mining, and, as the USGS points out, be as harmful or more so than uranium.⁷

The Department should take seriously the caution offered by these studies that uranium and other radionuclides can impact survival, growth and reproduction, and the particular concern expressed for animals that would use mine shafts for habitat or spend significant amounts of time in burrows where they can inhale or ingest contaminants. Special consideration should be given to protecting plant-eating species, such as the desert tortoise, elk and bighorn sheep, that may experience high levels of exposure from wind-deposited contamination on vegetation, birds that may be a greater risk to radiation exposure compared with other vertebrates, and fish species that may concentrate uranium.

⁶ Donald J. Bills, Fred D Tillman, David W. Anning, Ronald C. Antweiler, and Thomas F. Kraemer, “Historical and 2009 Water Chemistry of Wells, Perennial and Intermittent Streams, and Springs in Northern Arizona,” in Hydrological, Geological, and Biological Site Characterization of Breccia Pipe Uranium Deposits in Northern Arizona, U.S. Geological Survey, Scientific Investigations Report 2010–5025 , 2010.

⁷ Jo Ellen Hinck, Greg Linder, Susan Finger, Edward Little, Donald Tillitt, and Wendy Kuhne, “Biological Pathways of Exposure and Ecotoxicity Values for Uranium and Associated Radionuclides,” in Hydrological, Geological, and Biological Site Characterization of Breccia Pipe Uranium Deposits in Northern Arizona, U.S. Geological Survey, Scientific Investigations Report 2010–5025 , 2010.

As the USGS authors state clearly: “Given the lack of toxicity data available for most biological receptors and the abundance of species of concern in the food web, the risk of uranium and its decay products to biological receptors using the segregation areas should not be underestimated.”

Improper assumptions regarding extent of mining activity

The DEIS assumes that each new mine opened around the Grand Canyon would operate—from permitting and development through mining and reclamation—for a total of seven years. It also assumes that a maximum of six mines would operate at any one time. The basis for these assumptions reportedly comes from review of existing and recent mining activity in the area, and the sources cited are primarily uranium industry documents and communications.

While it is true that at least two of the mines that operated in the area in the past fit the seven-year timeframe, we do not believe that information should be relied upon for predictions of future activity. It is important to note that the uranium mines that operated in this vicinity in the past began development at a time when the price of uranium was on the decline, and decisions about production from those mines, including determinations regarding ore cut-off grades and mine closures, were driven by those falling prices as well as the extent of the discovered resources.

In contrast to the assumptions in the DEIS, most hardrock mines, including other mines in the Grand Canyon area, have “operated” for much longer periods, not moving directly to final reclamation in less than a decade, but frequently suspending operations or stockpiling low grade ores during times of low prices. In such instances, unreclaimed waste ore, overburden and lower grade ores may remain on the site and subject to the wind erosion or high-volume flash flooding which USGS notes is common to this area. As the USGS studies indicate, this has been the case for existing mines, including Kanab North and Arizona 1, both of which halted operations for nearly two decades before recently resuming production. To the extent that any new mines would encounter groundwater that might necessitate pumping, most likely in a perched aquifer formation, such pumping would likely continue during shut-down in order to keep the mine workings dry.

In addition, the DEIS fails to consider a scenario in which a mine operation initially focused on a seemingly isolated ore body opts to move operations beyond that initial discovery. As the Department knows, this is a common mining practice, particularly on federal lands where the modest claimstaking requirements make it relatively inexpensive to pursue additional exploration in areas adjacent to an operating mine. The impacts of such expanded activity are apparent at the Bingham Canyon mine in Utah, in Butte, Montana, across the Carlin Trend of Nevada and elsewhere. Indeed, that potential arose at the Grand Canyon itself, when operators of the Orphan Mine in the 1960s pressed for authority to follow an ore discovery on claims then outside of the Grand Canyon National Park into the Park itself.⁸

Such scenarios, common to hardrock operations, are not accounted for in the DEIS, but could easily develop given the volatility of metals prices and the common practices of the hardrock mining industry. They would result in longer-lived and larger operations than those considered in the DEIS, greater levels of water usage and possible pumping over longer periods of time, as well as additional opportunities for waste materials to be spread through the environment. The cumulative impacts of these scenarios should have been considered in the DEIS.

