PROTECTED AND EXTRACTIVE SPACES:

A POLITICAL ECOLOGICAL ANALYSIS OF CONSERVATION AND MINING AROUND THE JUNÍN NATIONAL RESERVE, PERU

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A Thesis

Submitted in Partial Fulfillment

of the Requirements for the Degree of

Master of Science

in Geography

Northern Arizona University

May 2023

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ABSTRACT

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Conservation and mining are distinct forms of natural resource management that have dissimilar impacts on environments and communities and represent contrasting ways of understanding the landscape. Convergences of conservation and mining in the same area, moreover, can have complex social-ecological and spatial implications. The Junín National Reserve (RNJ), located in the highland regions of Junín and Pasco in central Peru, is one such case – yet it remains considerably overlooked by existing literature. Using a political ecology framework, this thesis examines how the intersection of conservation and extractivism around the RNJ produces space across the landscape. An actor-oriented approach is utilized to consider how different actors such as Peru's protected area service, mining corporations, NGOs, regional authorities, and local communities understand and use resources and space. Interviews with diverse actors were conducted and illuminated a web of power-laden relations that extends far beyond the study site. Pervasive entanglements of both conservation and mining with social life (re)produce emergent spaces and conflicting hegemonies throughout the landscape of highland Junín and Pasco. Ultimately, this thesis argues that the spatialities of conservation activity and subsoil mineral extraction serve to co-produce one another. These insights underscore the political nature of resource governance convergence and suggest that social-ecological systems analysis would benefit from critically engaging with production of space perspectives.

Key words: *conservation, protected areas, extractivism, resource governance, power, political ecology, production of space*

ACKNOWLEDGEMENTS

This project is far more than a M.S. thesis. It is the culmination of experiences and relationships that emerged in 2018 when I first saw Lake Chinchaycocha across the *puna* in Carhuamayo, Junín, where I was living as a Peace Corps Volunteer. It represents the shared love of a landscape, years of friendships and partnerships that transcend languages and borders, and collections of stories told over coffee, *maca*, and beer. For this reason, I would like to acknowledge some people who have been instrumental in getting me here.

I would first like to thank my advisor and committee members Dr. Brian Petersen, Dr. Jessica Barnes, and Dr. Alark Saxena for their invaluable knowledge and guidance throughout the course of this project. I would also like to thank Dr. Lucero Radonic, Dr. Maiah Jakoski, and Dr. Erik Nielsen for offering me insights from their deep knowledge of Latin American resource governance issues. Thank you to my friends and colleagues Anna Vaughn, William Cannon, Sydney Rittershaus, Ross Bolesta, Chris Phair, and Danielle Juarez for providing levity and meaningful camaraderie during my time at NAU. Lastly, a huge thank you goes out to my parents and my sister for their endless encouragement - from supporting my decision to join the Peace Corps and pursue graduate school to putting up with my frequent ramblings about environmentalism and social theory.

Most importantly, I would like to thank my participants, colleagues, and friends in Peru for their knowledge and involvement in this project. Thank you to all to of my interview participants who took time out of their lives and days to speak with me about the landscape and their experiences within it. Special thanks must be given to Ronald, Duanne, Winy, and Juanca who offered invaluable experiential knowledge and connected me with numerous stakeholders whom I would not have known otherwise. Thank you to Antonio, Andres, and the rest of their family for sharing laughs, drinks, and music. And most importantly, I would like to extend my

deepest love and gratitude to my *familia anfitriona* (host family) for making me feel like a *carhuamaino* and welcoming me on two occasions: when I first arrived in Carhuamayo in 2018, wide-eyed and barely capable of producing a coherent sentence in Spanish, and again during my field work in 2022. I am forever grateful.

Without each and every one of these people, this project would not have been possible. As such, I would like to dedicate this thesis to every Reserve-adjacent resident, both those with whom I connected and those whom I may never meet. It is my hope that, at the very least, this thesis can shed light on the complex matters surrounding the Junín National Reserve for broader sects of the population, particularly in the U.S. and Global North.

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POSITIONALITY STATEMENT

I consider my personal identity, background, and experiences to be integral considerations for the ways in which I engage with the topic and area of study. I am a white, upper-middle-class, cisgender male living in the western United States. From mid-2018 to early-2020, I lived in the area of study – specifically in the town of Carhuamayo, Junín – as a U.S. Peace Corps Volunteer. Although my work did not directly concern resource governance, I met and engaged with resource management stakeholders in the area, including local government authorities, SERNANP park rangers, NGO representatives, and various community members and leaders. During this time, I worked exclusively in Spanish, becoming professionally proficient in the language.

My experiences as a Peace Corps Volunteer in the area served as a starting point for this thesis. Limited exposure to issues of conservation, mining, and resource governance in general showed me that the challenges that face the Junín National Reserve and Lake Chinchaycocha are pressing and worthy of attention. As a result, there is a normative orientation to the research conducted and presented throughout this thesis. It is informed by a commitment to social and environmental justice for Reserve-adjacent communities and a fundamental belief that the unique landscape of highland Junín and Pasco is deserving of protection.

ABBREVIATIONS

ALA	Autoridad Local del Agua (Local Water Authority)
ANA	Autoridad Nacional del Agua (National Water Authority)
CGALC	Comité de Gestión Ambiental del Lago Chinchaycocha (Lake Chinchaycocha Environmental Management Committee)
CGRNJ	Comité de Gestión de la Reserva Nacional de Junín (Junín National Reserve Management Committee)
DREM	Dirección Regional de Minas (Regional Mining Directorate)
ECOAN	Asociación de Ecosistemas Altoandinos (Association of High Andean Ecosystems)
FCCA	Ferrocarril Centro Andino (Central Andean Railway)
FEDAC	Frente de Defensa del Agua de Carhuamayo (Water Defense Front of Carhuamayo)
OEFA	Organismo de Evaluacion y Fiscalizacion Ambiental (Agency for Environmental Assessment and Enforcement
MINAM	Ministerio del Medio Ambiente (Ministry of Environment)
MINEM	Ministerio de Energía y Minas (Ministry of Energy and Mines)
RNJ	Reserva Nacional de Junín (Junín National Reserve)
SERNANP	Servicio Nacional de Áreas Naturales Protegidas por el Estado (National Service of Natural Protected Areas)

Me gustaría tener manos enormes,
violentas y salvajes,
para arrancar fronteras una a una
y dejar de frontera solo el aire.

Que nadie tenga tierra
como tiene traje:
que todos tengan tierra
como tienen el aire.

I would like to have enormous hands,
violent and free,
to tear down borders one by one
and leave only the air.

May nobody have land
as they have clothing:
may everyone have land
as they have the air.

- Jorge Debravo, poet (1938 – 1967)

CHAPTER I: INTRODUCTION

On September 17th, 2015, 58 Peruvian men and women from the central Andean city of Cerro de Pasco set forth on a 180-mile *marcha de sacrificio* to the capital of Lima, protesting the government's neglect of widespread lead contamination resulting from centuries of metal mining development. On their second day, the protesters made their way along the *Carretera Central* by the vast expanses of wetlands that comprise the eastern edge of Lake Junín, backdropped by rolling tundra and jagged, exposed peaks. It was a symbolic moment in what became a 15-day march marked by police violence and state repression, as protesters overlooked a landscape at the crossroads of tremendous biodiversity and immense environmental degradation. Today, more than seven years later, the contamination of Lake Junín – and the soils of the Junín and Pasco regions that surround it – continues.

Figure 1. Lake Chinchaycocha, with its distinctive bofedales (Andean wetlands)

I. The Peruvian context

Peru is a country rich in natural resources, biodiversity, and human history. Its landscape is marked by an abundance of both protected areas and subsoil extractive activities. Peru's protected area system includes 75 protected areas of differing statuses - national parks, reserves, sanctuaries, landscape reserves, protected forests, and more - that constitute 15% of the country's surface area (SERNANP 2020). At the same time, Peru's physical and human geography is characterized by widespread mining activity; it is estimated that there are 200 operating mines in the country and countless other prospects and projects underway (International Trade Administration 2021). Most of these mines extract and process metals like gold, silver, and copper and, in some cases, heavy metals like lead, mercury, cadmium, and arsenic. The geographies of protected areas and mines, however, are not mutually exclusive. In many cases these frontiers overlap to impact ecologies and communities in intricate ways. Such is the case for the Junín National Reserve (RNJ), located on the border of the Departments of Junín and Pasco in the *puna* (high plains) of the central Andes about 200 kilometers northeast of Lima.

II. The Junín National Reserve

Established in 1974 by the present-day *Servicio Nacional de Áreas Naturales Protegidas por el Estado* (National Service of Natural Protected Areas, or henceforth, SERNANP), the RNJ encompasses the entirety of Lake Junín, known locally as Lago Chinchaycocha, the second largest lake in Peru after Lake Titicaca (Shoobridge 2006). Situated at about 4000 meters above sea level and covering an area of about 50,000 hectares, the RNJ preserves a unique alpine landscape composed of shrubland, grassland, wetland, and freshwater lacustrine ecosystems (Shoobridge 2006). The Reserve's objective is the integrated conservation of the landscape's

biodiversity and scenic beauty and the support of regional socioeconomic development through the sustainable management of its natural resources (Shoobridge 2006).

