

GRAND CANYON TRUST

CLIMATE CRISIS AND THE NEXT GENERATION: A Precautionary Approach to Western Watersheds?

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May, 2013

INTRODUCTION

Extreme drought and wildfires, followed by floods, erosion, and invasive species are devastating watersheds across the intermountain west.¹ At the same time, mining, grazing, and other uses of public lands continue to weaken fragile watersheds and their capacity to produce vital water supplies as climate-induced stresses grow more severe.² Loss of plant cover, erosion, and siltation hurt water quality and accelerate evaporation.³ Watershed integrity is further threatened by air pollutants like mercury⁴ and contaminants from surface and subsurface sources such as acid leaching used in silver and gold mining.⁵ Increasingly, these cumulative impacts become irreversible.⁶

The Bureau of Land Management (BLM) and U.S. Forest Service (Forest Service) manage many of these rapidly degrading western watersheds.⁷ Public land management agencies routinely permit harmful but historically allowed uses, despite passage of more recent environmental laws.⁸ Only rarely do they deny proposed developments in order to “prevent or eliminate damage to the environment”, as Congress intended when it passed the National Environmental Policy Act (NEPA).⁹

This paper begins by reviewing a recent exception in the pattern of how decisions are made on public lands—a case in which the Secretary of the Interior ordered a 20-year ban on all new mining claims on more than a million acres of BLM and Forest Service-managed watersheds adjacent to Grand Canyon National Park. It is a departure from

¹ <http://www.fs.fed.us/wvetac/threats/index.html>; <http://iwjv.org/character-intermountain-west>

² <http://nca2009.globalchange.gov/southwest>

³ <http://soilquality.org/indicators/infiltration.html>

⁴ <http://outreach.colorado.edu/programs/details/id/72>

⁵ http://en.wikipedia.org/wiki/In-situ_leach

⁶ WWP comments on Grazing and Global Warming.doc - Gaia Visions

http://www.nap.edu/openbook.php?record_id=12223&page=23

⁷ <http://www.wildlandfire.com/docs/2007/western-states-data-public-land.htm>

⁸ For example, the U.S. Forest Service dismissed any consideration of a “no action” alternative when permitting a new uranium mine near the Grand Canyon, despite mounting evidence of potentially harmful and irreversible effects. http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5346658.pdf

⁹ National Environmental Policy Act of 1969. <http://ceq.hss.doe.gov/nepa/regs/nepa/nepaeqia.htm>

discretionary decisions by agencies that normally allow development of natural resources on public lands. In this instance, a decision to prevent harm under conditions of uncertainty is butting heads with extreme political and bureaucratic pressure to permit another uranium boom on lands that surround Grand Canyon.¹⁰

The 2012 report, on which the decision was based, concluded that uranium mines located within Grand Canyon watersheds increase risks of “unacceptable” impacts to “animal or human users.”¹¹ Nonetheless, agencies are permitting mining to continue at four uranium claims that were partially developed two decades prior to the decision but were temporarily closed due to falling prices. Despite accumulating evidence that uranium mines pose unacceptable risks, BLM and Forest Service are permitting old mines to re-open without updating plans of operation or prescribing mitigating measures to prevent environmental impacts.¹²

The principal lesson to be learned from trying to stop uranium mining around the Grand Canyon is that it is extremely difficult to cause agencies to change discretionary decisions to permit potentially polluting activities on public lands. Primary barriers to reform include historical uses of public lands for private profit, dominance of short-term economic values in politics, and agency resistance to respond to compelling new studies about the cumulative and irreversible effects of uranium mining. These are common constraints to preventing cumulative adverse impacts of resource development across larger western landscapes.

The paper continues by considering how competing core values are preventing public land managers from addressing widespread and irreversible effects from climate change. It identifies a common cause to our failure to protect Grand Canyon watersheds from uranium pollution and in preventing unacceptable impacts of climate change. It suggests how, in the case of Grand Canyon, community-based advocacy against unacceptable risks provided an impetus to alter the predominant pattern a decision-making. A small change was made possible when preventing permanent harm to water for future generations was asserted as a non-negotiable value by citizens that depend on arid lands for survival.

A larger shift in how public land management agencies apply discretion might be achieved by considering an alternative and more precautionary¹³ approach to protecting

¹⁰ In 2010, hydrogeology professor Abe Springer recommended the “precautionary principle” as an important concept for guiding government’s decision on whether to limit uranium mining activities within Grand Canyon watersheds http://www.grandcanyontrust.org/documents/gc_uranium_abeSpringer2010.pdf.

¹¹ <http://www.doi.gov/news/pressreleases/Interior-Invites-Public-Input-on-Future-Hardrock-Mineral-Development-in-Northern-Arizona-near-the-Grand-Canyon.cfm>

¹² Decisions to permit development on public lands are an every-day occurrence. Management agencies routinely review proposed uses, publically disclose potential impacts, and issue decisions that allow activities such as mining to proceed. In most cases, scientific evidence that a specific action may cause temporary or permanent harm does not prohibit it from occurring, nor are cumulative impacts from a multitude of decisions fully considered in the permitting process.

¹³ “Unfortunately, precautionary action has been the exception rather than the rule in U.S. environmental policy. Instead, even laws with precautionary intent and substance have been undermined, overridden, and

western watersheds from unacceptable risks in the context of climate change. The paper concludes by proposing five guidelines for producing healthy western watersheds as federal agencies evaluate environmental impacts of existing and proposed uses on public lands as required under NEPA.

I. CAMPAIGN TO BAN URANIUM MINING WITHIN GRAND CANYON WATERSHEDS

A. EARLY EFFORTS

Nearly a half century of uranium mining has left a toxic legacy of contaminated drinking water and elevated levels of background radiation on federal and tribal lands in Arizona, Utah, New Mexico, and Colorado. Potential health effects include “lung cancer from inhalation of radioactive particles, as well as bone cancer and impaired kidney function from exposure to radionuclides in drinking water.”¹⁴

In 1979, our nation’s largest nuclear accident¹⁵ occurred when an earthen dam failed near Church Rock, New Mexico. It spilled 93 million gallons of highly radioactive water into the headwaters of Little Colorado River.¹⁶ Wastewater from the uranium mill permanently polluted wells located far downriver where Navajo families subsist on sheep and locally grown food. Due to the accident and hundreds of other sites poisoned by uranium mines and mills, the Navajo Nation banned all uranium-related activities in 2005 on its four-million acre reservation.¹⁷

The National Park Service (NPS) advises boaters and hikers not to drink or bathe in the Little Colorado River, where it joins the Colorado River deep within the heart of the Grand Canyon. During the 1980s, several uranium mines were developed within the Kanab Creek watershed. Grand Canyon National Park currently identifies Kanab Creek and five other streams and springs where excessive radionuclides have been found and warns backcountry visitors not to use these waters.¹⁸