⁸ Dana Bennett, “Orphan Mine” in “Nature, Culture and History at the Grand Canyon,” Arizona State University and Grand Canyon Association, http://grandcanyonhistory.clas.asu.edu/history_loggingminingranching_orphanmine.html.

Another assumption regarding the likely extent of mining activity deserves reconsideration. For purposes of the DEIS, the Department assumes that no milling would take place in the segregation areas themselves. It assumes that the current industry plans to haul ores to the existing uranium mill in Blanding, Utah would remain unchanged, regardless of the level of actual mining activity, the price of uranium or the price of oil. We agree that this is a possibility, but disagree strongly that it represents the only foreseeable scenario. Depending upon the price of uranium and future discoveries in what USGS describes as thousands of possible breccias pipes in the area, a much larger amount of uranium ore could be mined than that arbitrarily predicted in the DEIS.

If extensive mining were to occur at the same time that oil prices rose, the cost of ore hauling operations or competition for access to the Blanding mill from additional mines in Utah could drive the economics of a Grand Canyon regional uranium mill. Failure to evaluate such a scenario seriously underestimates the deleterious impacts that could result, impacting the Park and its visitation, the Colorado River and the critically important deep R-aquifer.

As the Department knows, the risks associated with milling and mill tailings disposal are substantial, particularly in an area subject to relatively high winds and frequent flash flooding. Any tailings disposal facility would have to be carefully managed, not only through its operational life, but for decades to come. Under the Uranium Mill Tailings Radiation Control Act, this area would present a long-term radiation hazard and be permanently off limits to any activities or visitation. Such a use would clearly be incompatible with the natural resource protection goals of the broader area and the recreation use of the Park, the nearby Monuments and the nearby wilderness areas.

Assumptions regarding compliance with environmental regulations

Another point on which the DEIS fails is its repeated assumption that mine operations will at all times be fully compliant with environmental laws and regulations and that such regulations will consistently offer adequate protections. An assumption of 100% compliance, 100% of the time is, without doubt, at odds with reality, and frankly akin to a prediction that offshore drilling operations will never experience spills. In our view, this assumption should not be used even as the basis for a “best case scenario.” Even under the management of highly competent and well-capitalized operators and enhanced oversight by regulatory agencies, accidents, spills and other problems may occur from time to time, and must be considered.

On this issue, we would direct the Department to its own information and experience with abandoned hardrock mines and bond forfeitures,⁹ to the Environmental Protection Agency’s determination that hardrock mining continues to present a significant financial risk to the federal Superfund program,¹⁰ and to comprehensive studies on mining and water quality.

⁹ See, for example, Robin M. Nazzaro, “Hardrock Mining: Information on Abandoned Mines and Value and Coverage of Financial Assurances on BLM Land,” testimony before the Senate Committee on Energy and Natural Resources, March 12, 2008, Government Accountability Office, <http://www.gao.gov/new.items/d08574t.pdf>.

¹⁰ Environmental Protection Agency, “Identification of Priority Classes of Facilities for Development of CERCLA Section 108(b) Financial Responsibility Requirements,” Federal Register, 74(143), July 28, 2009, www.epa.gov/superfund/policy/financialresponsibility/cercla108b_07-10-09.pdf.

Two reports¹¹ produced by mining engineer Jim Kuipers and geochemist Ann Maest and reviewed by mining experts emphasize the inherent difficulties of predicting—and therefore preventing—water quality impacts at hardrock mines. In their study of predicted and actual water quality impacts at 25 hardrock mines, the scientists found that mining-related exceedences of surface water quality standards occurred at 60% or 15 of the 25 mines. Of those, nearly three-quarters predicted that exceedences could be avoided with appropriate mitigation; others actually predicted that mitigation would not be necessary. Only one mine correctly predicted a moderate potential for exceedences. The results for groundwater impact predictions were similar, with 64% or 16 mines experiencing exceedences of groundwater quality standards. Of these mines, 77% or 10 mines had predicted low potential for groundwater impacts.

