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Submitted by: Defend Them All Foundation

Addressed to: Señores/as Jueces de la Corte Constitucional del Ecuador

Amicus Curiae in Support of Allowing Prefect Pérez's Popular Consult

Lindsey Zehel, on behalf of the Defend Them All Foundation (EIN 82-5196560), located at 25 NW 23rd Place, Suite 6-310, Portland, Oregon, United States, presents this amicus brief to the Honorable Constitutional Court of Ecuador in the case 0009-19-CP for the purpose of providing information on the impacts that the mining practices at issue would have on the biodiversity of the páramos of Azuay.

I. Purpose and Summary of this Submission

On July 30th, 2019, the Prefect of Azuay, Yaku Pérez, presented the following question to the Constitutional Court to be asked of the people of Azuay:

Do you agree with prohibiting, without exception, metal mining in all of its phases, that are: prospection, exploration, and exploitation, near water sources, páramos, wetlands, forests, and in all water recharge and regulation zones in the province of Azuay?¹

The mining practices at issue threaten to irreversibly damage the biodiversity of the páramos in Azuay. INV Metals' Loma Larga Mining Project, alone, will jeopardize the well-being of 700 species—fourteen of which are endangered or critically endangered.² Specifically, Loma Larga will disrupt the habitat of an endangered hummingbird endemic to Ecuador,³ threaten critical habitat for several critically endangered frogs,⁴ and

¹ This question, as submitted in Spanish, is the following: ¿Está usted de acuerdo con la prohibición, sin excepción, de la minería metálica en todos sus fases, esto es: prospección, exploración, y explotación, en fuentes de agua, páramos, humedales, bosques, y en todas las zonas de recarga y regulación hídrica en la provincia del Azuay?

² INV Metals, Inc., *Feasibility Study Technical Report: Loma Larga Project*, 308-315 (2019). This Study was published before the Canton of Girón held a popular consult in March 2019 prohibiting these mining practices in that canton. As a result of this popular consult, INV plans to modify their Project Area so as to fall entirely outside of Girón. As such, INV's Feasibility Study is based on an outdated Project Area. We use it herein only to exemplify the impacts that such a project would have on the páramo ecosystem.

³ *Id.* at 309.

⁴ *Id.* at 308.

compromise crucial foraging and nesting grounds of the critically endangered Andean Condor.⁵

This Court should allow the popular consult for two reasons. First, Ecuador’s Constitution declares that the conservation of biodiversity is of public interest.⁶ Because the species of Azuayan páramos play a crucial—and economically considerable—role in maintaining Azuay’s water quality,⁷ the people of Azuay have the greatest interest in preserving in Azuay’s biodiversity. They stand to bear the brunt of any long-term consequences of mining. For this reason, the people of Azuay should have the opportunity to decide whether Azuay’s biodiversity is worth risking for the questionable promise of economic development.

Second, the Constitution of Ecuador grants Nature the right to preserve its biodiversity,⁸ and the mining practices at issue will most likely infringe this right.⁹ As this Court has said, rights of nature are transversal, affecting all other constitutional rights.¹⁰ Just as the Constitution allows any community to demand the recognition of the rights of nature through legal processes,¹¹ this Court should allow the Azuayan community to protect rights of nature by popular consult.

The following outlines the risks posed by the mining practices at issue. Then, using the two reasons noted above, it recommends that this Court should let the people of Azuay decide whether to gamble with Azuay’s biodiversity.

II. Background on Defend Them All Foundation and our Interest in this Case

Defend Them All Foundation is a nonprofit organization dedicated to improving the legal protections of animals and the environment. In furtherance of this aim, Defend Them All Foundation works directly with advocates in target localities, including Ecuador. The organization is independent and non-partisan. It receives no money, either directly or indirectly, from any government. It is headquartered in Portland, Oregon, United States.

Defend Them All Foundation has been cataloguing and evaluating the impacts of the INV Metals’ proposed Loma Larga Mining Project since 2015. For this reason, much of this amicus curie will be focused on facts and arguments about that Project.

⁵ *Id.* at 309; Interview with Ernesto Arbeláez, Biologist, Executive Director of Bioparque Amaru Cuenca, 7/8/19.

⁶ Const. of Ecuador, Art. 14, 400.

⁷ Interview with Ernesto Arbeláez, Biologist, Executive Director of Bioparque Amaru Cuenca, 7/8/19.

⁸ Const. of Ecuador, Art. 71 (“La naturaleza o Pacha Mama, donde se reproduce y realiza la vida, tiene derecho a que se respete integralmente su existencia y el mantenimiento y regeneración de sus ciclos vitales, estructura, funciones y procesos evolutivos”).