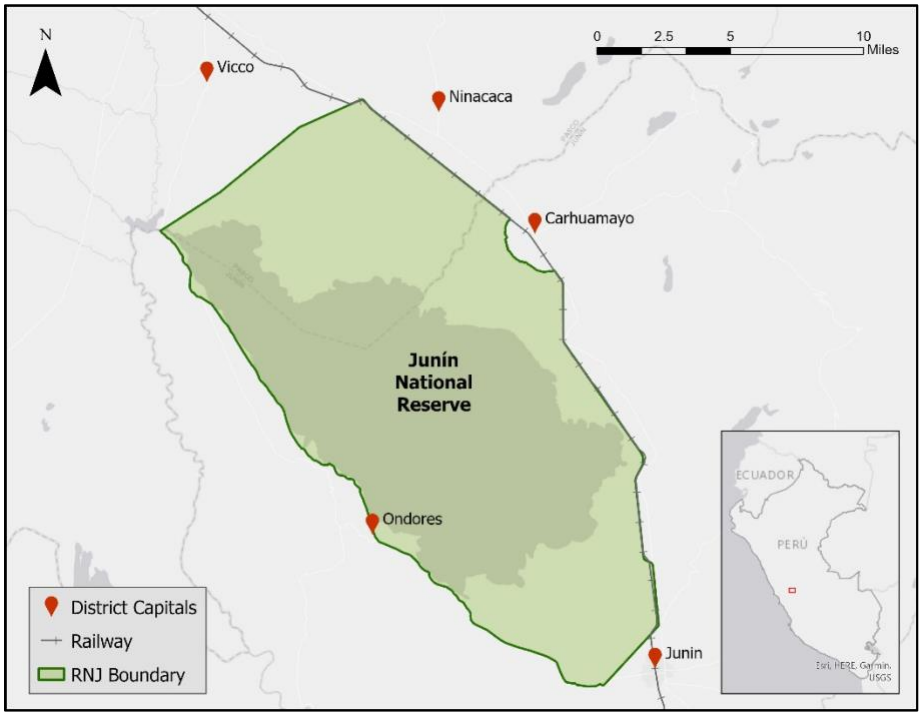

Figure 2. Location of the RNJ in the Departments of Junín and Pasco

In a region otherwise characterized by montane grassland and shrubland, the presence of Lake Junín lends the RNJ its unique ecology and high biodiversity. Aquatic and littoral vegetation is abundant, boasting large areas of *bofedales* (Andean wetlands) that are home to extensive cattail communities along the lakeshore. A plethora of wildlife species are also found in the RNJ; most notable is the Reserve's birdlife, which is the richest of all high Andean wetlands and equaled only by Lake Titicaca (Shoobridge 2006). The most well-known of all bird species found here is the *zambullidor* or Junín grebe (Podiceps taczanowskii), a flightless, red-eyed waterfowl found only in Lake Chinchaycocha and incapable of migrating to other lakes. With an estimated population of only about 200 individuals - and at one time less than 80 - the

International Union for the Conservation of Nature (IUCN) considers the Junín grebe critically endangered (IUCN 2020). A second important species of fauna found only in Lake Junín is the *rana gigante* or Junín giant frog (Telmatobius macrostomus), a large, exclusively aquatic frog. Its biology is comparable to that of the Lake Titicaca giant frog (Telmatobius culeus), but due to its small population and evasive nature, relatively little is known about its habitat, feeding and mating behaviors, and overall ecological role (see Watson 2017). Once considered functionally extinct and with its exact population unknown, it is also critically endangered (Shoobridge 2006; Watson 2017; IUCN 2018).

Historically, the declines of both the Junín grebe and Junín giant frog have been associated with human hunting and consumption. While there is some documented hunting of waterfowl and collecting of the Junín giant frog (Shoobridge 2006; Watson 2017; IUCN 2018 and 2020), it is unclear how frequently these activities occur and there is no empirical data to speak to what their true impact on these species' populations has been. Moreover, heavy metal contamination in Lake Junín because of mining activity is often considered secondarily, or not at all, as a threat to these species and the overall ecology of the RNJ.

As aforementioned, SERNANP is the governing body for the RNJ, located in its local office in the City of Junín on the Reserve's southeastern edge. This branch of SERNANP employs several *guardaparques* - park rangers - and a park superintendent who conduct activities related to conservation, monitoring and assessment, public use, education and outreach, and budgeting. Physical and social space in the RNJ is organized through zoning laws that set rules guiding the use of the landscape and its resources. The RNJ is divided into seven distinct types of zones: wild zones, tourism, and recreation zones, direct use zones, special use zones, restoration zones, historic and cultural zones, and buffer zone (Shoobridge 2006). Tourism is

limited - though SERNANP does at times take visitors on wildlife viewing and photography tours - and as a result, the principal objective of the RNJ has become conservation and public engagement.

Although SERNANP is the formal governing body for Peru's protected area system, the RNJ is unique in that NGO actors have been entirely integrated into its management structure. There are three main NGOs that partner with the local SERNANP office: Grupo Rana (in English, "Frog Group") the Association of Andean Ecosystems (ECOAN), and the Denver Zoo Foundation. Grupo Rana is a conservation organization that, through a partnership with the Denver Zoo, focuses on researching and conserving the Junín giant frog. ECOAN has a wider scope, leading various conservation, and sustainable development projects in numerous regions of Andean Peru. Around the RNJ, though, the organization focuses on the conservation of the Junín grebe and the *bofedales*. Considering the proximity of agricultural communities to the RNJ, Grupo Rana and ECOAN have increasingly emphasized public outreach and community sustainable development projects over the past few years, recognizing the importance of connecting communities to the resources upon which their livelihoods often depend.

As such, conservation in the RNJ has transitioned toward encouraging a more participatory approach characteristic of co-management or community-based natural resource management (CBNRM). With the establishment of the Junín National Reserve Management Committee, communities around Lake Chinchaycocha have been - at least on paper - integrated into management and conservation decision-making processes (SERNANP 2013). The Committee is composed of park rangers, representatives from the Grupo Rana, ECOAN, and Denver Zoo, regional and local government officials, and community members from the 11 towns around the RNJ. Its goal is to inform and give voice to communities regarding how

conservation efforts are undertaken and what threats face the Reserve, and ultimately to better involve communities in ground-up resource management initiatives.

III. Mining in highland Junín and Pasco

The roots of Peru's extractive sector can be traced to the era of Spanish colonization, during which the "overriding objective" of the colonial state was the mining of precious metals, particularly silver, to send back to Spain and other capital-rich economies overseas (Himley 2018). During this period, mining was the principal driver of social and environmental transformation in the central Andes (Himley 2018). Such a focus on extractivism - that is, the process of locating, removing, and processing raw natural resources from the earth - left its mark on post-colonial Peru too. Historical analysis reveals that in the late 19th century, following Peruvian independence, there was an intentional focus by the national government to stimulate a mining economy through infrastructural, technological, and institutional means with the goal of national-scale development (Himley 2018). This goal was always intended to be realized through the exporting of material resources and the wealth they generate to other countries, meaning that Peru's extractive sector has long been integrated into global capitalist markets (Himley 2018).

Foreign investment in Peru's extractive sector was primarily facilitated in the 1990s when then-President Alberto Fujimori enacted a series of domestic neoliberal reforms aimed at deregulating large swaths of the economy. As a result, many mining operations in the Peruvian Andes are either foreign direct investments from transnational corporations (TNCs) or run by subsidiaries of foreign-owned companies. Today, while mining only represents around 10% of the country's GDP, it constitutes 60% of its exports (International Trade Administration 2021). In essence, Peru's mining sector has been transformed into an 'enclave economy', in which

export-based industries dominated by international (or at least non-local) capital flows extract mineral wealth from localized areas in rural parts of the country (Kruijt and Vellinga 1977).

These trends, however, have not been spatially uniform and have produced highly uneven development across the country. There has been a historical concentration of mining activity in the mountainous zones of the Departments of Junín and Pasco. During Spanish colonization, mining development was 'selectively territorialized' in this region, especially in the area around present-day Cerro de Pasco (Himley 2018). This legacy has endured, with Junín and Pasco remaining a critical center for mining activity (Figure 3, next page). Cerro de Pasco, for instance, remains one the world's largest silver mines (Himley 2018). While many corporations run metal mining projects, Compañia Minera Volcan S.A.A. (Volcan) and Nexa Resources S.A. (Nexa) are the principal corporate actors in this region. Volcan, while now a Peruvian-owned company, was born from the Cerro de Pasco Corporation, a U.S.-based mining company founded in 1902 (Dajer 2015). It now runs the large-scale silver mine in Cerro de Pasco, the 70,000-person capital city of the Department of Pasco, which is situated less than 50 kilometers north of the RNJ (Dajer 2015). Nexa, based out of Luxembourg, has opened an operation called Project Shalipayco, located just outside the community of Carhuamayo, Junín, along the eastern edge of the RNJ (Nexa Resources S.A. 2017). This project will mine zinc, lead, and silver and is expected to have a "useful life" of 15 years (Nexa Resources S.A. 2017).

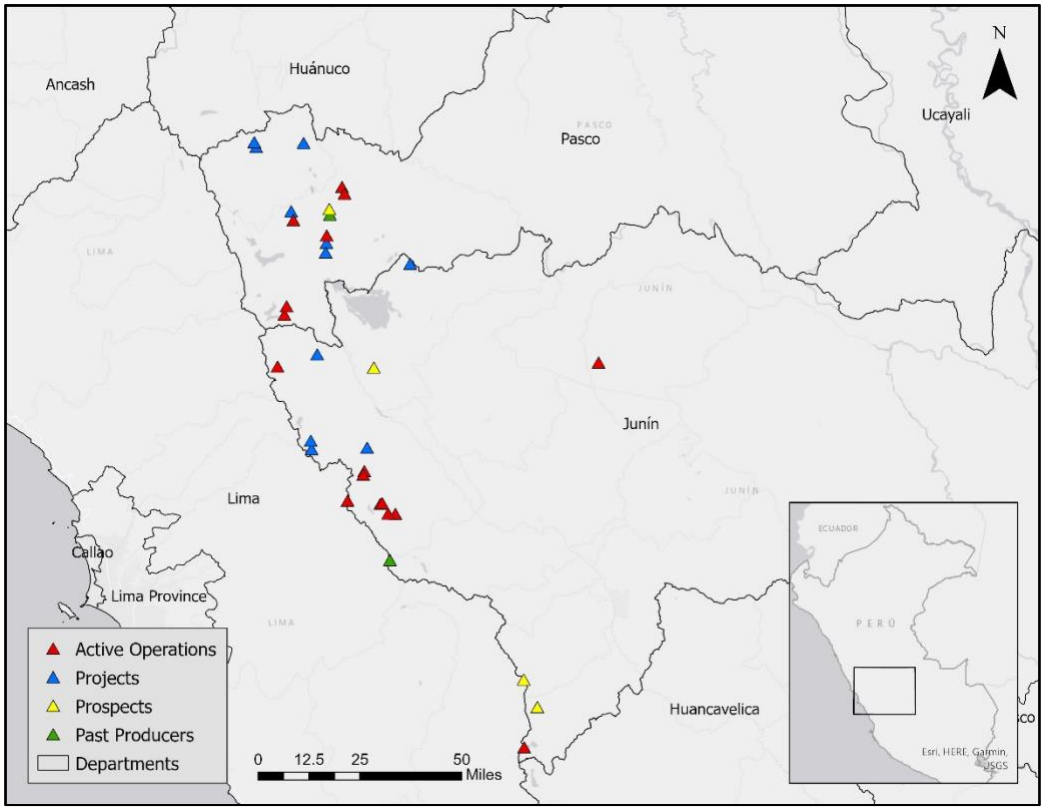

Figure 3. Distribution of mines in the highland areas of the Junín and Pasco regions

Mining projects are overseen by the country's Ministry of Energy and Mines (MINEM), which was founded in 1968 to formulate and regulate policies regarding the consumptive and productive use of domestic natural resources (MINEM 2021). While the ministry manages energy production as well, it's primary focus is mining due to the geographic, political, and economic significance of Peru's extractive sector. Specifically, it's objective is to promote the development of the mining 'sub-sector' and manage and private investment in and the legal stability of mining resources and activities (MINEM 2021). It thus has close ties to the corporations, both domestic and transnational, that operate mines around the country, maintaining an institutional relationship with private and public companies.