While these reports were not specifically focused on uranium mines per se, these findings are relevant to the mining operations in the Grand Canyon region, where each mine will likely encounter a number of different minerals as well as radionuclides, and in some cases, present a potential for creation of acid mine drainage. The studies are particularly pertinent, given the considerable uncertainties in the mechanics of groundwater flows through the region and the lack of information on the extent of contamination from past operations on the Arizona Strip.

Economic benefits of mining, modest and undependable

According to the industry-provided data in the DEIS, the job creation potential of new mining operations is modest at best—projected at only 75 employees per mine, not per year but per each mine’s lifetime. Roughly half of those employees are predicted to come from the local areas, but specialists and higher paid employees may be among those that come from outside of the area. No consideration is given in the assessment to the sensitivity of mining employment to price swings or the well-documented boom-and-bust cycle of hardrock mining operations and the clear possibilities for long shut-down periods, with only skeleton crews to oversee shuttered mines.

At the same time, the DEIS offers a broad and overly optimistic conclusion that mine operations will not affect recreation and tourism-based jobs in the region. Again, we believe that this is not a realistic assessment, since vistas may be marred by drill rigs, power lines and other industrial architecture, visibility impaired due to mine operations and truck trips, and hunting and fishing opportunities disrupted by possible declines in wildlife species and access limitations imposed on currently open public lands. Any contamination associated with mining, such as that found near the abandoned Orphan Mine or Hack Canyon, would also impact hiking and other outdoor recreation opportunities.

In contrast to modest and potentially short-lived employment associated with mining in the region, recreation and travel-related jobs are a mainstay for the entire “Grand Canyon State.” According to a 2005 economic analysis prepared by the Arizona Hospitality Research and Resource Center of Northern Arizona University,¹² the direct yearly employment associated with Grand Canyon National Park travel

¹¹ See *Predicting Water Quality at Hardrock Mines: Methods and Models, Uncertainties, and State-of-the-Art*, http://www.swrcb.ca.gov/academy/courses/acid/supporting_material/predictwaterqualityhardrockmines1.pdf and *Comparison of Predicted and Actual Water Quality at Hardrock Mines: The reliability of predictions in Environmental Impact Statements*, <http://www.earthworksaction.org/pubs/ComparisonsReportFinal.pdf>.

¹² Arizona Hospitality Research and Resource Center, Northern Arizona University, “Grand Canyon National Park, Northern Arizona Tourism Study,” April 2005, <http://www.nau.edu/hrm/ahrrc/reports/Grand%20Canyon%20Comprehensive%20Final%20Report.pdf>.

was more than 9,000 direct jobs per year. It should be noted that that same study found that Park visitors strongly supported protecting the Park's natural resources, identifying the following as the most important Park resources: clean water; clean air; native plants and animals, including endangered species; and natural quiet—all of which could be impacted by mine operations.

Opting for the utmost protection

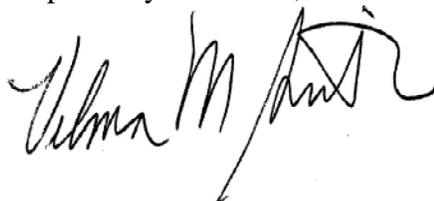
Chapter 2 of the DEIS discusses several possible alternatives beyond the four currently under consideration, ranging from phased mine development, permanent withdrawal, updates to the Mining Law, and new mining requirements, including additional research initiatives, reclamation performance standards, expanded monitoring efforts and a cost-recovery program.

A number of these, including Mining Law reform, are reasonable and long overdue, but, as the document notes, outside of the Department's current authorities. We commend the Department for its effort to consider such solutions, and would argue that the fact that these sensible and very-much needed management controls cannot be put in place under the Mining Law as it now exists means that the Department must choose the highest level of protection that is allowed: a 20-year withdrawal for the full million acres.

We urge the Secretary to follow in the footsteps of conservation pioneers like President Theodore Roosevelt whose leadership has preserved and protected the unique and irreplaceable Grand Canyon region for generations. We also urge the Secretary to recommit the Administration to reforming the underlying law that drives the need for this new protective action.

Again, we appreciate the opportunity to share our views.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Velma M. Smith". The signature is fluid and cursive, with a large, sweeping flourish at the end.

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