⁹ See *Feasibility Study* at 308 (INV Metals recognizes the potential that some “Project impacts on special-status species...cannot be avoided, or sufficiently minimized”).

¹⁰ Corte Constitucional del Ecuador. Sentencia No. 166-15-SEP-CC. Caso No. 0507-12-EP. Registro Oficial, Suplemento, No. 575: 28/08/2015.

¹¹ Const. of Ecuador, Art. 71 (“Toda persona, comunidad, pueblo o nacionalidad podrá exigir a la autoridad pública el cumplimiento de los derechos de la naturaleza. Para aplicar e interpretar estos derechos se observarán los principios establecidos en la Constitución, en lo que proceda”).

III. The Mining Practices at Issue Threaten Azuay's Biodiversity

The mining practices at issue in this popular consult pose substantial threats to páramo biodiversity. The páramo is a unique and sensitive ecosystem, occurring in high tropical mountains between the tree line and snow line. Páramos play an essential role in water regulation of wide-ranging regions through interconnected water balancing components.¹² The complex hydrology of the páramos is not well-understood, but what is known is that they provide a home for many species and a vital source of water to all living beings downstream.¹³ The mining practices at issue pose both known and unknown risks to this unique ecosystem.

The mining practices at issue are known to risk habitat destruction, the polluting of the sensitive páramo hydrological system, and the loss of nesting grounds. The Loma Larga Project,¹⁴ alone, will impact the livelihood, habitat, or nesting grounds of around 700 species.¹⁵ According to the Ecuadorian or IUCN Red Lists, 14 of these are endangered or critically endangered,¹⁶ 22 are vulnerable,¹⁷ and six are near-threatened.¹⁸ At least three endangered species have been found in the mining tailings impact area,¹⁹ and at least two endangered species may have critical habitat in the Project Area.²⁰ Fifteen species are endemic to Ecuador, but little is known about ten of these native Ecuadorians.²¹ And, these are just the species that would be impacted by Loma Larga, alone.

According to one independent analysis of Loma Larga's impact, the risk for liberation of heavy metals and soil acidization is unacceptably high—even considering the Project's stated mitigation strategies.²² Liberated arsenic and other heavy metals are practically guaranteed to pollute both surface and subsurface waters, and the complicated hydrology of the páramos means that this pollution will spread unpredictably.²³ Ecosystems in general, and the páramos in particular, fundamentally require water systems free from such pollution.

¹² *Feasibility Study* at 302; Valladares, C. & Boelens, R., *Mining for Mother Earth: Governmentalities, sacred waters and nature's rights in Ecuador*, 100 *Geoforum* 68, 70 (2019).

¹³ La Granja: *Revista de Ciencias de la Vida*, 28(2) 2018:52-66.

¹⁴ The Loma Larga Project is located in the province of Azuay, Ecuador, in the western mountain range of the Andes. The proposed underground gold mine is located approximately 30 km southwest of Cuenca. The Project consists of three mining concessions held by a Canadian corporation, INV Metals, Inc. covering a total area of nearly 8,000 ha in the regions of Cuenca, Girón, and San Fernando. Locally known as Quimsacocha (or Kimsakocha), the Project is currently in the advanced exploration and financing stage. It is one of five mining projects declared by the Ecuadorian government to be a National Strategic Project.

¹⁵ *Feasibility Study* at 308-314.

¹⁶ *Id.* at 308-315.

¹⁷ *Id.*

¹⁸ *Id.*

¹⁹ *Id.* at 312.

²⁰ *Feasibility Study* at 308, 312.

²¹ *Id.* at 308–312.

²² Kuipers, J., *Expert Report on the Loma Larga and Rio Blanco Projects in the Province of Azuay, Ecuador*, at 23 (2016), online (pdf): *MiningWatch Canada* https://miningwatch.ca/sites/default/files/informe_pericial_kuipers_loma_larga_rio_blanco.pdf.

²³ Kuipers at 3.

For example, consider the impacts that the Loma Larga Project is projected to have on three particular animals. First, four species of endangered or critically endangered frogs have critical habitat in or near the Project Area.²⁴ Frogs are notoriously sensitive to water quality because their porous skin makes them more susceptible to toxins in the environment; in past studies, heavy metals from mining tailings have been found to kill or deform frog embryos.²⁵ The Feasibility Study stated that these impacts could be mitigated by “avoiding [their] habitats whenever possible,”²⁶ but this is demonstrably impossible. Even if INV directly avoided this frog’s reproductive habitats, heavy metal pollution released elsewhere—flowing through the complex and interconnected páramo hydrology—would eventually reach, and devastate, this frog’s livelihood.