IV. A geography of convergence

The intricate relationship between Peru's physical and biogeography, colonial history, and political-economic arrangements have produced a myriad of seemingly contradictory geographies around the country, characterized by spatial overlaps of protected areas and mining activity. Figure 3 on the following page depicts the spatial relationship between protected areas and mining operations. While on the one hand conservation and mining might be understood similarly - as resource governance strategies and forms of capital seeking opportunities for accumulation - on the other hand they are highly dissimilar in their spatial imaginaries, future visions, and impacts on environments and communities at varying scales (Bebbington and Bury 2014). In this case, the state (contradictorily represented by both SERNANP and MINEM), domestic and foreign mining corporations, and communities (those proximate to both protected areas and mining activity) can be understood as the principal actors and institutions of resource governance that shape rule-making and human-environment interactions. Notably, too, the Peruvian government has been intent on facilitating the coexistence of these differing resource governance structures, despite their seemingly incompatible land-use designations (Bebbington and Bury 2014).

Understanding these convergences, and especially the respective and interrelated roles of the state and non-actors operating at different scales, is instructive for several reasons. First, it can shed light on the ways in which they are linked to local struggles over resource access, natural resource governance institutions, and livelihoods. Second, it can allow for an analysis of how physical and social space is appropriated and transformed in conjunction with one another. Insights provided by studying geographies of convergence are salient in the case of the RNJ and high Junín and Pasco, as they speak to a situation in which resource access is directly tied to

subsistence and livelihoods and in which contested landscape ideologies can have dramatic and transformative impacts on physical and social space. While on the one hand, mining activity in high Junín and Pasco may hold the potential to provide the region with employment opportunities and economic growth, the integrity of Lake Junín and agricultural production in the region are subjected to mining contamination and runoff. Moreover, the touching down of conservation and mining around Lake Chinchaycocha has the potential to profoundly transform natural resource governance in the RNJ. Given SERNANP's current focus on the Junín National Reserve Management Committee, this includes transformations in the efficacy and effectiveness of CBNRM.

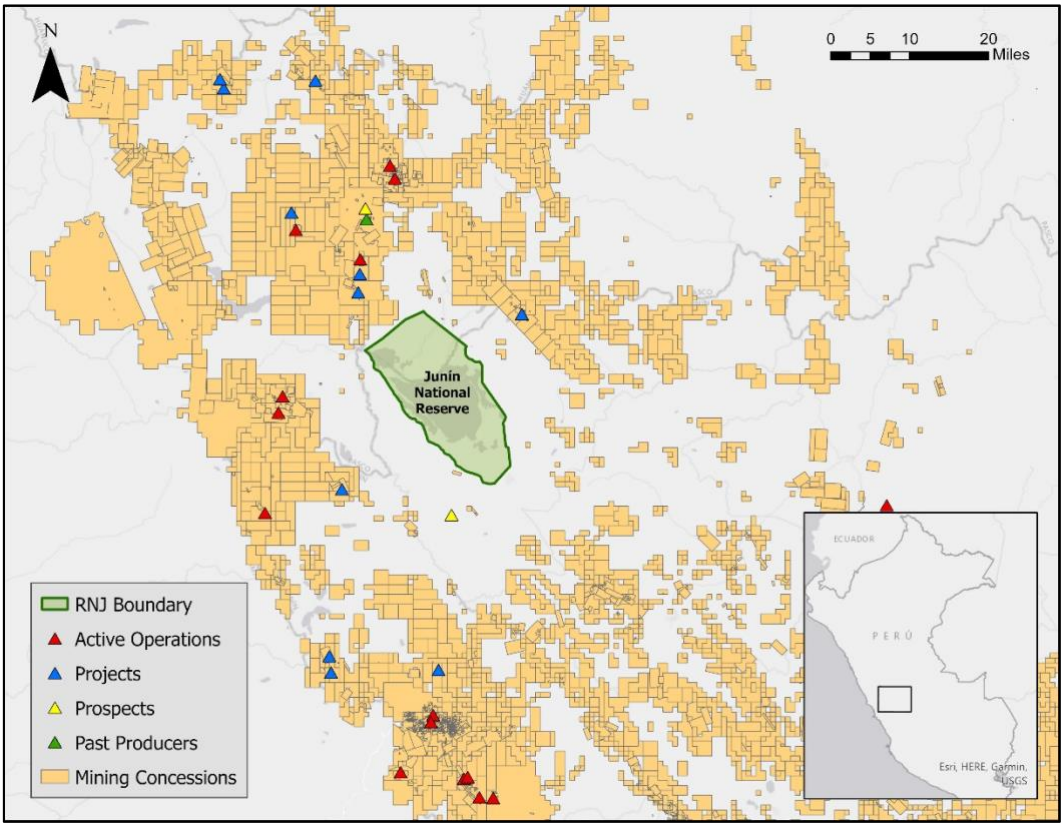

Figure 5. Distribution of mining activity around the RNJ

V. An actor-oriented approach

This thesis will utilize an actor-oriented political ecology to explain the convergence of conservation and mining in highland Junín and Pasco by examining how the behavior of actors at different scales can influence resource use and access around Lake Chinchaycocha. In political ecology and related fields, actors have often been characterized as individuals or collective entities – be they human or non-human – that participate in power relations with other actors (Young 1972; Frey 1985). In this sense, actors have or lack power due to their differential capacities to affect change or influence the practices of other actors (Svartsad et al. 2018). According to Bury (2008), actor-oriented frameworks are able to identify and examine relevant actors in a given social-ecological system or conflict, the networks that connect them, and recognize the dependent nature of outcomes that emerge through their interactions. There are numerous benefits of focusing on actors; these include recognition of beneficial or conflicting actor relationships, identification of casual outcomes across scales, and more nuanced understandings of actors themselves. The latter point is especially important, as actors such as the state or local communities should not be conceived as monolithic but rather as internally divergent entities (Kull 2002; Bury 2008; Collard et al. 2020).

Long (1989 and 2004) suggests that attention be paid to social *interfaces*: places where, times when, and ways in which different actors encounter one another. Grounded in the notion of "battlefields of knowledge" (Long 1989; Long and Long1992), social interfaces imply points where different and often contrasting knowledges, experiences, and worldviews intersect. Although the term 'interface' may suggest some sort of two-way interaction, social interfaces are complex and multilayered, "containing within them many different interests, relationships, and modes of rationality and power" (Long 2004). As such, interfaces are based on a few key

elements: (1) interlocking relationships and intentionalities, (2) conflict, incompatibility, and negotiation, (3) clashes of cultural paradigms, (4) the importance of knowledge processes, (5) power as a process and an outcome, and (6) multiple discourses. An actor-oriented approach focused on interfaces is thus well-aligned with this thesis, particularly this research's production of space perspective. It emphasizes the centrality of actor relations while also recognizing that these relations do not exist in a vacuum and are entangled with structural forces and processes. In other words, social and environmental outcomes are mutually determined by both structural elements and actor behavior across multiple scales (Bury 2008).

There is a plethora of social actors embedded in the conservation-mining convergence around Lake Chinchaycocha, each with their own functions, responsibilities, goals, and types of knowledge. Table 1 on the following page depicts a list and brief description of the main actors considered in this thesis.

Ministry of Environment (MINAM)	Government ministry responsible for environmental policy, management, and conservation on a national level.
National Service of Natural Protected Areas (SERNANP)	Technical body within MINAM responsible for managing and overseeing the National System of Natural Protected Areas. SERNANP Junín is the governing body of the RNJ.
Agency for Environmental Assessment and Enforcement (OEFA)	Technical body within MINAM responsible for the supervision and enforcement of environmental management. Conducts assessment, supervision, and enforcement of potentially environmentally degrading activities.
Ministry of Energy and Mines (MINEM)	Government ministry responsible FOR formulating and regulating policies regarding the consumptive and productive use of domestic natural resources on a national level.
Regional Mining Directorate (DREM)	Sub-body of MINEM responsible for promoting the sustainable development of extractive and energetic activities on a departmental (regional) level.
Ministry of Agriculture and Irrigation (MIDAGRI)	Government ministry responsible for agrarian development on a national level, including forestry, water, and irrigation.
National and Local Water Authorities (ANA, ALA)	Technical body within MIDAGRI responsible for overseeing the multisectoral and sustainable use of water resources on a national (ANA) and departmental/sub-departmental level (ALA).
Association of High Andean Ecosystems (ECOAN)	Non-profit NGO dedicated to the conservation of threatened Andean ecosystems and endangered species within them. Works with SERNANP Junín on the conservation of wetlands and the *zambullidor*.
Grupo Rana	Non-profit NGO dedicated to the conservation of endangered amphibian species in Andean Peru. Works with SERNANP Junín to research and protect the Junín giant frog.
Denver Zoo Foundation	Non-profit organization attached to the Denver Zoo (U.S.) dedicated to researching and protecting the Titicaca water frog and, with SERNANP Junín, the Junín giant frog.
Volcan S.A.A.	Peruvian mining company, owned by Swiss conglomerate Glencore PLC, that extracts silver, zinc, copper, and lead concentrates in the Department of Pasco.
Nexa Resources S.A.	Peruvian mining company, owned by Brazilian conglomerate Votorantim S.A., that extracts zinc, copper, and lead concentrates in the Department of Junín.
Electroperú S.A.	Public utility company responsible for the generation and transmission of electrical energy on a national level. Manages the Upamayo Dam north of the RNJ, generating between 25 and 30% of Peru's total electricity.
Buffer zone communities	Communities located adjacent to the RNJ and within its buffer zone along the edges of Lake Chinchaycocha. They are many, but the largest are: Junín, Carhuamayo, Ninacaca, Ondores, Vicco, Huayre, San Pedro de Pari, Huarmipuquio, Uco, Chuyroc, and Paccha.
Carhuamayo Water Defense Front (FEDAC)	Community organization founded within Carhuamayo to protest Nexa Resources' Shalipayco Project, which would begin extraction at one of the town's main water sources, Laguna Yanacocha.
Junín National Reserve Management Committee (CGRNJ)	Regional/sub-regional co-management committee designed to promote collaboration in managing the RNJ for both protection and local use.
Lake Chinchaycocha Environmental Management Committee (CGALC)	National multisectoral committee that promotes the sustainable use of Lake Junín through the development of environmental protection, control, and remediation actions in partnership with the private sector.

