October 11, 2016

Coronado National Forest
ATTN: Celeste Kinsey, Sierra Vista District Ranger
300 W. Congress St. 6th Floor
Tucson, AZ 85701

Submitted electronically: https://cara.ecosystem-management.org/Public//ReadingRoom?Project=50097

Re: Hermosa-Taylor Deposit Drilling Project #50097

Dear Celeste Kinsey,

This letter is in response to the Scoping Notice for the Hermosa-Taylor Deposit Drilling Project Plan of Operations in the Patagonia Mountains, Santa Cruz County, Arizona ("Project") and is being submitted on behalf of Sky Island Alliance (SIA) and the Patagonia Area Resource Alliance (PARA). We appreciate the opportunity to provide comments on this project, and hope that the information and recommendations that we are submitting are helpful as the environmental compliance process for this proposed project progresses.

SIA is a non-profit conservation organization dedicated to the protection and restoration of the rich natural heritage of native species and habitats in the Sky Island region of southeastern Arizona, southwestern New Mexico, and portions of Sonora and Chihuahua in northwestern Mexico. SIA works with volunteers, scientists, land owners, public officials, and government agencies to establish protected areas, restore healthy landscapes, and promote public appreciation of the region's unique biological diversity.

PARA is a non-profit community organization committed to preserving and protecting the Patagonia, Arizona area from destruction by mining. PARA recognizes that the health and economic welfare of our community is tied deeply to the well-being of the Patagonia Mountains and Sonoita Creek watershed. PARA works with community members and organizations to prevent further environmental degradation as well as promote restoration efforts in order to maintain and preserve our landscapes, water and air for future generations.

I. Natural Resources Likely to be Impacted by Hermosa-Taylor Drilling Project

The activities outlined in the scoping notice for this project dated September 7, 2016, and discussed in more detail in the July 27, 2016, Mining Plan of Operations (PoO) submitted to the CNF by Arizona Minerals Inc. (AMI) are likely to have significant direct, indirect, and cumulative impacts on a multitude of natural and cultural resources found in the project area and the surrounding Patagonia Mountains. We provide information on several of these resources, and the impacts they are likely to incur, below.

A. Threatened and Endangered Species; Critical Habitat; USFS Species of Special Concern

The Project Area and vicinity supports species that are federally listed as threatened or endangered under the Endangered Species Act (ESA) and U.S. Forest Service (USFS) special status species. These species include the endangered jaguar, and threatened yellow-billed cuckoo and Mexican spotted owl, as well as a multitude of USFS special status species. This area is also important habitat for the endangered ocelot and several other species with state and/or federal special status, according to the AZGFD state-wide list for special status species,[1] and which were documented in the project area during an April 2013 biological inventory of the Patagonia Mountains. We provide additional information on these species below, as well as the potentially significant impacts this project is likely to have on these species and their habitat.

1. Jaguar: The conservation status of the Patagonia Mountains is critical for the conservation and recovery of the jaguar (*Panthera onca*) in the United States, both as core habitat and as an essential movement corridor. The U.S. Fish and Wildlife Service (USFWS) recognized the value of this habitat for jaguar conservation by including the range within designated Critical Habitat for the species, made effective April 4, 2014.[2] Unit 3 of Jaguar Critical Habitat encompasses the Patagonia Mountains and is an essential piece for cross-border migration and movement. The USFWS considers the Patagonia Mountains to be "occupied at the time of listing," based not only on a 1965 Class I sighting from the area, but also on an unspecified number of photos of a male jaguar consistently taken since 2012 in the Santa Rita Mountains, approximately 20 miles north of the Patagonias.[3]

In addition to the current jaguar records listed in the USFWS critical habitat designation, Brown and Lopez-Gonzales (2001) list at least six jaguars reportedly killed or photographed in the Patagonia Mountains area, dating from 1904 (2 jaguars), 1926 (1, possibly 2 jaguars), 1932-33

[1] Arizona Game and Fish Department (AZGFD) state-wide special status species lists can be downloaded at: http://www.azgfd.com/w_c/edits/hdms_species_lists.shtml
[2] 79 Fed. Reg. 1257177 (Mar. 5, 2014).
[3] Id.