Second, Loma Larga will also impact the endangered Violet-throated Metaltail, a type of hummingbird found only in Ecuador. In addition to their important role as pollinators, hummingbirds appear in Quechua legends and beliefs and are represented in contemporary art and artisan goods throughout Azuay. Even after ten years of research by biologists at the University of Azuay, INV is still uncertain about whether the Project Area will destroy this hummingbird’s nesting grounds.²⁷

Third, Loma Larga will most likely have the greatest impact on the critically endangered Andean Condor, a symbol of national pride in Ecuador. Andean Condors are notorious for reproducing only sporadically²⁸ and for needing many months and large undisturbed areas for nesting and reproduction.²⁹ Yet, INV does not know whether the Project Area includes the Condor’s nesting grounds.³⁰ Further, Condors face the additional threat posed by biomagnification of heavy metals—a process whereby even trace amounts of toxins absorbed by organisms low on the food chain become magnified to dangerous levels when repeatedly consumed by apex predators.³¹ Lastly, Loma Larga itself sits in crucial foraging grounds for the Andean Condor. Ernesto Arbeláez, a wildlife biologist and Executive Director of Bioparque Amaru Cuenca, has been tracking Andean Condors for several years. His studies show just how much Condors rely on the páramos in and around the Loma Larga Project Area as a place to forage for food.³² Thus, even if the Loma Larga Project was only as impactful as the best projections predict, it will still unjustifiably jeopardize the livelihood of the critically endangered Andean Condor.

²⁴ *Feasibility Study* at 308. Interview with Ernesto Arbeláez, Biologist, Executive Director of Bioparque Amaru Cuenca, 7/8/19.

²⁵ *The Need for Water Quality Criteria for Frogs*, Environmental Health Perspective, Vol. 103 No. 4, 352-357 (1995).

²⁶ *Feasibility Study* at 308.

²⁷ *Id.* at 309.

²⁸ Gailey, J., Bolwig, N., *Observations on the Behavior of the Andean Condor (Vultur gryphus)*, *The Condor*, 75/1: 60-68 (1973); Lambertucci, S., Mastrantuoni, O., *Breeding behavior of a pair of free-living Andean Condors*. *Journal of Field Ornithology*, 79/2: 147-151 (2008); Whitston, M., Whitston, P., *Breeding Behavior of the Andean Condor (Vultur gryphus)*, *The Condor*, 71/1: 73-75 (1969).

²⁹ *Id.*

³⁰ *Id.*

³¹ Mann, Reiner et al., *Metals and Metalloids in Terrestrial Systems: Bioaccumulation, Biomagnification and Subsequent Adverse Effects*, *Ecological Impacts of Toxic Chemicals*, 43–62 (2011).

³² Interview with Ernesto Arbeláez, Biologist, Executive Director of Bioparque Amaru Cuenca, 7/8/19.

Finally, in addition to all the known risks to biodiversity, the mining practices at issue also pose serious unknown risks. These unknowns include the extent to which (1) mining noise will impact surrounding species, as noise pollution from mining activities can cause “substantial changes in foraging and anti-predator behavior, reproductive success, density and community structure”;³³ (2) wildlife could interact with toxic tailings ponds, and (3) new infrastructure needed to operate Loma Large will cause range-fragmentation. Range-fragmentation occurs when species’ entire habitat is compromised due to its inability to migrate across certain forms of human infrastructure, which can be a major driver of species extinction.³⁴ Yet, INV Metals plans to do just that—build a whole series of roads and infrastructure across the páramos to service its mining project.³⁵

Further, these mining practices threaten to impact species that are not yet known to researchers. According to the National Institute of Biodiversity, only 60% of the biodiversity in the province of Azuay is officially catalogued and classified.³⁶ Just last year, a new species of frog, the Blood Rain Frog, was found in the paramo ecosystem outside Cajas National Park.³⁷ It was soon classified as endangered after it was discovered that it only inhabits an area less than 1km². Biologists predict that at least 200 more species of frogs, alone, are still undiscovered in Ecuador.³⁸

To summarize, the mining practices at issue could jeopardize a whole host of species in ways that even the best science does not yet understand. At the very least, more scientific studies are needed to fully assess these risks. Yet, Ecuador need not rush to develop its mineral resources. Realizing this fact is part of the genius of allowing this popular consult—if later science shows that metal mining can be done with fewer risks to biodiversity, the public can be consulted on the issue again. The underground metals are not going anywhere, but Ecuador’s biodiversity will suffer if these metals are unearthed before a more careful consideration of the risks.