Table 1. List and description of actors

VI. Research statement and questions

As will be discussed in the following section, there is a plethora of academic literature that documents (1) the spatial overlap between protected areas and extractive activity and (2) the social production of space through natural resource management regimes. However, research on how overlaps of protected areas and mining produce space within a social-ecological system is considerably underdeveloped. Based on that gap in the literature, this thesis is principally concerned with how space is co-produced through diverging natural resource management systems that touch down in the same geographic area, and ultimately what impact or influence that has on resource governance regimes.

The following two questions served as a baseline for this research:

1. *How does conservation produce space around the RNJ?*
2. *How does mining produce space around the RNJ?*

The third research question below represents the core of this thesis:

3. *How do conservation and mining co-produce space and what impact does this have on resource governance for the RNJ?*

CHAPTER II: REVIEW OF LITERATURE

There is a robust body of geographic research surrounding political ecology, natural resource conservation, and extractivism, as well as important approaches – rooted in critical social theory – that seeks to demonstrate how conservation systems and extractive landscapes are social products. Furthermore, there exists a small but insightful sub-focus within political ecology that analyzes how conservation and extractivism overlap to transform social-environmental landscapes, which serves as an integral starting point for this thesis. As I will highlight, however, academic literature focused on the RNJ is severely limited and there is yet to be any study concerning resource and landscape contests in high Junín and Pasco. The following section seeks to review and synthesize this existing literature while highlighting its considerable gaps and limitations. Doing so will lay the groundwork for novel ways of examining the landscape of the RNJ, caught at the convergence of conservation and mining activities.

I. Theoretical approach: political ecology

In conceiving the RNJ as a social-ecological system characterized by coupled social and biophysical factors, my research will explicitly draw upon concepts and theories commonly associated with political ecology as an analytical framework. Political ecology is a field that links environmental change to social, political, and economic contexts and seeks to explain how such contexts (re)produce social and environmental degradation (Blaikie and Brookfield 1987; Peet and Watts 2004; Robbins 2011). Robbins' (2011) conceptualization of political ecology characterizes the field as a 'community of practice' encompassing both academia and activism. In this way, the fundamental assumptions and goals of political ecology are normative; the community of practice maintains that the world is wrought with environmental injustices and that society is wanting in ways that require uncovering and addressing (Robbins 2011). It is

important to note, however, that political ecology is not itself a theory. Rather, it is grounded in concepts and theories that encourage critical analysis. Such concepts are multiple and interlinked, but for the purposes of this thesis, three are particularly noteworthy.

1. *Chains of explanation*. As outlined by Blaikie and Brookfield (1987), political ecology seeks to identify the underlying causes of localized social-environmental degradation through chains of explanation that expand outward to regional, national, and global scales. This pseudo-methodology situates local issues in broader contexts and makes for a useful critical analysis of how various social and environmental processes interact at and across nested spatial scales.

2. *Marxist political economy*. Because the chains of explanation underscore the broader political-economic forces associated with environmental change, political ecology often draws upon Marxist political economy to understand the root causes of such change. Marxist analysis sees capitalism as a historical and driving force of environmental degradation, given that it is predicated on the accumulation of capital and generation of surplus value through the appropriation of natural resources (Peet and Watts 2004; Robbins 2011).

3. *Power differentials*. Political ecology gives special analytical consideration to notions of power and control, specifically the distribution of power between various actors and institutions associated with resource governance to reveal ‘winners’ and ‘losers’ (Peet and Watts 2004; Robbins 2011). Here, a theoretically diverse conceptualization of power is useful. Power (1) produces and is produced by social, political, and economic processes and relations and (2) as proposed by Foulcault, is

inextricably linked to accepted forms of knowledge and the production of such knowledge (power/knowledge) (Foucault 1994).

While political ecology has been most frequently drawn upon in case studies involving terrestrial resources like forests, agriculture, and, generally, public lands, there is a strong case to be made for the application of a political ecology framework to subsoil resource dynamics. As argued by Bebbington and Bury (2014), the subsoil is a critical factor in Latin American social-environmental relations, as it holds immense power in the transformation of both the environment and social life. A 'political ecology of the subsoil' is thus a useful conceptualization of the social, political, and economic dynamics of extractivism in two ways. First, it underscores how the environment can affect society without slipping into determinism; second it assumes a critical realist or 'soft constructivist' perspective that conceives the environment as integrated into social and political life without claiming that that the natural world is entirely socially produced.

With these ideas in mind, a political ecological framework is well-suited to understand the landscape of the RNJ. Specifically, applying key concepts of political ecology reveals two novel and connected insights regarding the RNJ's converging geographies protection and extraction: (1) socio-ecological processes in the RNJ are integrated into nested spatial scales of capital accumulation and international governance and (2) power is unequally diffused within and among the actors that shape social and environmental interactions in Junín and Pasco, leading to fundamentally politicized and contradictory actor-networks.

Taken together, the chains of explanation and Marxist analysis underscore the broader socio-spatial and political economic contexts in which the RNJ's resource governance convergence is situated. In this sense, both conservation and mining should be understood as

broader forces that link the RNJ's social-ecological relations to the rest of Latin America and the world. As a PA, the RNJ is but one unit of a global system that represents a far-reaching movement by governments, NGOs, financial institutions, and civil society groups to conserve biodiversity and landscape. Crucially, however, as some political ecologists point out, the global conservation agenda is fundamentally rooted in capitalist development. The establishment of PAs, for instance, can be taken as a form of accumulation through the enclosure of land and resources (Kelly 2011), following which their boundaries are posited as a means of alleviating (or at least providing a respite from) capitalism's destruction of nature elsewhere (Büscher and Fletcher 2020). Furthermore, forms of 'new conservation' – which seek to reject the traditional human-nature dichotomy by incorporating local people through CBC and CBNRM projects such as those of the Junín National Reserve Management Committee – have led to conservation becoming a force of development and a form of capitalist production in its own right (Büscher and Fletcher 2020).

Mining around Lake Junín, on the other hand, is more conspicuously tied to global markets and capital accumulation. The extraction and processing of silver, copper, and zinc from the Cerro de Pasco and Shalipayco mines are contextualized within the long history of mining in Junín and Pasco, which is only one region of many in the country characterized by extractive endeavors. Moreover, Peru's mining industry – especially with the advent of modern resource and commodity booms (Loayza and Rigolini 2016) – has been integrated into global capitalist markets. This is evident in the fact that 60% of Peru's exports come from mining and that most mining operations in the country are either foreign-owned or domestic subsidiaries of foreign-owned corporations (International Trade Administration 2021).

These trans-scalar connections also highlight the idea that spatial boundaries of both conservation and extractivism are fluid. While the RNJ may have managerial and politically established borders, the social and biophysical processes at play there do not conform to these boundaries and impact the broader landscape and as well as proximate communities. The geological and chemical impacts of metal mining on Lake Junín are also trans-scalar in nature. Although the Cerro de Pasco silver mine, for instance, its located more than 40 kilometers away from the RNJ, acid mine drainage has led to severe contamination of sediment in Lake Junín to the point of being considered the most contaminated lake in the country (Rodbell et al. 2014).

Viewing the landscape of the RNJ through a political ecological lens necessitates a politicized understanding of inter and intra-actor relations. 'Politicized' in this sense refers to contestation in decision-making and resource use. Here, the state is a paramount consideration, as it is fundamentally a contradictory and tension-ridden entity that seeks to maximize profit and support economic expansion on the one hand while trying to protect natural environment from the consequences of such expansion on the other. In the case of the RNJ, the state is represented by SERNANP and the *guardaparques* who seek to conserve the biodiversity and landscape of Lake Junín, yet it also supports the mining industry politically and economically through laws, policies, and finances aimed at continual growth. Peru's national government, moreover, seems intent on facilitating the coexistence of these starkly different resource governance strategies, or as some political ecologists have claimed, "balancing obligations" and creating "win-win scenarios" (Collard et al. 2020).

The contradictory unity of the state as both a promoter of and protector from extractive development and economic growth leaves the door open for power dynamics of the modern capitalist state to play out. The financial capital of Volcan and Nexa – combined with the

political power the Peruvian government has granted these companies – is juxtaposed to the relatively minute political and financial capital of SERNANP and conservation NGOs that work in the RNJ. Moreover, as these actors use their power and relations to appropriate the RNJ and its resources, local communities are adversely impacted. For the most part, people in these communities are already marginal – relying on agricultural and subsistence livelihoods outside of the realms of either Peru's federal government or mining corporations – yet influenced by these more powerful actors. They become easily excluded from conservation efforts and natural resource management decisions, and when they are included, it is often de jure and not de facto, as in the case of the Reserve's attempt at co-management, the Junín National Reserve Management Committee. In many instances, furthermore, the 'governmentality of extractivism' (Andreucci and Kallis 2017) is apparent in communities around the RNJ, as local peoples internalize hegemonic notions of extractive economic growth and come to support the presence and activities of mining companies, believing that such operations will create jobs and bring material prosperity to the region (Dajer 2015; Andreucci and Kallis 2017). This only serves to reproduce local communities' marginality, as people become disinclined to participate in resource governance decisions, conservation efforts, or anti-mining activism.

II. Conservation and protected areas

Conservation spaces have long been a focus of political ecology, with special attention generally being placed on critically assessing conservation strategies and outcomes as well as on the human dimensions of conservation and protected area management. These approaches have assumed a number of different yet interconnected directions. One of the most well-established arguments directed toward protected areas, in particular, is the notion of 'paper parks', a term first coined by the World Wildlife Fund (WWF) to describe protected areas that exist de jure

(that is, on paper) but de facto do not serve to preserve biodiversity or halt the degradation of a landscape (Watson and Castillo 2022). There are numerous reasons for this phenomenon, including insufficient funding, corruption, complex and often adverse impacts of protected areas on adjacent local populations, and the fact that legally and/or politically defined boundaries set on protected areas often do not correspond to the ecological or biophysical processes of those landscapes, making management challenging (Wilkie et al. 2001; Neumann 2001 and 2003; West et al. 2006). In Latin America, all these reasons frequently converge within a single protected area, as is the case in the RNJ (Watson and Castillo 2022).

Another central concern with conservation and protected areas brought forth by political ecologists and critical geographers has been the dynamics of power and control associated with the management of conservation projects and the establishment of conservation spaces. Correspondingly, protected areas are theorized as a form of enclosure and fortress conservation with often-pernicious impacts on local people and their access to resources (Neumann 2001 and 2003; Peet and Watts 2004; Vacarro et al. 2013). Robbins (2011) goes so far as to argue that conservation as a concept has always fundamentally been about control, noting that resources and landscapes that are intended to be conserved are political objects subjected to decision-making. This understanding brings to light the stark power differentials that exist between conservation organizations (such as public lands agencies or international NGOs) and local, often rural, communities (Robbins 2011).