Canyon Mine

In 1986, the U.S. Forest Service approved the development of Canyon Mine for uranium removal within a few miles of Grand Canyon National Park and at the headwaters of

poorly enforced. For example, the Endangered Species Act is triggered only in a crisis, after major harm has occurred. http://www.sehn.org/rtfdocs/sf_whitepaper.doc

¹⁴ <http://www.epa.gov/region9/superfund/navajo-nation/>

¹⁵ “The accident released more radiation than the [Three Mile Island accident](#) that occurred four months earlier and was the largest release of radioactive material in U.S. history. [Groundwater](#) near the spill was contaminated and the Puerco rendered unusable by local residents. The governor of New Mexico refused the [Navajo Nation](#)’s request that the site be declared a [federal disaster area](#), limiting aid to affected residents.^{[2]”}

¹⁶ http://en.wikipedia.org/wiki/Church_Rock_uranium_mill_spill

¹⁷ <http://navajotimes.com/news/2012/0112/011212Ban.php>

¹⁸ <http://www.nps.gov/grca/naturescience/waterquality.htm>

Havas Creek. The Forest Service concluded that “neither the water quality on the Havasupai Indian Reservation nor Grand Canyon National Park should be environmentally affected either directly or indirectly by the development of the Canyon Mine.”¹⁹ At the time, scientists had yet to detect contamination from another, nearby uranium mine that is now known to be causing elevated radionuclide levels in a spring used by wildlife and hikers in the Grand Canyon.²⁰

Havasupai leaders appealed the decision because Canyon Mine might contaminate springs that supply their village with drinking water. The mine’s location would also desecrate nearby Red Butte and prevent their use of it for prayer and religious practices. Havasupai lost their court appeal. Nonetheless, the Forest Service reviewed Canyon Mine’s potential impacts, as required by NEPA and used its discretionary authority in deciding that the mine would not cause any adverse impacts to aquifers that supply water to springs in the Grand Canyon.

The Forest Service also surmised that it did not have the authority to deny the permit because of the “statutory right” to mine under the general mining laws and that its 1986 decision is “consistent with previous Forest Service administrative decisions.” Therefore, it ruled out a “no mining” alternative, which would have prevented the mine from opening.²¹

As it turned out, Canyon mine was only partially developed and mothballed when the global price for uranium plummeted with the fall of the Soviet Union in the early 1990s. The same fate fell upon Arizona 1, Pinenut, and Kanab North uranium mines located on public land administered by the BLM immediately north of Grand Canyon.

Uranium Bust Goes Boom

As world uranium supplies declined, prices began to rise again in 2006. Thousands of new uranium claims were filed and owners began to prepare to reopen existing mines.²² Predictably, Forest Service and BLM officials used their discretion in permitting exploratory drilling to proceed with minimal environmental review. Permits were granted despite historical evidence that uranium mining had detrimental effects on humans and the environment. The agencies later approved reopening of partially developed mines, including Arizona 1 and Canyon Mine, without updating decades-old operating plans, environmental assessments, and reclamation and remediation measures.

¹⁹ Page 8, http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5346658.pdf

²⁰ Radioactive residues from previous mining activities continue to contaminate Grand Canyon’s springs and streams. On the South Rim, the Orphan Mine contaminates springs below it. The National Park Service advises against “drinking and bathing” in Kanab Creek, Horn Creek, and Little Colorado River where “excessive radionuclides” have been found. <http://www.nps.gov/grca/naturescience/waterquality.htm>

²¹ A 2012 federal decision to ban new mining claims in the same area said that the agency has “substantial discretion” to deny a permit to mine uranium on any acre of the Kaibab National Forest. http://www.blm.gov/pgdata/etc/medialib/blm/az/pdfs/withdraw/feis.Par.90143.File.dat/Signed_NAZ_Witdrawal_ROD.pdf

²² http://www.nytimes.com/2008/02/07/washington/07canyon.html?_r=0

Kaibab Forest officials granted a “categorical exclusion” to exploratory drilling operations on undisturbed areas across public lands south of Grand Canyon. This discretionary decision meant that drilling rigs could drive across open forests and occupy and disturb public land with heavy machinery for months without preparing any environmental assessment as required under the National Environmental Policy Act. In response, Grand Canyon Trust and allied advocates challenged the decision in federal court.

Temporary Halt to New Claims

In April, 2008, United States District Judge Mary Murguia granted plaintiff’s motion for a temporary restraining order and preliminary injunction to halt exploratory uranium drilling on Kaibab National Forest. Her findings concluded: “The Project may cause irreparable harm to wildlife and groundwater and the natural resources and recreational opportunities in Grand Canyon National Park.”²³

Judge Murguia’s decision to override agency discretion temporarily halted exploratory drilling for uranium on the Kaibab National Forest. However, much more powerful forces would be necessary to counter enormous political pressure and agency determination to permit uranium companies to mine on public lands. It would take a national campaign with sustained support by local and regional interests.²⁴

B. GRAND CANYON WATERSHEDS PROTECTION ACT

Concurrent with preparing the lawsuit, advocates were working with Arizona Congressman Raúl Grijalva to introduce the Grand Canyon Watersheds Protection Act (GCWPA) in the spring of 2008. If enacted, the law would prevent new mining claims on more than one-million acres of watersheds that drain directly into Grand Canyon. Two watersheds north of the Canyon are BLM administered, while the southern one is under Forest Service management.²⁵

Grijalva’s subcommittee of the House Committee on Natural Resources convened four hearings during the next two years, with testimony, letters, and editorials reflecting an ever-growing and diverse coalition of support for preventing more pollution from uranium mining.²⁶ Its potential to inflict permanent harm was a common thread of concern expressed in a multitude of ways by tribal leaders, water managers, county supervisors, scientists, and the National Park Service.

²³ http://www.grandcanyontrust.org/documents/gc_uranium_troUSFS.pdf

²⁴ <http://www.grandcanyontrust.org/news/2012/02/grand-canyon-trust-uranium-campaign-chronicle/>

²⁵ http://www.grandcanyontrust.org/documents/gc_uranium_mapClaims.pdf

²⁶ <http://naturalresources.house.gov/calendar/eventsingle.aspx?EventID=165460;>

<http://indiancountrytodaymedianetwork.com/ictarchives/2008/04/21/standing-united-80009;>

http://www.grandcanyontrust.org/documents/gc_uranium_SNWAletter.pdf;

http://www.nytimes.com/2009/07/21/opinion/21tue3.html?scp=7&sq=grand%20canyon%20uranium%20mining&st=cse&_r=0

Clash About Cumulative Impacts

Navajo President Joe Shirley's testimony before Congress described the consequences cumulative impacts and captured the rage of regional residents who continue to suffer from the last uranium boom:

"Today, the legacy of uranium mining continues to devastate both the people and the land. The workers, their families, and their neighbors suffer increased incidences of cancers and other medical disorders caused by their exposure to uranium. Fathers and sons who went to work in the mines and the processing facilities brought uranium dust in to their homes infecting their families. The mines, many simply abandoned, have left open scars in the ground leaking radioactive waste. The companies that processed the uranium ore dumped their waste in open, and in some cases unauthorized, pits infecting both the soil and the water. The tragedy of uranium's legacy extends not only to those who worked in the mines, but to those who worked and lived near the mines that also experienced devastating illnesses. Decades later, the families who live in those same areas continue to experience health problems today. The remnants of uranium activity continue to pollute our land, our water, and our lives. It would be unforgivable to allow this cycle to continue for another generation."²⁷

The Navajo Nation's opposition to uranium mining in the region continues to be unequivocal and non-negotiable. To them, it imposes irreparable harms and unacceptable risks.