IV. The Value of Azuay’s Biodiversity Should be Decided by Azuayans

In numerous articles, Ecuador’s Constitution declares that the conservation of Ecuador’s biodiversity is of public interest.³⁹ By requesting this popular consult, the people of Azuay ask only for the opportunity to demonstrate just how interested they are in Azuay’s biodiversity. These mining practices will threaten it; this Court should allow the popular consult because Azuay stands to lose the most if the worst projections are realized.

Azuay’s biodiversity is worth protecting not just for its own sake: páramo species provide a crucial and economically substantial environmental service for Azuayans—

³³ Barber, Jesse et al., *The costs of chronic noise exposure for terrestrial organisms*, Trends in Ecology and Evolution, Vol. 29 No. 3 (2009).

³⁴ *Id.*

³⁵ *Feasibility Study* at 51–52, 268–281.

³⁶ *Azuay, 60 por ciento de riqueza natural por descubrir*, El Tiempo, 20/5/2018, <https://www.eltiempo.com.ec/noticias/cuenca/2/azuay-riqueza-natural>.

³⁷ Sánchez-Nivicela J.C., et al., *A new species of Pristimantis (Anura, Craugastoridae) from the Cajas Massif, southern Ecuador*. ZooKeys 751: 113-128 (2018) <https://doi.org/10.3897/zookeys.751.20541>.

³⁸ Interview with Ernesto Arbeláez, Biologist, Executive Director of Bioparque Amaru Cuenca, 7/8/19.

³⁹ Const. of Ecuador, Arts. 14, 400.

maintaining the quality of Azuay’s water. “Environmental services” refers to those functions that natural entities perform which directly and indirectly benefit human society. These include disposal services (e.g. nature provides processes for breaking down and absorbing toxins and refuse), productive services (e.g. providing natural resources such as water), and recreational services (e.g. providing spaces that satisfy psychological and spiritual needs).⁴⁰ For example, the Ministerio del Ambiente recently rated Cuenca’s rivers and drinking water as the best in all of Ecuador.⁴¹ Yet, maintaining this quality of water is not “free”—it takes a complex and sensitive web of species interactions, i.e. environmental services, to keep Azuay’s water pure. Frogs must continue having healthy tadpoles that digest waste products in rivers and lakes, thereby preventing the eutrophication of water sources; hummingbirds must continue pollinating the vegetation, thereby yielding more plants to absorb and trap environmental toxins; condors must continue scavenging carcasses and preying on sick animals, thereby accelerating the recycling of nutrients and keeping the entire ecosystem healthy.⁴² All these species must thrive to continue doing this. In short, páramo health and Azuay’s water quality is intimately connected—if the Condor does not thrive, Azuay’s water quality suffers.

Azuay stands to lose the most when its biodiversity is threatened—Azuay’s interest in its conserving its biodiversity is therefore the greatest. Including post-mining clean-up and monitoring, the Loma Larga Project is projected to run for decades,⁴³ but the mining companies and the federal government could lose interest in mitigation as soon as profits dry up. Then, only the people of Azuay will be left to bear the long-lasting environmental consequences. Presently, the people of Azuay ask only for the opportunity to decide for themselves if this gamble is worth taking. This Court should give them this opportunity.

V. The Popular Consult Will Protect Constitutional Rights of Nature

In addition to the reasons noted above, this Court should allow the popular consult because the Constitution and this Court’s past rulings together grant citizens the right to participate in the protection of constitutional rights of nature—including by popular consult.

The risks identified above constitute threats to Nature’s constitutional right to preserve its own biodiversity. To illustrate, Article 71 of Ecuador’s Constitution grants Nature “the right to integral respect for its existence and for the maintenance and regeneration of its life cycles, structure, functions and evolutionary processes.”⁴⁴ For Nature to persist, ecosystems must maintain their biodiversity. For biodiversity to persist,

⁴⁰ *Glossary of Statistical Terms: “Environmental Services”*, The Organization for Economic Co-operation and Development, <https://stats.oecd.org/glossary/detail.asp?ID=843>.

⁴¹ *Environmental ministry study gives Cuenca rivers highest marks for water quality*, Cuenca High Life, 10/5/2016, <https://cuencahighlife.com/cuenca-digest-report-gives-cuenca-rivers-high-marks-for-water-quality/>.