Consequently, other work has redirected focus away from centralized conservation strategies like fortress conservation toward smaller-scale community initiatives like community-based conservation (CBC) and community-based natural resource management (CBNRM). In geographical literature, community-oriented resource governance is generally described as both a

practice and a *process* (Kull 2002; Berkes 2007). Barney and Bradshaw (2010), for instance, describe it as the management of local resources by geographically-proximate and limited communities as well as the shifting or devolving of power away from bureaucrats and centers of power and toward local and often indigenous peoples. Numerous meta-analyses and empirical studies have shown that decentralized community resource projects are not only possible (Ostrom 1990) but also effective, associated with positive environmental, social, and economic outcomes when compared to centralized resource management strategies (Ostrom 1990; Berkes 2007; Brooks 2017). A majority of such research on CBC and CBNRM has been conducted with respect to NRM regimes in the Global South; Latin America in particular has received much attention given its vast diversity of resources and ever-increasing number of CBC and CBNRM systems. Research has aptly focused on local (and often indigenous) knowledge in conservation programs for forest and agricultural systems (Delgado-Serrano et al. 2015 and 2017; Ruiz-Mallen et al. 2015). Systems that incorporate involvement from local populations in the management of protected areas are comparatively understudied, but research does show that "community-based conservation projects implemented in conjunction within protected areas often struggle to meet expectations" (Balint 2006).

Many of these approaches – while intended to center communities – often culminate in co-management regimes, given the difficulties associated with sustaining entirely community-based programs (Gammanpila et al. 2019). Although CBC/CBNRM and co-management each seek to give more decision-making power back to local communities and stakeholders, they are highly differentiated in that the latter bridges the gap between centralized state management and entirely decentralized management by promoting a type of 'participatory resource governance' that involves multiple actors at varying scales (central government, regional authorities, local

communities) so that local peoples are not the only actors involved in the management process (Ballet et al. 2009; Gammanpila et al. 2019).

As many political ecologists have noted, participatory resource management strategies are not a panacea and are highly nuanced. Kull (2002), through an analysis of CBNRM in fire management regimes in Madagascar, argues that community-oriented resource governance necessarily involves a restructuring of social groupings and power dynamics that is dependent upon local history and context. This idea, furthermore, problematizes traditional social science understandings of the concept of 'community' by contending that communities are not always homogeneous and instead can be discordant and divisive social groupings (Agrawal and Gibson 1999; Kull 2002; Stone and Nyaupane 2014). Such a notion is notably well-aligned with actor-oriented social-ecological analyses because it recognizes the autonomy and diversity of individuals and groups that exist at smaller socio-spatial scales than the level of 'the community.'

III. Extractivism in Latin America

The study of extractivism maintains an extensive scholarly history. Generally, extractivism is defined as the process of extracting or removing natural resources from the earth that are considered valuable for production and exportation (Acosta 2013). Although this process can refer to the acquisition of terrestrial and aquatic resources like timber, water, and fish, it is most often used to describe the extraction of subsoil resources, particularly the mining of precious minerals and metals. Literature on extractivism, however, is less focused on the geologic, chemical, and physical processes of mineral extraction. Rather, it has historically been concerned with analyzing extractivism as a political and economic strategy, a sociopolitical process, and a form of natural resource governance.

Because mining is a prominent economic model in many Latin American countries and given the profound means by which it has marked the social and environmental landscape of these countries, the region has become a cardinal site for the study of extractivism. The broader context and enduring social and material histories of Latin American extractivism are often emphasized, primarily its political roots in Spanish colonization (Bebbington and Bury 2014; Himley 2018) and massive expansion in the wake of the resource and commodity booms of the 1990s and 2000s (Loayza and Rigolini 2016). In this way, it is widely understood within the existing literature that extractive activities are fundamentally situated within the global market forces and processes of capital circulation and accumulation (Bunker and Ciccantell 2005; Bebbington and Bury 2014; Brand and Lang 2016; Martinez-Alier and Walter 2016; Himley 2018). Economically, then, extractivism is well-framed as a core mechanism of enclaves in Latin America in which mineral goods and their associated wealth produced in one geographic location are exported away from that area and controlled by capital flows at larger spatial scales (Kruijt and Vellinga 1977; Bowles and Veltmeyer 2020).

Examining broader historical and material contexts means that spatial scale must also be taken seriously in extractivism scholarship. Many authors, drawing on the chains of explanation either implicitly or explicitly, have thus acknowledged that extractive activities like mining have inter-scalar linkages and effects on both people and environments. Bury (2008) documents how the interactions between extractive actors at the national and international levels transform rural livelihoods at a local level by increasing produced capital while decreasing natural and social capital. Loayza and Rigolini (2016) further document the 'trans-scalar' impacts of extractive projects by describing that while they generate large revenues at immediate centers of extraction

and at larger scales, they contribute to higher levels of poverty and inequality at the local and regional levels.

Due to the large role and immense power of the state in extractive industries, the framing of Latin American extractivism has increasingly turned to what the literature broadly calls 'neo-extractivism.' This newer form of extractivism most commonly conceived as an approach to subsoil resource governance in which the mining of precious metals is tightly linked to the state (Brand et al. 2016). As such, it is characterized by the explicit extent of the state to promote extractivism as a model of economic development and use the profits generated from mining to increase the material well-being of the country (Brand et al. 2016). Although the concept of neo-extractivism was originally proposed as an analytical tool to apply to more 'progressive' governments in South America, a growing body of research argues that it should be more widely used. There appear to be three overarching reasons for this argument. First, 'traditional extractivism' and neo-extractivism are fundamentally similar in that they both involve the political practice of appropriating and commodifying nature to generate a surplus and increase profits (Brand et al. 2016). Second, an increasing number of governments in Latin America – 'progressive' or not – rely upon mining as a core model of economic development, implying an expansion of the state's role in extractivism on an international level (Brand et al. 2016). Third, as alluded to previously, the material benefits produced by extractive industries are distributed unevenly and frequently result in increased poverty, inequality, and at times violent conflict (Bury 2008; Bebbington and Bury 2014; Brand et al. 2016). The Yanacocha gold mine in the Cajamarca region of northern Peru is exemplar of this claim. As the fourth largest gold mining operation in the world, the mine – owned by the Colorado-based Newmont Mining Corporation – has had highly unevenly distributed impacts on the social and environmental landscapes of the

mountains of Cajamarca (Bury 2008). The extraction of gold in this area has led to numerous instances of violent conflict in the early-mid 2000s, contaminated water sources, and degraded agricultural land. Moreover, it has had uneven consequences for social networks of cooperation, trust, and aid (social capital) within and across communities by increasingly dividing class lines and exacerbating household gender-based conflict (Bury 2008).

Other social science literature on extractivism in Latin America has taken on a direction that seeks to assess the intricacies and efficacy of community resistance and anti-mining activism (Bebbington et al. 2008; Bury 2008; Dunlap 2019; Jaskoski 2020). Insights from these studies have shed light on the conditions and criteria necessary to give communities a voice and the opportunity to mobilize by showing prior consultation for communities by extractive corporations allows for greater mobilization against extraction (Bebbington and Bury 205; Jaskoski 2020). Moreover, they have demonstrated that anti-mining social movements have profound and complex impacts on socio-environmental development trajectories for rural communities, particularly the types of activities undertaken by mining corporations and associated impacts on livelihoods (Bebbington et al. 2008) and the ways in which the state can appropriate mobilization to "serve as an instrument of ecological exploitation regardless of widespread ecological concerns" (Dunlap 2019).

These various approaches shed light on several salient concepts for the purposes of this thesis. First, there is inherent political and economic instability within extractive spaces given the dynamic and often volatile nature of global market forces and export-based economies. Secondly, the many actors involved in extractive industries – state governments, regional authorities, national and transnational corporations, and communities – are not static 'things', but rather dialectic in nature and have values, motivations, and goals. Many of these actors, as such,

are also inherently internally contradictory - both in terms of their political and institutional purposes and in terms of the numerous and varying individuals of which they are constituted.

IV. The production of protected and extractive spaces

An important direction that political ecological literature on natural resources has taken is rooted in the understanding that nature and space are not simply absolute, material, and physical but also dialectic and socially produced. This tradition stems from the work of various social theorists, often drawing heavily on Marx. Henri Lefebvre's seminal work *The Production of Space* (1991) is arguably the most influential writing in this realm, representing one of the first and most comprehensive accounts of how space is produced and reproduced through processes of social interaction and interpretations of those interactions. In differentiating between physical and social space, he defines how social space is produced through the interactions of a 'spatial triad' of three distinct types of space: spatial practice (perceived space), representations of space (conceived space), and representational space (lived space) (Lefebvre 1991). Spatial practice is the real, material, and perceived world in which we live and which we perceive through our senses (what is seen). Representations of space, which he argues is the 'dominant' space in society, refers to how we discursively think about and understand space (what is thought). Representational space, finally, refers to the lived experiences and social interactions of people who interact with and within a space (what is experienced or felt) (Lefebvre 1991). The dynamic interactions between these three types of space complete what Lefebvre considers the 'produced social space', where the physical world is continually shaped and reproduced as social actors interact and make claims to appropriate and control space (Lefebvre 1991).

Lefebvre's work has been in conversation with that of numerous scholars in human and critical geography. Smith (1984) was directly influenced by The Production of Space and

explored in his own research how societies and economies – particularly those that are capitalist – produce space through a procedural logic of markets that is inherently spatially uneven (Smith 1984). Harvey (1982, 1989) has further developed ideas around the social production of space, utilizing a similar dialectical understanding of nature and space. He famously proposed the ideas of the *spatial fix* – which demonstrates how capitalism overcomes its structural shortcomings and crisis-prone tendencies by periodically shifting production to different geographic locations – and *time-space compression* – which claims that Marx's theory of the 'annihilation of time by space' is a consequence of capital accumulation and expansion (Harvey 1982; Harvey 1989). Massey (2003, 2004, and 2005) has analyzed the social production of space as well yet criticizes Smith and Harvey by arguing that an exclusive focus on capitalism and class relations can lead to a kind of 'economism' that overlooks other considerations of power and social position at varying scales. She thus proposed the concept of *power-geometries*, which concerns how spaces are both produced by and produce power differentials through the way in which different actors in different geographical places exercise varying degrees of power and control (Massey 2005).