(1 jaguar), and 1948 (1 jaguar), as well as the record mentioned above from 1965.[4] These six jaguar records were all found in Madrean evergreen oak woodland, the same type of vegetation found in the project area.[5]

Because of the wide ranges that jaguars occupy and move through, it is also important to consider other recent jaguar sightings in the mountain ranges surrounding the Patagonia Mountains:

- McCain and Childs (2008) monitored at least two jaguars ("Macho A" and "Macho B") in several mountain ranges in southern Arizona from 2001-2007, including the Atascosa, Tumacacori, and Baboquivari Mountains located 30-60 miles west of the Patagonia Mountains.[6]
- In 2010 and 2011, SIA documented two different jaguars 40 miles south of the Patagonia Mountains in Sonora, Mexico.[7]
- In November 2011, the AZGFD confirmed one jaguar sighting in the Whetstone Mountains approximately 30 miles northeast of the Patagonia Mountains, and documented another sighting in the Santa Rita Mountains, which was reported by a US Border Patrol agent.[8]
- Since 2012, the University of Arizona, with funding from USFWS, has consistently documented one jaguar residing within the Santa Rita Mountains approximately 20 miles north of the Patagonia Mountains.

The estimated minimum home range of a northern jaguar can be up to 525 mi^2 [9], and the Patagonia Mountains are extremely important not only as jaguar habitat but also for habitat connectivity at a regional level. In particular, the Patagonia Mountains cross the international border into Mexico and provide one of the last remaining cross-border migration corridors connecting this habitat to habitat in northern Mexico, where jaguar source populations are known to exist, making this corridor a critical pathway for these large cats to migrate into and out of suitable habitat in the United States.

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[4] Brown, D. and C. Lopez-Gonzalez. 2001. Borderland Jaguars: tigres de la frontera. The University of Utah Press. 170 pp.; p. 6, Table 1.
[5] See Id.
[6] McCain, E., and J. Childs. 2008. Evidence of resident jaguar (*Panthera onca*) in the southwestern United States and the implications for conservation. J. of Mammalogy. 89: 1-10.
[7] Information regarding jaguar sightings documented by is available upon request.
[8] 77 Fed. Reg. at 50226-27.
[9] McCain and Childs, 2008.

The most distant portions of species' distributions are many times the last refuge for their survival.[10] Coupled with the growing impacts of climate change in this region and the multitude of non-climate stressors that impact this species, including illegal poaching in northern Mexico and habitat fragmentation and human disturbance in the U.S.-Mexico border region, the Patagonia Mountains are essential for the conservation and recovery of this species in the United States.

2. Ocelot: The Patagonia Mountains play a similarly important role in the conservation of ocelots (*Leopardus pardalis*) in the United States. The proposed project sits 30 miles or less from where ocelots have been documented in both Arizona and Sonora:

- Since 2007, SIA has systematically documented ocelots 40 miles southeast of the Patagonia Mountains in the Sierra Azul Mountains in Sonora.
- In 2009, SIA documented an ocelot in Cochise County 20-30 miles to the northeast of the Patagonia Mountains. This was the first live ocelot documented in southern Arizona with the use of a remote camera, and first ocelot record in approximately 40 years.
- Since 2011, AZGFD has documented several ocelot sightings in the Huachuca Mountains, approximately 20 miles from the project area.
- Since 2012, the University of Arizona, with funding from USFWS, has consistently documented ocelots in the Huachuca Mountains and the Santa Rita Mountains approximately 20 miles north of the Patagonia Mountains, and has identified several different individuals.

As a result of SIA's studies conducted through the use of remote sensing cameras, ocelots were recorded as close as 40 miles south of the Patagonia Mountains from 2007 throughout 2011. To date we have confirmed the presence of both male and female ocelots, as well as kittens, within a relatively short distance of the United States. With estimated dispersal distances for ocelots between 3 to 20 miles,[11] these studies suggest that ocelots may be traveling northward or currently residing in southern Arizona.