⁴² Interview with Ernesto Arbeláez, Biologist, Executive Director of Bioparque Amaru Cuenca, 7/8/19.

⁴³ *Feasibility Study* at 386.

⁴⁴ Const. of Ecuador, Art. 71 (“La naturaleza o Pacha Mama, donde se reproduce y realiza la vida, tiene derecho a que se respete integralmente su existencia y el mantenimiento y regeneración de sus ciclos vitales, estructura, funciones y procesos evolutivos”).

individual species must continue thriving. For species to thrive, individual members of those species must have an ecosystem that supports their welfare. This interrelated well-being—from individual organisms to entire ecosystems—is the “vital cycles, structure, [and] functions” that Nature has a right to maintain.

As this Court has said, rights of nature are transversal, affecting all other constitutional rights.⁴⁵ Infringements of Nature’s rights therefore affect citizens’ rights to participate in political processes. This Court has yet to articulate how rights of nature affect the right of popular consult, but other constitutional provisions, and this Court’s past statements, provide an indication of how these rights are affected. Article 71 states that “every...community...can demand of public authorities the fulfillment of the rights of nature.”⁴⁶ Elaborating on this, the Constitutional Court has previously stated that:

...it is also important to note that citizens play a fundamental role in protecting the rights of nature, since every person can demand that the administrative and judicial authorities observe these rights, for this, the State is called upon to promote citizen participation for the exercise of mechanisms focused on their protection.⁴⁷

Other constitutional articles⁴⁸ and Ecuador’s Penal Code⁴⁹ further make it apparent that the Ecuadorian government can—and often must—use its powers to defend biodiversity and individual organisms.⁵⁰

Given that (1) the mining practices at issue in the popular consult pose unmitigable and substantial risks to Ecuador’s biodiversity; (2) these risks will likely constitute infringements on the right of Nature to maintain its biodiversity; (3) Article 71 grants every community the power to protect rights of nature through the public processes; and (4) this Court has previously stressed that citizen participation is crucial to protecting these constitutional rights, this Court should allow the popular consult as an important mechanism for protecting constitutional rights.

⁴⁵ Corte Constitucional del Ecuador. Sentencia No. 166-15-SEP-CC. Caso No. 0507-12-EP. Registro Oficial, Suplemento, No. 575: 28/08/2015.

⁴⁶ Const. of Ecuador, Art. 71 (“Toda...comunidad...podrá exigir a la autoridad pública el cumplimiento de los derechos de la naturaleza”).

⁴⁷ Corte Constitucional del Ecuador. Sentencia No. 166-15-SEP-CC. Caso No. 0507-12-EP. Registro Oficial, Suplemento, No. 575: 28/08/2015 (“...es importante anotar que los ciudadanos cumplen un papel fundamental a la hora de proteger los derechos de la naturaleza, dado que toda persona puede exigir a las autoridades administrativas y judiciales la observancia y cumplimiento de sus derechos, para lo cual, el Estado es el llamado a promover la participación ciudadana para el ejercicio de mecanismos enfocados a su protección”).

⁴⁸ Const. of Ecuador, Art. 14 (“Environmental conservation, the protection of ecosystems, biodiversity and the integrity of the country’s genetic assets, the prevention of environmental damage, and the recovery of degraded natural spaces are declared matters of public interest”).

⁴⁹ Código Organico Integral Penal. Registro Oficial Suplemento No. 180: 10/02/2014. Artículo 247.

⁵⁰ Kauffman, C. & Martin, P., *Testing Ecuador’s Rights of Nature: Why Some Lawsuits Succeed and Others Fail*, Paper Presented at the International Studies Association Annual Convention (2016).

VI. Recommendation

If this Court allows the popular consult to continue, the federal government will not necessarily lose its investments. The international mining companies do not yet have to go back home. All that happens is that the people get to decide the fate of their province's nature. The federal government still gets the opportunity to persuade Azuayans that the promise of economic development outweighs the risks to biodiversity, water, and local communities.

Azuay's nature—the unique páramo species and biodiversity—could be irreversibly damaged by the mining practices at issue in this popular consult. Prefect Pérez only asks this Court to let the people decide the importance of protecting the páramo ecosystem. Because the people of Azuay, more than anyone else, would shoulder the environmental and economic consequences of these mining practices, and because a popular consult could serve as an important mechanism for protecting constitutional rights of nature, we recommend that this Court allows the popular consult presented by Prefect Pérez. The people of Azuay should get the opportunity to decide whether to gamble with Azuay's nature.

Respectfully submitted,

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