However, the federal government's position was that existing environmental laws provide ample protection from new mines:

"The Administration does not believe withdrawal of this area is necessary. Existing law, including the Clean Air Act, the Clean Water Act, the Federal Land Policy and Management Act, the National Environmental Policy Act, Forest Service and Bureau of Land Management policy, and the Kaibab National Forest Land Management Plan, as well as applicable state and local permitting requirements, provide sufficient direction for the protection of resources while providing for multiple use of the area."²⁸

This statement by a top-tier administration official came only two months after a federal judge had ruled that the Forest Service failed to comply with NEPA and to ensure that exploratory drilling for uranium would not cause irreparable harm to Grand Canyon's watersheds.²⁹

²⁷ http://www.grandcanyontrust.org/documents/gc_uranium_shirley032808.pdf

²⁸ Testimony of Mark Rey, U.S. Department of Agriculture, undersecretary natural resources and environment, before the subcommittee on national parks, forests, and public lands, of the House Natural Resources Committee June 5, 2008 concerning H.R. 5583 – Grand Canyon Watersheds Protection Act of 2008. <http://naturalresources.house.gov/calendar/eventsingle.aspx?EventID=165381>

²⁹ Judge Murguia's decision applied only to the Tusayan District of the Kaibab National Forest and not to lands administered by the BLM on the north side of the Grand Canyon.

The clash of values and beliefs accelerated as BLM permitted uranium mining to proceed without new environmental reviews and public input. Powerful mining lobbyists invested heavily in approaching mid-term elections, and the Grand Canyon Watersheds Protection Act became a high-profile campaign issue. Advocates began to shift their strategy from enacting new legislation, which Arizona's two senators opposed, to identifying alternatives that might offer temporary relief from additional risks incurred by the surge of new uranium claims on public land watersheds surrounding Grand Canyon.

C. A TWO-YEAR TIME OUT TO RECONSIDER URANIUM MINING

By early 2008, public awareness about risks from uranium mining was growing due to congressional hearings and national news coverage. Rare disagreements among federal land managers were also surfacing. Grand Canyon Superintendent Steve Martin expressed concerns about discretionary decisions being made by federal agencies that managed public lands next to the park:

*"There should be some places that you just do not mine," Martin told the Los Angeles Times. "I worry about uranium escaping into the local water, and about its effect on fish in the Colorado River at the bottom of the gorge, and on the bald eagles, California condors and bighorn sheep that depend on the canyon's seeps and springs. More than a third of the canyon's species would be affected if water quality suffered."*³⁰

Nonetheless, BLM managers continued to permit exploratory drilling for uranium on public lands north of the park. BLM ignored National Park Service concerns and permitted the Arizona 1 uranium mine to reopen without updating its 1988 environmental assessment. Again, the Grand Canyon Trust and co-plaintiffs sued BLM for failure to comply with NEPA and other federal environmental regulations.³¹

Emergency Declared by Congressional Committee

With passage of Grand Canyon Watersheds Protection Act stalled, an astute congressional staff member suggested use of an obscure provision in the Federal Land

³⁰ <http://articles.latimes.com/2008/may/04/nation/na-uranium4>

³¹ <http://www.grandcanyontrust.org/news/2009/11/lawsuit-challenges-uranium-mine-that-threatens-water-and-wildlife-of-the-grand-canyon/>. On May 7, 2011, U.S. District Court Judge David Campbell ruled that BLM's discretion to allow Arizona 1 owners to resume operations under its 1988 plan of operations was "based on a permissible interpretation of the regulations." Judge Campbell, and federal judges in general, frequently rule in favor of agency discretion in the presence of regulatory ambiguity, thus providing additional authority for agencies to permit pollution to occur despite legislative intent.

Policy and Management Act (FLPMA) that compelled the Secretary of the Interior to order an emergency ban on new mining claims.³²

On June 25, 2008, the U.S. House of Representatives' Committee on Natural Resources directed the Secretary of the Interior to immediately withdraw over one million acres of federal land near Grand Canyon National Park. The resolution declared "that an emergency situation exists regarding uranium mining near Grand Canyon National Park and extraordinary measures must be taken to preserve values that would otherwise be lost."³³

Secretary of the Interior Dirk Kempthorne refused the Congressional order to ban new uranium claims. Instead, he directed his department to repeal its rule on emergency withdrawal of public lands because "constitutional issues may arise whenever the committee notification procedure is used."³⁴ However, time ran out before the outgoing Bush administration could change the rules.

Two-Year Time Out Declared by Secretary of the Interior

In July, 2009, newly appointed Secretary of the Interior Ken Salazar stood on the rim of Grand Canyon to make a special announcement: "I am calling a two-year 'Time-Out' from all new mining claims [on public lands] near the Grand Canyon because we have a responsibility to ensure we are developing our nation's resources in a way that protects local communities, treasured landscapes, and our watersheds," said Secretary Salazar.³⁵

Secretary Salazar's announcement spelled out studies to determine if the lands should be withdrawn for a longer period of up to 20 years.³⁶ It also initiated an Environmental Impact Statement (EIS) process under NEPA. The EIS would be directed by the Bureau

³² Section 204(e) of the Federal Land Policy and Management Act of 1976 allows for emergency withdrawals when "extraordinary measures must be taken to preserve values that would otherwise be lost." These withdrawals may be made on the Secretary's own initiative, "or when the Committee on Natural Resources of the House of Representatives or the Energy and Natural Resources Committee of the Senate notifies the Secretary" that a qualifying emergency exists.

³³ http://www.grandcanyontrust.org/documents/gc_uranium_houseEmergencyResolution_062508.pdf;
http://www.azcentral.com/news/articles/2008/06/25/20080625biz-MiningGrdCyn-25.html?nclick_check=1

In response, Grand Canyon Trust and co-plaintiffs filed a lawsuit, challenging the failure of Secretary Kempthorne to withdraw these areas as directed by FLPMA and the emergency resolution. The lawsuit was withdrawn after President Obama took office in January of 2009, and the new Secretary of the Interior used his authority to order a temporary ban on new mining claims on public lands surrounding Grand Canyon.