The localities where SIA has documented ocelots in Sonora are typical of habitats found in southern Arizona, namely the Sky Island habitats with Madrean evergreen oak woodlands. The habitat type, elevation and physical characteristics of each place are extremely similar to those

[10] Lopez-Gonzalez, C., Brown, D., and J.P. Gallo Reynoso. 2003. The ocelot *Leopardus pardalis* in north-western Mexico: ecology, distribution and conservation status. *Oryx*. Vol. 37. No.3.
[11] Caso, A. 1994. Home range and habitat use of three Neotropical carnivores in northeast Mexico. Thesis. Monterrey TEC University. 87pp.

of this project area, leading biologists to believe that the project area is also potential ocelot habitat. In addition, one of SIA's photographs shows an ocelot walking on fresh snow in oak woodland, which may indicate the animal's adaptation to more temperate climates, and is possibly a wholly unique find for the species.

Numerous sightings in the area describing small, spotted cats lead biologists to think that this species could be present in the area. This information fits with historical records that document ocelots in Patagonia (1960), the Huachuca Mountains (1964), and the San Pedro River Valley (1980).

It is possible that all ocelot occurrences listed above are connected by existing corridors and are part of an established population. In fact, it is highly probable that ocelots documented in northern Sonora and in Arizona, only 70 miles apart, are connected by migration corridors that include the Patagonia Mountains, potentially representing localities of an established trans-boundary population. This possibility is based on observations of open lands in northern Sonora and southern Arizona, where extensive patches of undeveloped lands, both as private ranches and healthy public lands, contain suitable habitat and prey species to support a healthy cross-border ocelot meta-population.

3. Mexican Spotted Owl: The project area is within designated critical habitat for the Mexican spotted owl (*Strix occidentalis lucida*), which was federally listed as threatened in 1993. In addition, there are known pairs of nesting owls close to this project, and the project is close to a Mexican Spotted Owl Protected Activity Center (PAC), a designation intended to offer the highest level of protection for this species' habitat.[12]

The CNF amended its 1988 Land and Resource Management Plan (LRMP) to include special management standards and guidelines for PACs, including limiting human activities in these areas during breeding season, and avoiding road and trail construction completely unless for "pressing management reasons."[13] These standards and guidelines in place in order to provide adequate protection for this imperiled species.

[12] U.S. Fish and Wildlife Service, *Mexican Spotted Owl Recovery Plan First Revision* (September 5, 2012).
[13] Coronado National Forest (CNF) Land and Resource Management Plan (LRMP) (1988). This document is available at: http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fswdev7_018649.pdf

4. Yellow-billed Cuckoo: This project area is within proposed designated critical habitat for the yellow-billed cuckoo (*Coccyzus americanus*), which was federally listed as threatened in 2014.

5. Northern Mexican Garter Snake: This project area is very near proposed designated critical habitat for the Northern Mexican garter snake (*Thamnophis eques megalops*), which was federally listed as threatened in 2013.

6. USFS Special Status Species: The presence of numerous USFS special status species was confirmed in the project area during an intense biological inventory, or "bioblitz," conducted April 26-28, 2013, in the Patagonia Mountains.[14] This bioblitz was co-organized by SIA and PARA. Participants included 30 expert botanists, entomologists, herpetologists, ornithologists, and mammologists, representing organizations such as The University of Arizona, Arizona State University, the Borderlands Habitat Restoration Initiative, The Nature Conservancy, Southeast Arizona Butterfly Association, Ravens-Way Wild Journeys, the Hummingbird Monitoring Network, and the Arizona-Sonora Desert Museum, as well as a cadre of trained volunteers from Tucson and Patagonia.

The Patagonia bioblitz focused primarily on four areas located at or near proposed mining activities, including the Hermosa-Taylor Drilling project. Over 900 species records were recorded over the course of the bioblitz, resulting in the documentation of 418 different species of plants and animals. These records are available to the public through an online database at www.madrean.org. The complete lists of all plant and animal species recorded within or near this project area during the April 2013 bioblitz are available upon request.

The following list of 19 special species were confirmed to be present in or near the project area during the April 2013 bioblitz in Patagonia. These species appear on the HDMS list of special status species in Santa Cruz County and/or on the AZGFD's statewide list of special status species:

i. AZGFD Santa Cruz County List of Special Status Species

- Zone-tailed hawk (SS)
- Gray hawk (SS, SC)
- Peregrine Falcon (SC, SS)
- Arizona gray squirrel (SS)

[14] The final report on the April 2013 Patagonia bioblitz is available upon request.