Such a discussion of how human geography has come to study social space and its production is important in demonstrating how these now-fundamental understandings have restructured the ways that scholars think about systems of natural resource management and conservation. Accordingly, contemporary geographic literature around human-environment relations, particularly within political ecology, has increasingly focused on the social production of both protected and extractive spaces. The social production of protected areas is especially evident when one considers the complex social and political origins of the United States' National Park Service (NPS). A wide array of research has documented the creation of these first national parks as stemming directly from clashing landscape ideologies of capitalist economic

expansion on the one hand and 'wise use' and conservation on the other (Runte 1977); others have illustrated how the public lands and wilderness preservation system reflected a specific political desire to mold and promote a national image and character (Nash 1970; Germic 2001). Given that the NPS had a heavy influence on present-day protected area ystems around the world, scholars have expanded the social production of public lands to broader topical and geographic contexts. West et al. (2006) argue for a general social conception of PAs, maintaining that they represent specific imaged ways of viewing and understanding – and thus producing – nature and are continually transformed by the ways in which social actors and processes interact. In the African context specifically, Neumann (2001 and 2003) analyzes how colonial Britain's imaginary of a 'wilderness continent' transformed Tanzania's landscape through the establishment of Serengeti National Park. In doing so, he pushes a paramount argument that while the social processes of development and those of conservation produce very different landscapes, they are often linked by a shared ideology of power and control.

Use-based and extractive approaches to natural resource management, given their explicit political dimensions and economic pretenses, are also social arenas that produce specific types of nature, society, and space. Like PAs, extractive activities and natural resource-based consumption reflect a specific landscape ideology and vision of how resources should be used, how a landscape should look, and importantly, who 'owns' the landscape (Walker and Fortmann 2003). This conception is in part based on the well-accepted notion that natural resources and landscapes – as well as their conceived spaces or representations – are social constructions that are fundamentally political and contested (McCarthy 2002; Vandergeest and Peluso 2015; Collard et al. 2020). As such, the interactions between various social actors involved in extractive systems can produce novel types of spaces, such as 'ambiguous lands' where

ownership of land is constantly nebulous (Sato 2000) and '(un)governable spaces' where the extraction of resources leads to the continual making and remaking of a territorial-nation state due to the dynamic and volatile relations of power between actors (Watts 2004; Bebbington 2015). When extractive industries are linked to the state, moreover, the politicization and social production of natural resource use are especially instructive. Here, mining represents a particularly useful example. Mitchell (1996 and 2002) states that the production of material landscapes like mining towns is "a matter of ongoing struggle and conflict between different social and economic groups within capitalist networks of violence, inequality, and profit." Martín (2017) elaborates upon this in the Latin American context, claiming that territorial spaces appropriated by state regulation, capital accumulation, and political contestation are continually reproduced and reappropriated "through diverse strategies and actors." Other authors have yet another direction and indicated that the political and discursive mechanisms through which the extraction of natural resources is integrated into a state's development model are rooted in the 'governmentality of imagined development' (Andreucci and Kallis 2017).

For the study of natural resource management from a critical geographic perspective, the differentiation between physical and social space becomes critical and opens the door for the crucial consideration of how the two relate and interact. Theoretically, Massey (2004) – in arguing for greater overall linkages between physical and human geography – has pushed for characterizing physical space as constituted – that is, transformed and produced – "through the social", rather than simply an arena in which the social "takes place." At the same time, though, the physical geography or features of a landscape also have an influence on the social relations that produce spaces. This proposition is consistent with Lefebvrian conceptions of space and

political ecological conceptions of natural resources by emphasizing the dialectical relationship between the physical and the social.

V. Spatial convergences of conservation and mining

As demonstrated, there is considerable existing research on conservation and extractivism that employs myriad theoretical and practical angles. Yet literature specifically concerned with the convergence of these contrasting resource governance systems is relatively lacking. Where it exists, it primarily focuses on spatial distribution trends relating to protected areas (see Durán et al. 2013) and impacts on biodiversity (see Kobayashi et al. 2014). Political ecological analyses of conservation-mining confrontations, on the other hand, are few and far between, but research by Bebbington and Bury (2014, 2015, and 2018) offers an excellent starting point in framing how these dynamics touch down in Latin America in different geographic locations and at varying scales. In their comprehensive collection of studies on the political ecology of extractive geographies in Latin America, Subterranean Struggles: New Dynamics of Mining, Oil, and Gas in Latin America, they analyze the production of 'multiple resource governance frontiers' (Bury and Norris 2014). These frontiers – which exist at the intersection of environmental conservation and mining activity – are inherently contradictory; while on one hand conservation and mining may be similar, theorized as forms of capital seeking new opportunities for accumulation, on the other they represent highly dissimilar forms of resource governance and have very different implications for people and environments (Bury and Norris 2014). Here, the authors argue that the state, the market, and the community are the principal governance actors and are linked by formal and informal rules that shape social-environmental, political, and economic interactions. Understanding these actors' interactions in conservation-mining convergences brings to light the

ways in which such convergences are linked to contests over landscape ideologies, resource governance and access to resources, and livelihoods (Bury and Norris 2014).

However, it is essential to note that this specific conception of actors is not necessarily generalizable. In the case of Junín and Pasco, for instance, the 'state' is represented by both SERNANP and MINEM while the 'market' is only one component of extractivism, considering the political connections between mining corporations and government institutions. This means that a juxtaposition between the state and the market is inefficient and misleading. Moreover, SERNANP (the state) is not the only organization that practices conservation in and around the RNJ, as the NGOs Grupo Rana and ECOAN are cohesively integrated into conservation activities. Thus, for the purpose of this thesis, I conceptualize the principal actors as the state (made up of both the conservation community and the politics of extractivism), mining corporations, and local communities.

VI. Literature on the Junín National Reserve

While this novel type of actor-oriented approach holds considerable potential for political ecological analysis, it has not yet been applied to the convergence between conservation and mining around the Junín National Reserve. In general, scholarship related to the RNJ and Lake Junín is underdeveloped. While the RNJ and its surrounding areas have been the subject of a limited number of studies, such research comes solely from the natural sciences and is primarily concerned with the geologic impacts of heavy metal mining on lake sediment (Rodbell et al. 2014) and maca tissue (Mendoza et al. 2021). However, this is not to say that these studies are not important or relevant here; indeed, they provide a critical background concerning the extent of heavy metal contamination in the RNJ and its potential effects on proximate communities. Rodbell et al. (2014) analyzed the concentrations of heavy metals – copper (Cu), zinc (Zn), and

lead (Pb) – in the upper-level sediments of Lake Junín. They found that the peak concentrations of these materials in upper-level sediments are significantly greater than the U.S. Environmental Protection Agency's limits for the 150km 2 lake basin. Overall, the amounts of Zn and Pb found in upper-level sediments are equivalent to 5.1 and 0.7 years of extraction from the Cerro de Pasco mine, respectively (Rodbell et al., 2014). Such concentrations make Lake Junín one of Peru's most contaminated lakes, and the construction of the Upamayo Dam on the San Juan River, which drains into the lake, has only exacerbated contamination (Rodbell et al., 2014). Mendoza et al., similarly, examined the buildup of Zn, cadmium (Cd), and arsenic (As) in edible tissues of maca, the primary agricultural product of the region around Lake Junín. In the towns of Junín, Carhuamayo, and Ondores the concentrations of these metals exceed the limits set forth by the Food and Agriculture Association (FAO) and the World Health Organization (WHO). Moreover, in Ondores, the cancer risk associated with these metals from the consumption of maca is higher than the acceptable limits proposed by said organizations (Mendoza et al. 2021).

This section has served multiple purposes. First, I have sought to lay the groundwork for a political ecology framework to examine the simultaneous transformations of social and physical space as a result of natural resource and landscape contests. Second, I have demonstrated that although there is an extensive body of geographic literature on conservation, protected areas, and extractivism, most of this work overlooks what happens when these contrasting resource governance strategies converge. Finally, while Latin America may be well-documented, the absence of research concerning the RNJ necessitates the need for social-ecological approach of conservation-mining contests in high Junín and Pasco. Such an angle should be actor-oriented, emphasizing how space is produced, transformed, and appropriated by

the interactions between social actors. It should also take seriously how these spatial dynamics can have real-world implications for resource management and conservation in the RNJ.

CHAPTER III: METHODOLOGY

I. Qualitative interviewing

This thesis, which is at its core a social-ecological case study, employed primarily qualitative methods of analysis. Political ecologists have long used ethnography to examine the chains of explanation of how broader social, political, and economic forces touch down in localized geographic areas (Blaikie and Brookfield 1987). However, because this thesis is the culmination of a 2-year research project with comparatively limited time for fieldwork, a truly ethnographic methodology could not be utilized. Accordingly, in order to best engage with my research questions ("How does conservation produce space around the Junín National Reserve?"; "How does mining produce space around the Junín National Reserve?"; "How are these spaces co-produced and what kind of impact does this have on natural resource management?") dialogical data – one specific aspect of ethnography – was generated through conducting interviews with resource managers, resource users, and other stakeholders who directly engage with Lake Chinchaycocha. Between May 21st and June 10th, 2022, 21 semi-structured interviews were conducted with a total of 22 participants (see Table 2 on the following page) on the ground in Junín and Pasco. Conversations lasted between 27 and 82 minutes, with an average time per interview of 50 minutes. Of these interviews, 16 were conducted in person while five were done virtually through WhatsApp or Google Meets voice and video calls. These interviews were recorded, transcribed, translated to English, and then coded to discern important themes and extract meaning.

	SERNANP	NGOs	Communities	Government authorities	Corporations
Total	**4**	**4**	**9**	**3**	**1**
Junín	4	4	5	1	0
Pasco	0	0	4	2	1

Table 2. Breakdown of interview participants by category and region

Qualitative interviewing is commonly used in critical social sciences like political ecology and human geography. There are generally two principal components of these critical qualitative methodologies. The first is a normative value orientation, in which a researcher makes the fundamental assumption that contemporary society is wrought with injustice and that research should seek to support positive change (Carspecken 1996; Mason 2002; Robbins 2011). The second facet is a critical epistemology in which researchers maintain that (1) knowledge and thought are power-laden, (2) facts can never be separated from values, and (3) symbolic representations of events and experiences are not solely corresponded to 'objective reality' but also to the social relations which influence that reality (Mason 2002; Kelly 2011).

Qualitative interviews with human subjects are well-suited for my study for two main reasons. First, qualitative interviewing maintains that actors' relations and experiences are a legitimate representation of social reality (Warren 2002), meaning that tapping into such items allows for an understanding of how space is affected by interactions among actors. Second, qualitative interviewing allows for data to be gathered and analyzed in a way that considers both the researcher's positionality and the individual experiences of research subjects (Mason 2002). A critical qualitative dialogical approach, as aforementioned, allows for situating such experiences within broader trends to produce a variety of explanations. It further places special emphasis on the epistemological inseparability of power and knowledge, a critical consideration

given the differential levels of political and economic power wielded by the numerous actors associated with resource management and environmental decision-making in high Junín and Pasco.