³⁴ http://www.grandcanyontrust.org/documents/gc_uranium_bingamanLetter.pdf

³⁵ http://www.blm.gov/wo/st/en/info/newsroom/2009/july/NR_0720_2009.html

³⁶ In February of 2010, the U.S. Geological Survey (USGS) published a peer-reviewed report on the "effects of 1980s uranium mining in the Kanab Creek area of Northern Arizona." The study was the first systematic sampling of mine sites since they were abandoned in the early 1990s. At the Kanab North mine, the study found: "Mined waste rock, uranium ore, pond sludge, and local wind- and water-dispersed fine particles on the unreclaimed mine site (all of which contained high concentrations uranium and other trace element constituents such as arsenic) were exposed to the ambient environment for about 20 years at the partially mined site....Erosion within the site has moved sediment into the lined pond."

<http://pubs.usgs.gov/sir/2010/5025/>

of Land Management in cooperation with the U.S. Forest Service, the U.S. Geological Survey, and the National Park Service.

D. “UPRISING” AT RED BUTTE

An unprecedented, unified voice arose from Havasupai, Hualapai, Kaibab Paiute, Navajo, Hopi, and Zuni people to oppose uranium mining’s return to their aboriginal homeland. Havasupai elders convened a three-day prayer vigil and protest rally at Red Butte to build intertribal, national, and international support for banning uranium mining. “The Havasupai have lived in and around the Grand Canyon since before there was a United States of America,” explained Matthew Putesoy. “As the ‘guardians of the Grand Canyon,’ we strenuously object to mining for uranium here. It is a threat to the health of our environment and tribe, our tourism-based economy, and our religion.”³⁷ A powerful groundswell of public support for tribes that were opposing uranium mining followed the “uprising” at Red Butte.³⁸

Mining industry lobbyists countered by persuading a few Republican representatives to attach riders to bills that would block the proposed withdrawal and, eventually, to introduce the “Northern Arizona Mining Continuity Act of 2011.” Throwing truth to the wind, Arizona Congressman Trent Franks said: “Despite the fact that uranium mining efforts have for decades operated without impacting the environment or the beauty of our national parks, [the Obama administration is] putting the desires of a handful of rabid environmentalists above America’s long-term energy independence and national security.”³⁹

Sporting groups replied: “Uranium mining threatens to pollute our clean water and spoil habitat for fish and big game near the Grand Canyon,” said Jim Stipe, chairman of the Arizona Council of Trout Unlimited. “Fishing and hunting are big business in Arizona, especially near the Grand Canyon, and have been for generations.”⁴⁰

Public opinion and popular support for the 20-year ban grew steadily and more diverse as the deadline for the controversial decision approached. Tourism businesses, hunting, fishing groups, ranchers, conservationists, and municipal water managers commented favorably on the “no mining” alternative.⁴¹ Chambers of commerce, community leaders, and elected officials were also among those mainstream voices speaking out to protect

³⁷ <http://www.grandcanyontrust.org/news/2011/01/uprising-at-red-butte/>

³⁸ <http://www.grandcanyontrust.org/news/2009/07/hundreds-attend-havasupai-uranium-mining-protest-at-red-butte/>

³⁹ http://www.mccain.senate.gov/public/index.cfm?FuseAction=PressOffice.PressReleases&ContentRecord_id=f8dad806-f5fd-75c7-0cb7-73615cf33dc9

⁴⁰ <http://www.grandcanyontrust.org/news/2011/07/tourism-businesses-and-sportsmen-see-economic-threat-in-congressional-effort-to-overturn-protections-for-national-park/>

⁴¹ Alternative B is to withdraw about 1 million acres from hardrock mineral exploration and mining for 20 years subject to valid existing rights. <http://www.doi.gov/news/pressreleases/Interior-Invites-Public-Input-on-Future-Hardrock-Mineral-Development-in-Northern-Arizona-near-the-Grand-Canyon.cfm>

the Grand Canyon.⁴² Prominent people who supported the moratorium weighed in with a full-page ad of their letter to President Obama, published in the November 18, 2011 edition of the *New York Times*.⁴³

Secretary Salazar announced the Obama administration's decision on January 9, 2012.⁴⁴ "A withdrawal is the right approach for this priceless American landscape," Salazar said.

*"People from all over the country and around the world come to visit the Grand Canyon. Numerous American Indian tribes regard this magnificent icon as a sacred place and millions of people in the Colorado River Basin depend on the river for drinking water, irrigation, industrial and environmental use. We have been entrusted to care for and protect our precious environmental and cultural resources, and we have chosen a responsible path that makes sense for this and future generations."*⁴⁵

E. LOOKING AHEAD

The Record of Decision and supporting EIS revealed significant new information. Together, these documents provide compelling reasons to take a more cautious and careful approach when reviewing permits on all uranium mining activities. However, federal agencies are not willing to update environmental reviews and revise decisions that were completed more than two decades ago, nor has there been much change in historic patterns of agency decision-making or assumptions.⁴⁶

The multiyear campaign to protect Grand Canyon watersheds from uranium mining began as a legal and legislative strategy, added an administrative withdrawal strategy, and is continuing by challenging BLM and Forest Service decision-making in court. At the same time, the Grand Canyon Trust and allies have sided with Department of the Interior

⁴² <http://www.grandcanyontrust.org/news/2011/03/broad-based-support-builds-for-1-million-acre-withdrawal-at-grand-canyon/>

⁴³ http://www.pewenvironment.org/uploadedFiles/PEG/Publications/Other_Resource/DontUndermineGrandCanyonAd-June2011.pdf

⁴⁴ <http://www.grandcanyontrust.org/news/2012/01/success-uranium-mining-to-be-banned-near-grand-canyon/>

⁴⁵ <http://www.doi.gov/news/pressreleases/Secretary-Salazar-Announces-Decision-to-Withdraw-Public-Lands-near-Grand-Canyon-from-New-Mining-Claims.cfm>

⁴⁶ In 2012, owners of Canyon Mine notified the Forest Service that they intended to resume operations. It reviewed the 1986 "Plan of Operations, the environmental analysis and the decision for any changes in laws, policies or regulations that might require additional federal actions to be taken before operations resume" and decided that no modification, correction, supplementation, revision, or amendment to those documents would be necessary. The Forest Service concluded, under its discretionary authority, that operations at the Canyon Mine "may continue as a result of no further federal authorization being required." https://fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5376035.pdf Havasupai attorneys and allies filed a lawsuit to challenge this new decision, citing the need to complete tribal consultations and to update the EIS in order to improve plans for mitigating the mine's adverse impacts. <http://www.grandcanyontrust.org/news/2013/03/havasupai-tribe-conservation-groups-challenge-uranium-mine-threatening-grand-canyon/>; <http://www.azcentral.com/news/articles/20130326grand-canyon-uranium-mine-ire.html>

solicitors in defending against the mining industry's attack on the withdrawal's constitutionality as well its compliance with NEPA and other federal laws.⁴⁷

II. LESSONS LEARNED

The principal lesson to be learned from trying to stop uranium mining around the Grand Canyon is that it is extremely difficult to cause agencies to change discretionary decisions to permit potentially polluting activities on public lands.⁴⁸ An unprecedented coalition of citizens is challenging federal decisions on a million acres of public land that is integral to Grand Canyon's hydrology, cultural and political history, ecology, and a regional, tourism-based economy. But all they have accomplished is to postpone new mining claims from being filed for twenty years. Pre-existing mines and claims with valid rights will proceed under business-as-usual practices of management bureaus and the 1872 Mining Law.