- Eastern bluebird (S3)
- Chihuahuan black-headed snake (S1)
- Yaqui black-headed snake (SS)
- Huachuca Mountain milkvetch (SC, SS)
- Sonoran noseburn (SS)

ii. AZGFD Statewide List of Special Status Species

- Canyon spotted whiptail (SC – state-wide list)
- Broad-billed hummingbird (SS – state-wide list)
- Whiskered screech-owl (SS – state-wide list)
- Gould's wild turkey (SS – state-wide list)
- Dusky-capped flycatcher (S3 [State rank = vulnerable]; state-wide list)
- White-nosed coati (SS – state-wide list)
- Arizona woodpecker (S3 [State rank = vulnerable]; state-wide list)
- Rainbow hedgehog cactus (SR [salvage restricted]; state-wide list)
- Cactus apple (SR [salvage restricted]; state-wide list)
- Mesquite (HR [harvest restricted]; state-wide list)

A bioblitz discovery of special note was the discovery of the willowleaf oak (*Quercus viminea*), a species that is well known in the Sierra Madre of Mexico, but had only been rumored to exist in the United States. A single specimen was collected in the Patagonias in 1923, with subsequent attempts at finding the tree proving unsuccessful. Remarkably, this species was discovered in two separate localities during the April 2013 bioblitz, including near this project area, and was later verified by oak expert Richard Spellenberg at New Mexico State University. An article describing this discovery was published in the journal *Phytoneuron*, and is available here: http://www.phytoneuron.net/2013Phytoneuron/48PhytoN-Quercusviminea.pdf.

Recommendation: Assess the direct, indirect, and cumulative impacts to all the species listed above, as well as all other plant and animal species that may be impacted by this project.

For example, impacts to species that are likely to occur because of the greatly increased human activity, road construction, vegetation removal, vehicle traffic, noise, lights, and other infrastructure and activities associated with this Project that will occur in this remote area 24 hours a day, seven days a week, include, but are not limited to:

- Habitat fragmentation occurring from nighttime lighting, human activities, and road construction, especially the cross-country road and drill pad construction that has been proposed;

- Habitat destruction from vegetation clearing for road construction, including cross-country road construction, as well as for drilling pad construction and other human activities taking place off established roads;
- Direct mortality (roadkill) from greatly increased vehicle traffic and use of heavy equipment both on and off-road;
- Disturbance of species behavior from noise and constant nighttime lighting;
- Spread of invasive species from greatly increased road construction and traffic, especially cross-country vehicle traffic; and
- Reduction of available water resources and other important riparian areas from likely impacts to groundwater.

This Project may have significant impacts on many species listed above. These activities will fragment important habitat –in some cases, federally designated critical habitat – resulting from the improvement and greatly increased use of rural, dirt roads in an otherwise remote area, including the proposed construction of unauthorized cross-country roads and trails. The increase in traffic on these roads and trails, will primarily be heavy construction trucks, some of which will travel these roads at least twice daily, has the potential to do significant harm to many species and their habitat.

Mining activities are expressly identified in the jaguar critical habitat designation as having the potential to adversely modify critical habitat for the species, especially those mining projects with the potential to sever connectivity to Mexico.[15] This project is located within 5-10 miles of the US-Mexico border and has significant potential to impact this connectivity.

<u>Recommendation:</u> A complete inventory of all perennial plant species within the development envelope should be conducted before vegetation removal, and reclamation and restoration of the disturbed areas should be designed to re-establish the full suite of species and number of individual plants removed. Site-specific seed mixes should be used, and should be comprised of locally collected seed. Seed mixes should include grasses, shrubs, vines, and annual species. The estimated 250 trees that would be removes should be replaced in kind by container plants grown from locally collected seeds, or if appropriate, cuttings. Where possible plants should be salvaged and maintained (agaves), and re-planted. Plants should be maintained and monitored for success. Remedial actions should be taken to replace trees that do not survive as well as removal/treatment of invasive species.

[15] 78 Fed. Reg. at 39243.