There are three types of qualitative interviews that exist within the social sciences – structured, semi-structured, and unstructured. Structured qualitative interviewing entails the creation of a strict interview guide that a researcher utilizes and from which they do not deviate. If done properly and if a researcher has a very comprehensive interview guide, this can be useful in targeting the specific phenomenon or topic of interest, but it also does not allow a researcher to probe or explore additional themes (Kelly 2011). Unstructured interviews, on the other hand, are those in which no interview guide nor any specific questions are prepared by the researcher; instead, they flow more like a casual conversation. This means a researcher can frequently probe participants in order to obtain the most detailed information possible, yet it also means additional follow-up interviews will be necessary (Kelly 2011).

For the purposes of this thesis, I used the semi-structured interview. This form of interviewing utilizes an interview guide but does not always follow it in every circumstance, meaning the researcher is afforded a practical balance between having a guiding structure and the flexibility to probe participants for additional details regarding important information or insightful comments made throughout an interview (Kelly 2011; Galleta 2013). Semi-structured interviews have also proved well-suited for the time frame of a 2-year thesis, as they minimize the need for many or frequent follow-up interviews by letting the researcher focus on gathering the most necessary information needed to answer the research question(s) (Galleta 2013).

II. Participant selection and recruitment

My research's actor-oriented approach was utilized in order to recruit initial participants and frame the interviews. I began by conceptualizing the main actors as state entities, mining corporations, NGOs, and Reserve-adjacent communities. Within each of these actors are sub-actors of which they are made; for instance, the state is composed of multiple institutions such as SERNANP, the National Water Authority (ANA), and the National Agency of Environmental Assessment and Enforcement (OEFA). Each actor and sub-actor shapes environmental decision-making and social relations in its own way, making this approach uniquely positioned to answer questions of space.

From my initial contacts - which included SERNANP park rangers, NGO conservationists, and various community members - a large number of new participants were recruited using snowball sampling, a method used to find new respondents by leveraging existing contacts (Noy 2008). I ended each interview by asking participants if there was anyone, they know who is especially engaged in the subject matter and/or would be interested in speaking with me. This method proved invaluable for two overlapping reasons. First, many key informants, such as sitting members of the Lake Chinchaycocha Environmental Management Committee, were recruited this way. Secondly, I was exposed to and able to contact important stakeholders with whom I would not have been able to meet otherwise, including representatives from Electroperú S.A.

Other participants were recruited through participating in capacity-building exercises and workshops, including a SERNANP-led workshop on forest fire prevention and mitigation in Carhuamayo, Junín, and secondary school student monitoring of the Junín giant frog, run by representatives from the NGO Grupo Rana. Most notable, however, was a three-day workshop

for the conservation of the frog, organized and facilitated by representatives from the Conservation Planning Specialist Group's Mesoamerica team, which took place in the community of Huayre, Junín from June 3rd to June 5th, 2022. These events also proved to be a valuable experience in furthering my understanding of what individuals and organizations are involved in conservation projects around Lake Chinchaycocha and how they interact with one another.

In total, I conducted 20 interviews with 21 individuals between May 21st and June 10th, 2022, with an average time per interview of 50 minutes. Of these interviews, 16 were conducted in person while 5 were done virtually through WhatsApp or Google Meets video calls. All interviews were conducted entirely in Spanish. After each interview, an MP3 file of that interview was uploaded to a password-protected external hard drive. Text transcriptions of interviews, which were done during the month of June 2022 upon returning from Peru, were stored on this same hard drive.

III. Interview protocol

As the interviewer, my primary role was that of a facilitator (Kelly 2011). My own participation, outside of asking interview questions, was characterized by a mixture of bland encouragement, active listening, non-leading leads, and varying levels of inference paraphrasing depending on the subject and setting (Kelly 2011). The purpose of these various types of responses is to facilitate a natural conversation and draw out important insights from subjects while also making the process as comfortable, non-threatening, and democratic as possible (Mason 2002; Warren 2002; Kelly 2011).

Drawing upon protocols proposed and outlined by qualitative researchers, mainly Mason (2002) and Warren (2002), I organized my interview process by breaking down my main

research questions into sub-topics - sometimes called ‘topic domains’ - each with its own list of smaller questions. In interviews, these topic domains each contained (1) a lead-off question, (2) a list of ‘covert categories’, or a list of items I wish for interviewees to touch upon during conversation, and (3) a list of possible follow-up questions to be asked. Examples and copies of my interview protocols can be found in Appendix A. Using semi-structured interviews was especially useful in this study because, other than the main lead-off questions, interview guides were intentionally differentiated by participant based on their role and/or positionality vis-a-vis Lake Chinchaycocha and the RNJ.

IV. Primary data analysis

All interviews were recorded using a recording device and transcribed using Sonix.ai, a voice-to-text software. From there, I translated the interview transcripts from Spanish to English in order to prepare them for analysis. Online translation devices or services, such as Google Translate, were not used as these applications are notorious for producing inaccurate translations and are unable to account for local and regional language variations or vernaculars. Instead, a two-part process was utilized in order to strike a balance between the time consumed translating and the production of accurate translations. First, interview text files were translated using Microsoft Word’s translate function, which is more accurate than online services. Then, to ensure accuracy and take into consideration the Peruvian cultural and linguistic context, I manually reviewed the English transcriptions while listening to the Spanish MP3 recordings to make edits and clarifications where necessary. Specific notes were made in the English transcriptions - as well as throughout the results and discussion sections - if and when translation discrepancies arose in order to clarify such differences between Spanish and English (i.e., sub-national and regional *jergas* [jargon or slang] or common phrases/sayings).

Qualitative interview data does not automatically present results by virtue of existing; findings and results instead must be analyzed deliberately in order to identify important themes that specifically address the research question(s) (Linneberg and Korsgaard 2019). There are many methods of analyzing qualitative interview data, but coding is often the most appropriate for research in political ecology and critical geography. Coding is a process of systematically categorizing excerpts from interviews – a word, a phrase, a paragraph, etc. – with a word or short phrase (a code) that symbolically summarizes that excerpt in relation to the research topic and questions (Linneberg and Korsgaard 2019). The purpose of this process, therefore, is to pull out themes and patterns that can then be structured for meaningful analysis.

Coding is critical in analyzing dialogical data as it promotes proper data management and organization and ensures the validity and transparency of a researcher's methodology (Denzin and Lincoln 1994; Linneberg and Korsgaard 2019). Furthermore, it is well-suited for political ecological analysis in several ways. First, as previously mentioned, it allows the interviewer to engage in an effective content analysis by easily drawing out keywords, phrases, and themes from interviews (Denzin and Lincoln 1994). Second, in doing so, it centers the voices and experiences of research subjects (Denzin and Lincoln 1994; Linneberg and Korsgaard 2019). Coding as a method of dialogical data analysis can therefore meaningfully and effectively accommodate a wide variety of perspectives, understandings, and knowledge within a social-ecological system.

After all interviews were fully transcribed and translated into English, I began the coding process by reviewing the English transcriptions and assigning appropriate codes to corresponding responses using the qualitative data analysis software NVivo. Responses were then able to be organized and viewed by the codes with which they were associated, offering me

a powerful way to identify patterns and draw out (perhaps hidden) meanings. A list of codes that I created and utilized in the coding process can be found in Appendix B.

V. *Secondary data analyses*

Supplementary methods were used to supplement my interviews and offer a more robust analysis, which is particularly useful in the context of social-spatial studies. The foremost of these secondary data analysis methods was the use of the Environmental Systems Research Institute's (ESRI) geographic information systems (GIS) software ArcGIS Pro. While conducting interviews on the ground in Peru, I used ArcGIS Collector to gather points (GPS coordinates) where there is infrastructure relating to the RNJ. Such infrastructure includes touristic points like scenic overlooks and promotional signage, navigational infrastructure like directional signage, and administrative infrastructure such as SERNANP offices and interpretive centers. The objective of collecting these points was to offer visual representations of how space is conceived and used around Lake Chinchaycocha. This served primarily to demonstrate socio-spatial patterns in the context of the RNJ as a natural resource governance regime, physically and visually illustrating the unevenness of conservation resources across the landscape (see Figure 8 on page 98).

Another secondary data analysis technique utilized in my research was an archival analysis of documents from various Peruvian government agencies and mining corporations. Brooker and Chandola (2021) state that data archives provide rich and expansive sources of information for researchers that. In the social sciences, this type of analysis is similar to the coding in that the researcher examines language to track and extract themes; the difference, however, lies in that archival analyses do so for existing sources and do not utilize interviews (Secor 2013). The purpose of conducting archival analysis was to supplement information

gathered from interviews – in which topics may have been discussed differently given my presence as an outside researcher – and to fill any possible gaps from those interviews. This proved to be an important facet of my research to further understanding of how the Peruvian state – namely entities like SERNANP, OEFA, and MINEM – and mining companies publicly portray their respective roles, activities, and cooperation (or lack thereof) with regard to Lake Chinchaycocha and the Junín National Reserve. Coupling these insights with those from my interviews allowed for a more meaningful analysis of their perception of and role in the socio-spatial relationship between conservation and mining activities. Documents reviewed include: (1) environmental impact (EI)/environmental assessment (EA) reports from mining companies such as Nexa Resources S.A. and Volcan S.A.A.; (2) master plans for the Junín National Reserve Management Committee; and (3) master plans for the Lake Chinchaycocha Environmental Management Committee.

CHAPTER IV: RESULTS

The following chapter presents the results of the interview process by analyzing conversations with 22 individuals between May and June of 2022. Participants came from a diverse array of vocations and backgrounds, including conservation and public lands management, government, agriculture and ranching, energy resource management, transportation, health care, and education. What connected each interviewee was a place attachment to the Junín National Reserve and Lake Chinchaycocha in either life, profession, or both. Only four of the 22 participants do not live in the area full time, but these individuals still spend extensive amounts of time around the RNJ for their work, often staying in the area – either in local lodgings or in rented rooms in locals' homes – for weeks at a time.

Interview results are divided into three subsections based on participants' experiences with and understandings of (1) the RNJ and Lake Junín, (2) metal mining in high Junín and Pasco, and (3) how these two resource management approaches interrelate. Within each of these three topics, there are multiple themes and key points that arose from the interview process. A discussion of these results applied to the theoretical framework associated with the research questions can be found in Chapter 5.