A. PERSISTENT PRESSURES TO USE PUBLIC RESOURCES FOR PRIVATE PROFIT

Grand Canyon has been coveted by corporations for more than a century. The current seven-year uranium campaign is a clash in a contest that began long before Congress created Grand Canyon National Park in 1919. When President Theodore Roosevelt decreed the Grand Canyon Game Preserve in 1906, miners and cattle barons had already laid claim to the Grand Canyon and were charging entrance fees for visitors to access an ancient trail to Indian Gardens.

Roosevelt's withdrawal of public land for special purposes also banned new mining claims. Designation of the Grand Canyon as a national monument two years later under the 1908 Antiquities Act further provoked territorial entrepreneur Ralph Cameron and vested economic interests to mount a ten-year campaign to prevent its designation as a national park.

Congress left out the Grand Canyon in its historic decision to establish the national park system in 1916. The forces of free enterprise won that skirmish, foretelling intense battles to protect the Grand Canyon from many other external threats: air pollution from coal plants, noise pollution from air tours, destruction of native fish and archaeological sites by hydroelectric driven water releases from Glen Canyon Dam, and drying of seeps and springs due to groundwater pumping by nearby development.

⁴⁷ <http://www.grandcanyontrust.org/news/2013/03/judge-upholds-uranium-mining-ban-on-1-million-acres-near-grand-canyon/>

⁴⁸ "The heart of the problem," according to law professor Mary Wood, is that "nearly every law also provides authority to the agencies to permit, in their *discretion*, the very pollution or land damage that the statutes were designed to prevent." <http://law.uoregon.edu/assets/facultydocs/mwood/legal.pdf>

Delays in designating Grand Canyon as a national park and failure to protect its watersheds from uranium mining are the result of past and present pressures to convert public resources into private profit. But they are also symptomatic of bigger problems in how our nation addresses irreversible environmental impacts.

B. DOMINANCE OF SHORT-TERM ECONOMICS IN POLITICS AND PUBLIC POLICY

Politicians and mining industry magnates protested vehemently to the 20-year ban on new mining claims. They preferred the “no action” alternative, wherein “hardrock mineral exploration and mining would continue throughout the study area in accordance with existing BLM and Forest Service regulations and land use plans.”⁴⁹

During the two-year process of completing the Environmental Impact Statement for the “Proposed Northern Arizona Mineral Withdrawal,” mining companies did everything in their power to influence BLM’s assumptions about reasonably foreseeable development of various alternatives. Sources cited in the 2011 Draft EIS and contractors who helped prepare key sections included uranium industry representatives, ethically conflicted scientists, and subcontractors who worked for the industry.⁵⁰ Not surprisingly, the Draft EIS grossly inflated revenue projections, economic benefits, and employment for uranium mining and undervalued the importance of Grand Canyon tourism to state and regional economies.⁵¹

Nonetheless, pro-withdrawal forces managed to prevail by doing everything in their power to counter intense opposition to the highly politicized decision. The Secretary of the Interior selected the alternative that banned new mining claims for 20 years but allows uranium mining to continue on preexisting mines and claims with valid rights. While the decision departs from prevailing agency assumptions in several important ways, it is not the “no mining” alternative that many still hope to achieve.

In opting to order the 20-year mineral withdrawal, the Obama Administration made a political decision that was aggressively opposed by Arizona Senators John McCain and Jon Kyl, Governor Jan Brewer, and other outspoken elected officials in Utah and Arizona. Support for sustaining the decision through new administrations or numerous legal challenges is far from guaranteed. Also, the chances of passing the Grand Canyon Watersheds Protection Act remain slim, but somewhat better than competing legislation in Congress to overturn the administrative decision. The bottom line is that Grand Canyon’s watersheds are still threatened by uranium mining, and short-term economic values continue to prevail in agency decision-making on public lands.

⁴⁹ http://www.blm.gov/pgdata/etc/medialib/blm/az/pdfs/withdraw/feis.Par.90143.File.dat/Signed_NAZ_Withdrawal_ROD.pdf

⁵⁰ <http://www.doi.gov/news/pressreleases/Interior-Invites-Public-Input-on-Future-Hardrock-Mineral-Development-in-Northern-Arizona-near-the-Grand-Canyon.cfm>

⁵¹ <http://www.grandcanyontrust.org/news/2011/04/professional-analysis-of-grand-canyon-uranium-deis-questions-veracity-of-economic-data/>

C. AGENCY RESISTANCE TO ASSESSING CUMULATIVE AND IRREVERSABLE IMPACTS

The EIS for the 2012 withdrawal decision reviewed new data from a scattering of samples and a cumulative synthesis of information from previous studies of water and soil near uranium mines and haul roads. In contrast to the conclusion reached nearly three decades earlier, the federal government said that risks posed by new uranium claims were “unacceptable.”⁵²

For example, sludge at Kanab North’s containment pond contained 1,800 parts per million of uranium. Thirty parts per billion is the federal and state standard considered safe for human consumption. Reclamation standards require a return to ambient levels well below Kanab North mine’s levels of soil and water pollution. The pond has been used by birds and bighorn sheep for drinking water for more than two decades. The surrounding contaminated soil is home to kangaroo rats and many other small mammals and reptiles. As for the half-dozen uranium mines within the proposed withdrawal area that were reclaimed according to BLM standards, USGS found indicators of contamination at every one of them.