B. Wildlife Movement Corridors

This project has the potential to impact wildlife movement for numerous species, including the threatened, endangered, and USFS sensitive species that are listed above. The Patagonia Mountains are a critical wildlife corridor for species migrating north or south within the region, and in fact this project falls within the designated Patagonia-Santa Rita Linkage Wildlife Corridor as identified by *Arizona's Wildlife Linkages Assessment*, prepared by the Arizona Wildlife Linkages Working Group, which consists of the Arizona Department of Transportation, AZGFD, Federal Highway Administration, USFS, Bureau of Land Management, USFWS, Northern Arizona University, SIA, and The Wildlands Project.[16] This range is especially important for wildlife movement because it crosses the international border, creating a bridge for species movement, and is currently one of the last remaining places in the Sky Island region where cross-border migration can occur, due in large part to border security activities being conducted by DHS.

Recommendation: Assess the direct, indirect, and cumulative impacts to all the wildlife movement corridors that may be impacted by this project. This project has the potential to compromise this regionally important corridor – considered critical to the conservation of the jaguar in the United States by the USFWS and likely equally important for ocelot conservation – due to its round-the-clock intensive drilling operations, greatly increased vehicle traffic, including extensive cross-country travel on unauthorized roads and trails, and all other proposed activities occurring in this otherwise remote area.

C. Water Resources, Watersheds and Wetlands

1. Water Resources: According to the AMI Mining PoO, AMI estimates it will use 20,000 gallons of water per week for five months, or approximately 400,000 gallons of groundwater in this area. Although the water will be pumped and piped from a private well, the impacts of this groundwater use should be considered, especially in relation to Harshaw Creek.

2. Watersheds: The 21,000 acre Harshaw Creek Watershed, within which this Project is located, sits directly above the Town of Patagonia and is an important component of the town's drinking water supply. In fact, the Town of Patagonia received an official municipal watershed designation for Harshaw Creek from CNF. [17] Harshaw Creek was listed on the State of Arizona's 303[d] List of Impaired Waters for violations of water quality standards in 1996 and 1998

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[16] Arizona Wildlife Linkages Working Group. 2006. *Arizona Wildlife Linkages Assessment.* p. 107. Available online at: http://www.azdot.gov/docs/planning/arizona_wildlife_linkages_assessment.pdf?sfvrsn=7

[17] *See* Town of Patagonia Planning and Zoning Committee, *Special Public Meeting Minutes* (June 17, 2013). Available online at: http://townofpatagonia.com/wp-content/uploads/2011/07/MINUTES-PZ-SPCL-MTG-6-17-13.pdf

because of high concentrations of copper and low pH. The Arizona Department of Environmental Quality indicates that mining activity in the watershed is the main cause of this impairment.

The heavy use of dirt roads proposed for this project, including the construction of 2 "temporary access roads" totaling 0.62 miles is likely to impact the Harshaw Creek watershed, including the Municipal Watershed for the Town of Patagonia. All streams are pathways for the movement of water, nutrients, and sediment throughout the watershed, including intermittent and ephemeral streams, which comprise a large portion of the stream network within watersheds. These features have greater relative moisture than the surrounding area, often stored in ground, and when they erode and downcut, gullies can form. This leads to soil loss and the surrounding water tables getting deeper.

Road construction and increased use of dirt roads is known to exacerbate erosion and increase sedimentation into waterways and drainages, which can greatly impact the health of the watershed. This is because exposed soil surfaces such as dirt roads and trails concentrate runoff, resulting in higher erosion rates and soil loss.[18] The amount of motorized use on a road is related to the erosion and sediment yield, with the greatest amount of erosion found on the most intensely used roads.[19] Areas adjacent to roads are also prone to instability from loss of vegetation, concentrated runoff from compacted road surfaces, and disturbance from use. Wind can also mobilize soil off the bare surfaces of roads and adjacent areas. These and other impacts caused by the construction and increased use of dirt roads are well known to pose a significant threat to watershed health.

