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Comments: My name is Richard Espe and I am a full time resident of Rio Rico. I am opposed to the South32 Hermosa Mining project. Further impact studies must be done before they are allowed to proceed any further. I ask that the possible impacts listed below, be included in the NEPA EIS study process.

#### Water Resources

To allow for drilling at depths that have not even been established, but are deeper than any mining before, there will be pumping out of ancient water which will lower the natural water tables.

What effect will this draining of the water table have on all lands around the project?

Will natural springs disappear that the native flora and fauna depend upon?

What monitoring will be in place to measure any changes in current conditions?

How often should this monitoring be in place?

Third party monitoring must be included to be compared to any provided by South32 Hermosa Mining Project.

What will the planned response be if changes are found?

Will water tables be eroded that current regional vegetation depend on? This could potentially change the entire ecosystem we now experience!

Will the overflow of this drained water into Alum and Harshaw Creeks cause flooding issues, change water quality and add potential distress to flora and fauna downstream?

What effect will the effluent that the mining project produces have on wells?

Will this effluent change the current aquifers that the area of Patagonia now depend on for their water supply?

Who will monitor any potential hazards created and how will they be remedied if hazards are found in the future and, who will pay for this? Please study in detail water resource points listed above and how they may be affected by the South32 Hermosa Project.

#### Effect on Wildlife

The mine brings into this pristine wilderness various levels of intrusion from its normal 24/7 operations. Some, but not all of these intrusions include the following: clearing of land, running of heavy equipment, traffic on all roads being utilized, noise of drilling and exploration, and light pollution from 24/7 hours of operations.

#### Loss or change in habitat

How will the loss or change of habitat affect the movements of mammals, birds, reptiles and insects? Will migratory routes be changed to such an effect as to eliminate established patterns all together? Will this change the north/south corridor for the thousands of birds that use the Santa Cruz corridor on their journey from their winter grounds in Mexico/Central America to their breeding grounds in Arizona and beyond?

What will happen to the endangered species of yellow-billed cuckoos and jaguars, as well as major populations of hummingbirds, lizards, bees and butterflies?

#### Invasive species

Will the disruption caused by destruction of native habitat encourage the invasive non-native species of plants that will drive out native species that all wildlife depend upon?

These invasive species often result in greater fire hazards as they burn hotter than native plants, potentially changing habitat permanently if wildfires were to break out.

#### Increase in traffic

There will be a massive increase of traffic, particularly large vehicles on the normally unused roadways in the mountains which will potentially create increased numbers roadkill to wildlife that are trying to exist in this changed environment.

What kind of numbers would you expect and how will this adversely affect future generations of certain wildlife in the area?

#### Light pollution

The effect of operations 24/7 and the massive use of lighting all areas involved will disrupt birds in their nightly migration causing confusion and possible loss of direction and disruption in their patterns. This lighting will also cause nocturnal mammals and insects confusion, stress and avoidance of areas they now depend on for food and habitat sources.

Please study in detail the points listed above and how wildlife may be affected by the Hermosa Project, in reference to a University of Arizona study from 2021 ("The Nature-Based Restorative Economy in Santa Cruz County, Arizona" <https://economics.arizona.edu/nature-based-restorative-economy-santa-cruz-county-arizona>).

Recreational activities in the area includes birding, gravel biking, horseback riding, hiking, and water activities. The Hermosa Project will foreseeably impact current patterns of recreation and will likely lead to loss of recreation areas, and as such, loss of existing and future nature based economy income.

#### Birding

Birding will be affected regionally due to mining operations which affect loss of habitat including water sources, noise pollution and light pollution. Migratory patterns will be foreseeably changed and possibly eliminated.

#### Gravel biking and horseback riding

Mine activities will continue to sever connectivity of existing roads and trails on Forest Service lands and further limit recreational access, especially for gravel bikers who use Harshaw road to access the San Rafael Valley, and horseback riders who use a number of trails in and around Flux Canyon. Potential for accidents will also be a major cause for concern.

#### Hiking

Mine operations will foreseeably affect nearby trail user experience, including the famous Arizona Trail.

#### Water activities

Water quality in Patagonia Lake may be harmed by release of treated water into the Sonoita Creek watershed.

Effects on recreation will foreseeably include short-term impacts during construction and operation, as well as long-term impacts during the reclamation and post-closure phases. Please study in detail current regional recreation patterns and how they may be affected by the South32 Hermosa Project.

Also affected will be the reasons current in-state and out-of-state visitors come to this area of Arizona to experience all of the above mentioned activities. These may be hard to measure but are nonetheless of major importance to participants. Examples include: the quiet, beautiful scenery, lack of pollution, wildlife viewing and safety. Mining activity could easily strip this area of these advantages and could cause a severe drop in our growing nature-based economy.

The last point that must be considered and studied is the cumulative aspect of allowing other mining companies to also prospect and possibly mine in the same area. Other mining companies are already seeking this. Therefore, not only do all of the above points need to be studied concerning the Hermosa Project but also, if allowed, what will be the cumulative effects of more mining operations have on the environment? These would include much greater destruction of pristine land, draining and contamination of all precious water supplies, increased traffic, noise, light, etc. Would effects be exponential? You must keep these cumulative effects in mind when preparing studies on all aspects of the Hermosa Project.

In conclusion, Santa Cruz County is a unique, pristine and beautiful part of this world. It has been recognized as an area to be preserved for its diversity in bird life, insects and reptiles. It lives based upon a fragile balance of a culmination of unique ecosystems that contribute to its diversity. Any disruption, and I repeat, ANY DISRUPTION to this delicate balance could forever take it all away. I ask that you proceed with detailed impact studies for all points listed above and others that may be affected by the South32 Hermosa Project. These issues are too important to be overlooked and/or simply disregarded altogether!

Thank you,  
Richard Espe