Despite growing evidence of cumulative impacts from previous mines, the Department of the Interior decided to delay any decision about approval of new uranium mining claims by 20 years. Public land managers also decided not to revisit decades-old decisions and permitted pre-existing mines to resume operations. Nor did they consider shifting the burden of proof to the mining industry to demonstrate that uranium mining would not cause irreparable harm.⁵³

Instead, the decision said: “Although obtaining additional data to address the uncertainty regarding impacts on water quantity and quality is not essential to a reasoned choice, such data, particularly data collected on a site-specific basis as mines are developed, will

⁵² The USGS report found that “floods, flash floods, and debris flows caused by winter storms and intense summer thunderstorms occur in the region and can transport substantial volumes of trace elements and radionuclides.” It noted that “fractures, faults, sinkholes, and breccia pipes occur throughout the area and are potential pathways for downward migration of surface water and groundwater.” The EIS for the proposed withdrawal concluded that “any mine located within the groundwater drainage area calculated for a spring might cause an impact ranging from none to major to that spring” and that “the risk of those impacts to animal or human users of the water is unacceptable.”

http://www.blm.gov/pgdata/etc/medialib/blm/az/pdfs/withdraw/feis.Par.88586.File.dat/NorthernArizona-ROD-v20-1%2011%202012_wsignederrata.pdf

⁵³ Who bears the burden of proof and who is adversely affected by agency errors of omission are consequential questions. Concerns about resource managers’ failure to take preventive action, absent scientific certainty, have led Grand Canyon Trust scientist Mary O’Brian and scores of western ecologists to call for a shift in who bears the burden of proof. <http://oregonstate.edu/ua/ncs/archives/2012/nov/climate-change-increases-stress-need-restore-grazed-public-lands>; <http://www.sciencemag.org/content/333/6040/301>; <http://www.grandcanyontrust.org/news/2012/11/climate-change-to-bring-western-public-lands-higher-temperatures-probable-deepening-of-droughts-and-more-extreme-precipitation-events/>; <http://scholarsarchive.library.oregonstate.edu/xmlui/bitstream/handle/1957/25766/UncertaintyAndPrecautionaryManagement.pdf?sequence=1>

nevertheless be helpful for future decision-making in the area.”⁵⁴ Thus, the agency viewed the prospect of gathering new data as a positive opportunity to document impacts of uranium mining.

Yet it ignored the downside of irreversibly contaminating groundwater that the EIS considered as a possibility based on new information. If an intense thunderstorm produces a flash flood that inundates Canyon Mine, substantial volumes of radionuclides could be transported downward into Havasupai’s drinking water and springs used by hikers and wildlife in the Grand Canyon.

In essence, the agency’s decision said “let’s use caution and wait twenty years to collect more data until we know for sure how much harm uranium mining is causing and before we decide whether to approve new mining claims.” In the meantime, “we’ll allow pre-existing mines and claims to impose irreversible impacts on living communities, while gathering evidence to confirm adverse effects that have been observed elsewhere.”

A very high threshold is needed before agencies decide that new evidence of cumulative and irreversible impacts is sufficient to prohibit historically permitted uses to occur. This finding is frequent in research about organizational behavior. The Forest Service and BLM “resist change, because organizations, by design, are the enemies of change. In fact, they are supposed to resist it. The reason for the creation of bureaucracies is to replace uncertain outcomes with the stability and routine or organized relationships.”⁵⁵ The “longer an agency exists, the more likely its core tasks will be defined in ways that minimize the costs to the operators performing them, and thus in ways that maximize the costs of changing them.”⁵⁶

III. CLIMATE CHANGE AND PUBLIC LANDS

Failure to protect Grand Canyon’s watersheds from uranium mining is symptomatic of an even more foreboding challenge. In the big scheme of things, a mere million acres of land is a small piece of real estate when the future of our entire planet is at stake:

Global warming is a threat that eclipses all others, and it is accelerating... Without an engaged public voicing core environmental values on a regular basis, a very different set of values steers the agencies’ discretion. The shrill call of private property rights is heard in the halls of almost every agency every day. Industrialists and individuals of all sorts scream out to these agencies not to draw that regulatory line on their activity — because doing so would impair their property rights or hurt their economic goals.... When this bureaucratic oppression

⁵⁴http://www.blm.gov/pgdata/etc/medialib/blm/az/pdfs/withdraw/feis.Par.90143.File.dat/Signed_NAZ_Withdrawal_ROD.pdf

⁵⁵ <http://www.democracy.uci.edu/files/democracy/docs/conferences/grad/ensch.pdf>

⁵⁶ James Q. Wilson, *Bureaucracy: What Government Agencies Do and Why They Do It* (New York: Basic Books, Inc., 1989), 131.

*continues long enough, the status quo takes hold and changes the mindset of the agencies.*⁵⁷

Present and future generations will pay the price for our failure to take precautionary measures to protect our homeland.⁵⁸

Competing Core Values

How are public land managers responding to the clear and present danger of climate change? In October of 2009, Secretary of the Interior Salazar issued guidelines to “coordinate an effective response” to climate change, while continuing to manage “America’s public lands and oceans⁵⁹ not just for balanced oil, natural gas, and coal development, but also—for the first time ever—to promote environmentally responsible renewable energy development.⁶⁰

In response, the Bureau of Land Management proposed a “landscape approach” to managing public lands that “builds on land management concepts and experiences that have been evolving for nearly three decades.”⁶¹ As directed in the Secretary’s order, a nationwide “network of public-private partnerships” was established in recognition of the fact that “these challenges transcend political and jurisdictional boundaries and require a more networked approach to conservation—holistic, collaborative, adaptive and grounded in science.”

Thus, BLM in collaboration with other federal agencies and partners established a process to respond to climate change and its threats to “core values.” These include the ability of public lands to produce “vital water supplies and natural resources for energy, food, and shelter.”⁶²

Core Value: Energy Development

In response to the Secretary’s policy, significant accomplishments have already been made in expediting permits for large solar and other renewable energy projects,⁶³ as well as in leasing public lands for coal, natural gas, and oil.⁶⁴ But overall progress in which public land management agencies are responding is “quite limited.”⁶⁵ Public land managers have yet to incorporate climate change considerations “into everyday decision

⁵⁷ <http://law.uoregon.edu/assets/facultydocs/mwood/ntreclaiming.pdf>

⁵⁸ The precautionary principle has many origins, including indigenous healers and the Hippocratic Oath ministered by medical doctors to “first do no harm.” In reviewing various definitions and applications, one practitioner noted that “the precautionary principle is based on three core elements: potential harm, scientific uncertainty, and precautionary action.” <http://www.sehn.org/pdf/putvaluesfirst.pdf>

⁵⁹ <http://www.thefreelibrary.com/The+Gulf+oil+spill%3A+the+road+not+taken.-a0254013595>

⁶⁰ [http://www.nps.gov/sustainability/documents/Quick-Links/SecOrder3289\[1\].pdf](http://www.nps.gov/sustainability/documents/Quick-Links/SecOrder3289[1].pdf)

⁶¹ http://www.blm.gov/wo/st/en/prog/more/Landscape_Approach.html

⁶² <http://www.blm.gov/wo/st/en/prog/more/climatechange.html>

⁶³ http://www.blm.gov/wo/st/en/prog/energy/renewable_energy.html

⁶⁴ http://www.blm.gov/wy/st/en/programs/energy/Oil_and_Gas/Leasing.html

; http://www.blm.gov/wy/st/en/programs/energy/Coal_Resources/PRB_Coal.html

⁶⁵ http://sciencepolicy.colorado.edu/admin/publication_files/2012.03.pdf

making” because it “remains a lower priority than other issues.” Another study reviewed progress in implementing “adaptation projects” for mitigating climate change impacts and concluded that few had occurred due to budget constraints and “lack of specific agency direction” and “demand to take action.”⁶⁶