3. Springs and Wetlands: Through spring surveys SIA has identified a diversity of springs types, and plants and animals supported by springs ecosystems in the Cienega Creek Hydrogeologic Area.[20] Springs are places where groundwater is exposed, and often flowing from the Earth's surface. These waters are derived from underground aquifers or water tables,

[18] Reid, Leslie M. and Thomas Dunne. 1984. *Sediment Production from Forest Road Surfaces.* Water Resources Research, 20 (11), 1753-1761.
[19] MacDonald, Lee H. and John D. Stednick. 2003. *Forests and Water: A State-of-the-Art Review for Colorado*. Colorado State University, CWRRI Completion Report No. 196; Zhi-Hua, Shi, Chen Li-Ding, Yang Chang-Chun, Yan Feng-Ling, and Peng Ye-Xuan. 2009. *Soil loss and runoff processes on unpaved road from rainfall simulation tests in the Three Gorges Area, China*. Acta Ecologica Sinica, 29(12), 6785-6792; Håkansson, Inge, Ward B. Voorhees, and Hugh Riley. 1988. *Vehicle and Wheel Factors Influencing Soil Compaction and Crop Response in Different Traffic Regimes*. Soil & Tillage Research, 11.
[20] Detailed information regarding springs assessments conducted in the area by SIA is available upon request.

sometimes traveling long distances over long periods of time before they reach the surface.[21] It is known that springs in arid ecosystems occupy a small fraction of the landscape and yet support disproportionately high levels of productivity, endemism and biodiversity. Springs function as "keystone ecosystems," having enormous effects on surrounding landscapes, biota, and economies[22] and play a crucial role in providing refugia for migratory birds, reptiles and amphibians.[23]

The spring wetlands that are within or near the project area are likely to experience impacts from the greatly increased traffic and human activities associated with this Project. Human activities have greatly reduced the ecological integrity of many wetland, riparian and springs ecosystems through competing exploitative uses, including mining, groundwater pumping, diversions, fuel wood harvest, recreation, livestock grazing, and wildlife management. Land-use change may alter the processes for recharge to an aquifer. Reduction of the water-table elevation or well-drilling may allow inflow of lower-quality groundwater into an aquifer. In addition, pollution of percolating surface water or groundwater may reduce the quality of an aquifer's water. Extraction of groundwater from the aquifer may partially or wholly dewater individual springs or entire complexes of springs resulting in fragmentation of habitat, increasing isolation of springs ecosystems, and interruption of biogeographic processes at microsite-regional spatial scales in perpetuity.[24]

Recommendation: Assess the direct, indirect, and cumulative impacts to all water resources, watersheds and spring wetlands that may be impacted by this project.

III. Transportation and Traffic

If approved as proposed, this Project's access plan will necessarily be encompassed by the Sierra Vista District's ongoing travel management planning (TMP) process. We have been involved in the CNF's TMP process from the beginning and have worked with the CNF to decommission and close "non-system roads," which are not built to USFS standards and can

[21] Spring Stewardship Institute website, *What are Springs?,* http://www.springstewardship.org/what.html (accessed August 15, 2013).
[22] Stevens, Lawrence E., and Vicky J. Meretsky. 2008. Aridland Springs in North America: Ecology and Conservation. University of Arizona Press. http://books.google.com/books?id=9lCM_c35aJAC&pgis=1.
[23] Sada et al. 2001. Riparian Area Management: a guide to managing, restoring, and conserving springs in the Western United States. Technical Reference 1737-17 Bureau of Land Management, Denver, Colorado. BLM/St/St-01/001+1737. 70pp.
[24] Spring Stewardship Institute website, *Threats to Springs Ecosystems,* http://www.springstewardship.org/threats.html (accessed August 15, 2013).

have significant impacts on forest resources, particularly water resources and watersheds. We strenuously oppose the improvement of unauthorized, non-system roads, which we discuss in great detail in our comments on the Sierra Vista District's TMP Proposed Action, submitted jointly with the Center for Biological Diversity and other organizations in June 2012.[25] We also strenuously oppose the creation of new "non-system" roads, as should the CNF and the USFS considering the Travel Management Rule requires that each Forest designate roads, trails, and areas that are open to motor vehicle use and prohibit the use of motor vehicles on routes and in areas that are not designated for such use.[26]

Recommendation: Assess the direct, indirect, and cumulative impacts that are likely to result from the Road Use Plan, especially from the proposed creation of two new temporary access roads.

IV. Air Quality

Air quality in this area is already considered by the Environmental Protection Agency (EPA) as a "nonattainment area" under the Clean Water Act for violations of the National Ambient Air Quality Standard for particulate matter.[27] This project is likely to have significant impacts on air quality, which is already compromised in this area. For example, the extensive use of otherwise rural, dirt roads that otherwise receive little to no regular traffic will likely have significant impacts on air quality. The type of intensive travel by extremely large and heavy machinery and construction vehicles across dirt roads will likely increase fugitive dust and particulate matter pollution as well as other air pollution caused by motor vehicle emissions.