Expediting energy development on public lands is the prevailing priority in implementing the Secretary of the Interior’s policy on climate change.⁶⁷ More than a decade ago, BLM adopted a goal of managing for “resilience,” which it defined as “the capacity of an ecosystem to maintain or regain normal function and development following disturbance.” Achieving a balance that accelerates energy development is a “daunting and rather ill-defined task” in making difficult decisions “about how to promote ecological resilience in the face of climate change.”⁶⁸

Core Value: Vital Water Supplies

Seven months after the Department of the Interior issued its climate change policy, the Deepwater Horizon accident caused a massive and unprecedented oil spill in the Gulf of Mexico. The climate policy called for responsibly managing “public lands and oceans” for energy development. Neither the agency nor corporations foresaw any need to plan for such a “low-probability, high impact” event or the need to take precautionary measures to prevent it.⁶⁹ Threats posed by energy development, in this instance, trumped those of climate change in delivering a devastating blow to “vital water supplies,” vibrant sea life, and Gulf Coast tourism. Department of the Interior officials dropped nearly everything, including implementing climate change guidelines, as they responded to the crisis.

Of climate change’s many known and unknown risks, its effects on the hydrological cycle will be the most severe.⁷⁰ Watersheds and wetlands, fresh water sources, rivers and rivulets, and oceans and marshes are already experiencing adverse impacts. As global warming supercharges the atmosphere, promoting resilience in western watersheds must become a higher priority in decisions made by public land managers.

IV. CLIMATE CRISIS AND THE NEXT GENERATION

“The crisis might be quiet, but it is urgent. We must do in our own day what Theodore Roosevelt did sixty years ago and Franklin Roosevelt thirty years ago: we must expand the concept of conservation to meet the imperious problems of the new age. We must develop new instruments of foresight and protection and

⁶⁶ http://sciencepolicy.colorado.edu/admin/publication_files/2012.29.pdf

⁶⁷ Agencies have always had difficulty in managing for multiple uses and competing values. In such cases, agencies often “enmesh the debate in an unending array of incomprehensible bureaucratese” without addressing core conflicts in values. <http://members.efn.org/~forestry/chp6.2.htm>

⁶⁸ http://sciencepolicy.colorado.edu/admin/publication_files/2012.03.pdf

⁶⁹ <http://www.thefreelibrary.com/The+Gulf+oil+spill%3A+the+road+not+taken.-a0254013595>

⁷⁰ <http://water.epa.gov/scitech/climatechange/index.cfm>

nurture in order to recover relationships between man and nature and to make sure that the national estate we pass on to our multiplying descendants is green and flourishing.”⁷¹

President John F. Kennedy, 1963

Uranium mining within watersheds that drain directly into the Grand Canyon has a potential to cause cumulative and irreversible harm to land, water, plants, animals, and people. We have reasonable suspicions about these risks, but lack scientifically compelling evidence about cause and effect. As with climate crisis, we must act despite uncertainty and realize that failure to act is a decision as well—with profound consequences. We have an obligation to anticipate, prevent, and minimize harm to the best of our ability, as sentient and moral beings must.

Havasupai people have the most to lose when uranium mining poisons their water. Global changes underway are increasing the frequency and intensity of floods that flash through Havasu Canyon.⁷² These cannot be ignored in relation to the decision to permit Canyon Mine to excavate and expose radioactive ore and to drill into headwaters that supply the sole source of drinking water to Supai villagers. The well sunk beside the mine shaft taps into the same aquifer that feeds Havasu Creek and Grand Canyon’s fragile seeps and springs.⁷³

A Common Cause

The uranium issue and climate crisis share a common cause. The same assumptions that disaffect public involvement in decision-making are at play in this death-defying drive where we dare not take our eyes off the road. Climate change has the potential to cause cumulative and irreversible harm to land, water, plants, animals, and people throughout the West and the rest of the world. We have overwhelming evidence about cause and effect. And yet we are blinded by business-as-usual assumptions about the need to satisfy short-term economic wants. We are consuming our natural endowment to underwrite infinite and unsustainable economic growth.

Climate change and uranium mining are being chauffeured by the same accomplices. Robbing nature’s capital to turn near-term returns is crippling our grandchildren with debts they can never pay. Those who have been driven into a place of complacent comfort are indeed frogs in a pot of hot water being boiled by enormously profitable energy industries. Indigenous elders know what is at stake: we are now fighting for our very survival. Most of us, including public land managers, have yet to grasp the fact that life on Earth, as we know it, is making sharp turns to strange places where humanity has never been.

⁷¹ Foreword to *The Quiet Crisis and the Next Generation* by Secretary of the Interior Stewart L. Udall

⁷² <http://www.world-of-waterfalls.com/american-southwest-havasupai-falls.html>;
<http://apachejunction.azcentral.com/news/arts-culture/51340-arizona-lecture-series-continues-havasupai-canyon-flood-lee-allison>; <http://www.havasupai-nsn.gov/10352010flood.html>

⁷³ The well and mine pierce the base of Red Butte, a sacred place elders call “lungs of Mother Earth.”

Community-Based Impetus to Change

Secretary Salazar's decision to order a 20-year ban on new mining claims within Grand Canyon's watersheds was difficult to achieve and will be even harder to sustain. More difficult choices lie ahead. But this single decision signals a path toward more systemic changes that must occur to survive the climate crisis we face.

Those who are still paying the price for the last uranium boom were the first to say "it's just not worth it." Opposition grew as community leaders considered costs of an unlikely but devastating accident to regional businesses based on tourism. Water managers contemplated worst-case scenarios. Hunters opposed loss of wildlife habitat. Even ranchers saw conflicts with their use of public land for grazing. Some citizens joined in because they felt it was their duty to prevent passing on unacceptable risks to future generations.

These voices caught fire and ignited Secretary Salazar's resolve: "Time and again, we as a nation have shown that our strength comes not just from the power of our industry and technology but also from the wisdom of restraint." In conclusion, he said:

*"Every generation of Americans faces moments when we must choose between the pressures of the now and the protection of the timeless. Today, we know that we can no longer afford to turn our backs on ... iconic landscapes like the Grand Canyon. ... I am therefore at peace with this decision, because it is the right thing to do."*⁷⁴

We have reached the moment of reckoning with climate.⁷⁵ Citizens and agencies everywhere must have the courage to speak simple truths: climate crisis is real and it's wrong for our way of life to threaten all life; it's wrong to consume life's ability to sustain itself; and it's wrong to steal life from our grandchildren. It is our duty to change and to demand change. It is our obligation to oppose leaders and land managers who are hell bent on pawning our future to the carbon nation.⁷⁶

V. PRECAUTIONARY GUIDELINES FOR PRODUCING HEALTHY WESTERN WATERSHEDS

"The case for a land ethic would appear hopeless but for the minority which is in obvious revolt against these 'modern' trends."

Aldo Leopold, 1949⁷⁷

⁷⁴ <http://www.youtube.com/watch?v=T7mgRsUFEmA&feature=youtu.be>

⁷⁵ Atmospheric carbon dioxide reaches 400 parts per million concentration milestone. <http://www.washingtonpost.com/blogs/capital-weather-gang/wp/2013/05/10/atmospheric-carbon-dioxide-concentration-400-parts-per-million/>

⁷⁶ <http://www.carbonationmovie.com/>

⁷⁷ <http://www.fs.fed.us/eco/eco-watch/ew950111.htm>

The optimism of Secretary Salazar’s decision soon faded into cynicism as agencies decided that existing claims could proceed without any new review of decisions that were made more than two decades ago. Even if a federal judge requires a new review, the BLM and Forest Service would most likely permit uranium mining to proceed after another NEPA process. As Professor Wood concludes, “agencies have used their discretion to enshrine a permit system that inevitably sinks the statutory goals....Agency discretion has bred institutional permissiveness.”⁷⁸

We’ve reached an impasse. We need to stop permitting the very pollution that our environmental laws were intended to prevent. A new story needs to be told that overcomes our incessant diversion into dead-end processes. Agency authority, assumptions, and assertions are being called into question on multiple fronts. Public support for protecting the Grand Canyon from uranium mining has gained traction. But we need a catalyst to cause a truly systemic change in how decisions are made on public lands.

It is time to reconsider aspirations that led to passage of the National Environmental Policy Act—such as to:

*“...fulfill the responsibilities of each generation as trustee of the environment for succeeding generations” and “to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans”?*⁷⁹

It is time to define alternative, discretionary approaches in applying these public values to policies and practices that must adapt to new realities of climate change. Current applications of this administration’s policy on climate change accelerate the permitting of energy development on public lands. But they ignore core values such as producing “vital water supplies.”

A common-sense proposal would be to use existing authorities of the executive office to assert the core value of producing healthy western watersheds into the NEPA process. These instructions would wed the law’s purpose with previously discussed precautionary approaches.

For the purpose of producing more resilient western watersheds, the President’s Council on Environmental Quality should issue new guidelines for public land management agencies to follow when evaluating new and recurring projects under the National Environmental Policy Act.

Five guidelines for producing healthy western watersheds:

⁷⁸ <http://law.uoregon.edu/assets/facultydocs/mwood/nreclaiming.pdf>

⁷⁹ National Environmental Policy Act of 1969. <http://ceq.hss.doe.gov/nepa/regs/nepa/nepaeqia.htm>

1. Aridity is the single most important and unifying constraint to sustaining life across western landscapes. Whenever water quantity or quality is at stake, all proposed actions have the potential to cause unacceptable impacts. Citizens and all public agencies have a duty to take anticipatory action to prevent harm to existing sources of water.
2. Healthy watersheds are non-negotiable. Western watersheds are susceptible to accelerating decline due to changing climate. They are currently heavily impacted and in a degrading condition. All actions shall be assumed to cause irreversible and irretrievable impacts to healthy watersheds. Proponents of recurring and new uses of public lands are obligated to demonstrate how their activity will improve watershed conditions, while minimizing risks of impairment for future generations.
3. Decision makers are required to examine a full range of alternatives, including those that prohibit mining, grazing, and other traditional uses of public lands. Whenever possible and to the best of our abilities, preferred alternatives will produce the least harmful impacts. The purpose of the decision-making process is to prevent or eliminate damage to living communities and watersheds on which they depend.
4. Public participation is required in all major decisions on public lands. People who have a greater potential to be directly affected must have a meaningful role in deciding what constitutes a “major” decision. Agency decisions must be thoroughly transparent. Major decisions shall be subject to periodic public review with enough frequency so as to allow participation by new people who could be affected and timely consideration of the best available science.
5. Decisions must consider a full range of direct and indirect expenses to healthy watersheds and the many beneficial services that they provide, including capture and storage of water under conditions of extreme drought and precipitation, maintenance of water quality, enrichment of soil nutrients, and capture of atmospheric carbon. Decisions must estimate cost savings by preventing long-term impacts that would be costly to mitigate or impossible to remediate.

As acknowledged earlier, it will be extremely difficult to get these precautionary guidelines adopted by federal agencies. The good news is that agencies have the discretionary authority to apply them without any need to pass new legislation.

The strategic questions are:

- How to motivate and mobilize citizens to demand healthy and resilient western watersheds?

- How to create community-driven coalitions with diverse regional and national interests who unite in the common cause of demanding that the President improve how land-management agencies review and decide the use of western watersheds?
- How to create a comprehensive campaign strategy that will surely be needed to overcome overwhelming political opposition to a common-sense revision in how NEPA is applied in federal decisions?

CONCLUSION

“The dogmas of the quiet past are inadequate to the stormy present. The occasion is piled high with difficulty and we must rise with the occasion. As our case is new, so we must think anew and act anew. We must disenthrall ourselves, and then we shall save our country.”⁸⁰

Abraham Lincoln, 1862

The National Environmental Policy Act has served us well. In many cases, advocates are able to advance alternatives that are substantially better for the environment than what an agency might have otherwise selected. But the permitting process itself has somehow undermined the explicit purpose of the law “...to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man.”⁸¹

Climate crisis demands fundamental changes in how decisions are made on public lands. Agency responses to new climate change directives have been limited to a lopsided emphasis on energy development. They have recapitulated deeply embedded beliefs and practices that no longer serve public interest.

We need new approaches to planning and making decisions that apply scientific knowledge and traditional wisdom in deciding how to prevent and eliminate damage to the environment. We need to engage the public in preventing western watersheds from becoming energy wastelands. The way to do this is by learning lessons from this precautionary story. We can form coalitions to achieve better policies, but it will take a concerted continuation of recent accomplishments to overcome agency assumptions and discretionary practices.

Recent experience has shown that progress can be made if passionate stakeholders are committed to defining new goals in preventing uranium mining from harming the Grand Canyon. Those values and motivation must be ignited and sustained through an uprising of political will to protect western watersheds from the harmful effects of energy development and climate change.

⁸⁰ Basler, Roy, ed. “Message to Congress,” December 1, 1862. *The Collected Works of Abraham Lincoln*. (Abraham Lincoln Association, 1953).

⁸¹ <http://ceq.hss.doe.gov/nepa/regs/nepa/nepaeqia.htm>