Recommendation: Assess the direct, indirect, and cumulative impacts to air quality that are likely to result from this project.

V. Cumulative Impacts

Below is a non-inclusive list of other past, present and reasonably foreseeable future actions that raise additional uncertainty about the significance of the cumulative effects resulting from this Project:

- The CNF TMP process, which is ongoing and may result in an expansion of the designated road system in the Sierra Vista Ranger District;

[25] Ltr. From Center for Biological Diversity et al. to Peggy Wilson, Sierra Vista Ranger district, CNF, *Comments on the Proposed Action for the Sierra Vista Ranger District Travel Management Project, CNF, AZ* (June 1, 2012).
[26] 70 Fed. Reg. 68264-68291 (Nov. 9, 2005).
[27] 76 Fed. Reg. 1532-1535 (January 11, 2011).

- The CNF LRMP revision, which is ongoing and may result in additional impacts to resources in this area related to revised management strategies;
- Continued ATV use and unauthorized road creation in the affected watershed, as well as the reasonably foreseeable dispersal of motorized recreation activities that currently occur in the project area into neighboring watersheds; and
- Continued population growth and associated residential need for groundwater in the Patagonia area, which will affect surface water and ongoing impacts from old mine sites.

Considering the close proximity of at least two proposals for mineral exploration activities in this small but biologically important mountain range; the ongoing and intensive border security activities conducted in this area by DHS and the lack of environmental compliance and oversight by that agency; the existing and growing impacts of climate change in this region; and the list of other past, present and reasonably foreseeable future actions that will continue to impact this area, cumulative impacts are not only uncertain, they are in fact likely, and must be analyzed by the CNF.

Of utmost concern regarding cumulative impacts are the potential impacts to the Patagonia-Santa Rita Linkage Wildlife Corridor as designated by the AZGFD.[28] As discussed above, this wildlife corridor is especially important because it provides connectivity across the international border, which has already been severely compromised by DHS activities and the lack of environmental compliance and oversight by that agency. Considering the many other mineral exploration projects proposed for this area within 5-10 miles of the border, coupled with ongoing and intensive border security activities, and in light of the growing impacts of climate change and the increased need for wildlife to migrate in order to adapt to those changes, this project is extremely likely to have significant cumulative impacts on this critical cross-border corridor.

Other potential cumulative effects include diminished air quality from vehicle emissions, road construction, and increased use of rural dirt roads from other mining proposals that will all require travel to and from nearby project sites several times daily by heavy construction vehicles. This greatly increased vehicle traffic will be taking place in an area that is already considered a "nonattainment area" by the EPA due to fugitive dust and particulate matter pollution.[29]

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[28] Arizona Wildlife Linkages Working Group. 2006. *Arizona Wildlife Linkages Assessment.* p. 107. Available online at: http://www.azdot.gov/docs/planning/arizona_wildlife_linkages_assessment.pdf?sfvrsn=7

[29] 76 Fed. Reg. 1532-1535.

There will also likely be significant cumulative impacts on water quality and area watersheds and wetlands, including the Town of Patagonia's municipal watershed and the spring wetlands that are within or near this project area. Because of the road construction and heavy use of rural dirt roads associated with other additional mining proposals, as well as the activities associated with the other past, present, and reasonably foreseeable future actions listed above, there is likely to be significantly exacerbated erosion and increased sedimentation that will greatly impact the affected watersheds, including the Patagonia's municipal watershed. In addition, these activities are also likely to have significant cumulative impacts on the spring wetlands in the area, which are also likely to be further impacted from any associated groundwater pumping in the area.

Thank you for considering our comments. Please continue to include SIA and PARA as interested parties on this matter and direct all future public notices and documents to SIA and PARA at our respective addresses below.

Sincerely,

Louise Misztal
Executive Director
Sky Island Alliance
PO Box 41165
Tucson, Arizona 85717

Wendy Russell
Coordinator
Patagonia Area Resource Alliance
P.O. Box 1044
Patagonia, Arizona 85624


SKY
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ALLIANCE
Patagonia Area
Resource Alliance