I. Perceptions of the Junín National Reserve and Lake Junín

Overall, interviewees held the Junín National Reserve and Lake Junín in high regard, perceiving the area as a special and unique place. The assignment of such importance stems from numerous environmental, social, cultural, and historical sources. Ecologically, participants frequently noted the fragility of the alpine landscape of Lake Junín as well as the uniqueness of its endemic species, primarily the *rana gigante* and *zambullidor*, which are not found anywhere else in the world. For conservation practitioners, the protection of these species has become an

integral facet of managing the RNJ; one participant (P18) stated that their goal is to preserve the *rana* as an "endemic" and "representative" amphibian while another (P10) claimed they are trying to "protect the life of the *rana*." Even those not directly entrenched in the conservation sector expressed a strong commitment to these species, highlighting the emotions and history that are wrapped up in the Reserve's conservation goals. One local government authority (P12) from a Reserve-adjacent town stated that the *rana* is "unique to us" (read: them, as in people who live around Lake Junín) while another participant (P20) noted that learning about and working to save both the *rana* and the *zambullidor* "makes me proud." Lake Junín's *bofedales* (Andean wetlands) were also frequently mentioned by interviewees as a point of ecological importance, given that they are highly productive ecosystems that store carbon, conserve a large amount of water, and are home to myriad terrestrial and aquatic species. This importance has been long recognized, with Lake Junín being identified as a Ramsar site in 1996 (stemming from the Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat). As such, SERNANP employees and NGO representatives interviewed frequently discussed conservation activities that concern the state of the *bofedales,* such as wildlife monitoring, soil restoration, and water quality assessment. One conservationist (P3) noted that Lake Junín´s wetlands are the site of a majority of restoration projects, as they are "ecosystems that experience rapid recovery." The symbolic assigning of such ecological importance to these species and ecological features has transformed them into what can be described as "flagship species" or "flagship landscapes" for both state and non-state conservation efforts.

For other participants, however, attachment to the landscape and its species transcended 'ecology' and was often derived from notions of cultural and ancestral heritage, as many people who live in Junín and Pasco can trace their lineages in the region back centuries. As such, many

community members like ranchers, healthcare workers, and educators attached themselves less to the RNJ as an administratively defined protected area and more to Lake Junín as a geographic feature. Given that the RNJ was established in 1974, many interviewees remember a time – either themselves or through stories from their families – when Lake Chinchaycocha was not considered 'public land' but rather a 'commons.' One rancher interviewed (P7), for instance, mentioned that their parents utilized resources of Lake Junín and its *bofedales* before the RNJ was created by hunting wild *cuy* (guinea pig) and gathering eggs from the many species of birds that inhabit the area. The creation of the RNJ, then, constituted a profound shift in social-environmental relations for the communities around Lake Junín. The aforementioned rancher (P7) noted how SERNANP subsequently "eliminated hunting, entry to the Reserve, and gathering eggs." As a result, there is a marked difference in perceptions of the RNJ between these resource users and resource managers such as SERNANP employees and NGO conservationists. While there seemed to be greater emphasis placed on social and cultural connections to the landscape by resource users, interviews with managers, in contrast, illuminated that they understand this relationship through the lens of ecosystem services: a source of biodiversity, a vast majority of Peru's water and electric energy, and countless local and regional livelihoods.

> *"Environmentally the Reserve is extremely important. It supports not only the region, but the whole country, for two reasons… or three. The first: water. It is one of the main sources of water, and in a country that suffers from an increase in aridity, there is little water and where there is there are conflicts over water. The second thing is that the Reserve stores water for the generation of electrical energy, almost 1/4th of the energy required by the entire country. And the third is that it's a source of economic development for the population. Livestock, water for agriculture, trade, tourism are things that are important for the local population."*
>
> - P3, NGO representative

> *"Another important aspect of the Reserve is ecosystem services, like climate regulation. These are issues related to water sources, water purification, and carbon capture, because wetlands are the main vegetation in this area."*
>
> - P18, SERNANP employee

Interviews highlighted that local people place great importance on community use of Reserve space and resources as well. Although there is a long history of local use of Lake Junín before it was converted into a national protected area, residents of Reserve-adjacent towns like Junín, Carhuamayo, Huayre, Ninacaca and Ondores made clear that their communities still heavily use and rely on the RNJ today. These participants mainly mentioned the use of Reserve land for livestock grazing, primarily by cattle, sheep, alpaca, and llama. Ranchers use Reserve lands on rotating basis, however, using higher areas farther away from the lake during the rainy season (January to May) and areas closer to the lakeshore (including the *bofedales*) during the dry season (June to December). These cycles are also dictated by the release of water from the Upamayo Dam. Other uses of Reserve space mentioned include fishing for trout in the lake and its many tributaries, the collection of turf and grasses for construction and fuel, and at times, entry into the Reserve for personal visitation, education, or small tourist activities. A local resident (P2) stated that "practically all the resources at hand have been used [by communities] throughout time."

Such widespread acknowledgment that the RNJ is crucial for local livelihoods has, in part, contributed to a strategic emphasis on community engagement and capacity building on the part of SERNANP and its various state and non-state partners. All SERNANP officials interviewed, for instance, noted the importance of collaborating with local communities. One stated that there are "close institutional work and cooperation agreements" (P18) with communities while another argued that local people need to be present in the "process of

elaboration, execution, and sustainability" (P3) of a given project. There are many examples of these types of projects around Lake Junín, such as co-managed workshops on prioritizing the conservation of the *rana gigante* and *zambullidor*, trainings for local government authorities on how to manage and mitigate brushland fires, and the creation of interpretive centers to educate communities and visitors about Lake Junín. Perhaps most important, however, is the Junín National Reserve Management Committee, a co-management committee comprised of SERNANP representatives, NGO conservationists, local and regional government officials, and various community leaders that meet to discuss management challenges and opportunities for the RNJ and Lake Chinchaycocha. Numerous participants mentioned the importance of the RNJ Management Committee as a tool for both conservation and sustainable development, transforming it into a sort of metaphysical meeting space for local and regional stakeholders to develop and implement specific capacity-building initiatives. A local municipal authority (P12) described how it "helps our protected area [the RNJ] so that better actions can be taken with our strategic allies, from NGOs to the local population itself."

The incorporation of local communities in environmental decision-making around the RNJ, moreover, is fundamentally spatial and place-specific. The Reserve's buffer zone, which surrounds Lake Junín and includes the railway and local communities, was most notable. All conservation practitioners interviewed (7 in total), for example, mentioned the buffer zone in their interviews. Because it encompasses each of the 11 Reserve-adjacent communities, it constitutes a specific place where community-based initiatives are developed. Accordingly, these resource managers viewed the buffer zone as one of the most important zonings within the RNJ; one (P8) stated that "what happens in the buffer zone also affects us in the Reserve" while another (P13) claimed that "it all starts here in the buffer zone." Resource users, however,

viewed the buffer zone as a far more amorphous concept, understanding that their homes and communities are administratively situated within it yet not understanding what that necessarily *means* for them and their relationship with conservationists and the landscape.

> *"The government establishes a protected area as well as its buffer zone, which is like its sponge. It can, let's say, safeguard whatever is inside the protected area. So many of the projects that are established are in the buffer zone."*
>
> - P10, SERNANP employee

> *"I think the Reserve has something called the buffer zone, so I guess that is where there is [agricultural] production and livestock grazing and where people live. So I imagine that area is what people use."*
>
> - P19, local educator

Just as there were notable differences in perceptions of the RNJ and Lake Junín between resource users and resource managers, so too were there substantial differences in the perception of community engagement projects. Conservationists, both SERNANP employees and its NGO partners, continue to promote community-based management approaches and seek to secure involvement from a broad array of community institutions. Although these conservationists understand that there are always improvements to be made, they largely perceived community engagement and capacity-building programs as successful. Yet many local stakeholders interviewed were skeptical of such approaches. Some, like one rancher, even saw them as outright failures and attributed what they perceive as a lack of knowledge about the Reserve to the inability of SERNANP to effectively engage with and train community members.

> *"Our intention is to fairly connect with communities. From what we have seen, we know that one of the main benefits we can provide is awareness. But our interest is also that they [communities] can manage the resources that they have so that they can benefit from that themselves."*
>
> - P4, NGO conservationist

"I think that SERNANP is not like they say they are, they don't diffuse the knowledge that they have to the commoners and so the commoners do not know much about what this entity [SERNANP] does within the Reserve."

- P6, local rancher

This is not to say, however, that there was no agreement. Perspectives on threats to and challenges for the RNJ were significantly more aligned across participants. Most participants mentioned that contamination is the principal threat to the Reserve, a notion that will be discussed in detail in the following subsection. The issue of resource management challenges, furthermore, was framed in a bureaucratic and structural manner by many interviewees. Many were concerned with institutional and resource-based limitations, such as a lack of financial resources and personnel. Multiple participants, for example, (P8, P10, and P18) noted that the disparity between the large administrative size of the RNJ (53,000ha) and the small number of *guardaparques* in charge of monitoring, evaluation, and enforcement (only four) is difficult to navigate. Some recognized the political power that is wrapped up in conservation, such as one participant (P12) who noted that "the decision of a political party or whoever is in office also influences a lot how our resources are managed." And there were others who conceptualized these types of challenges at an even higher scale, expressing frustration and concern with bureaucratic processes - or even outright corruption - that limit effective action.

"The state cannot have eyes in all places to be able to see the entire nation."

- P11, utility company representative

"Sometimes the bureaucracy of our country at the state level is quite, quite heavy. It's cumbersome, since if you want to do anything you have to go through a process that goes to another process that goes through another, and then there's a signature and another signature. And there it stays, for like a year, just to approve a project."

- P16, NGO representative

Moreover, interview responses illuminated a situation of 'quasi-agreement' across stakeholders in which there was significant alignment regarding goals but highly dissimilar opinions on how to reach those goals. When asked "What would the ideal management of the Junín National Reserve look like?" a vast majority of participants stated that a healthy Reserve is the ultimate goal and argued that equitable considerations for local communities should be prioritized. Yet perceptions of what actions should be taken to realize those conditions varied greatly from interviewee to interviewee. Some participants, for example, believed that a broader array of actors and institutions should be incorporated into decision-making processes to consider differing expertise, secure more resources (human, financial, political, or otherwise), and achieve wider support for conservation objectives. On the other hand, other participants felt that bringing more institutions into the issue would only foster gridlock and complicate existing conservation and sustainable development projects. A recurring theme that arose from those who expressed the latter point of view was a concern that actors embedded in specific institutions "limit themselves to what they have to do", to quote an interview with an NGO representative (P14). That is, different institutions (or even individuals) have their own specific goals, creating a situation in which each actor is only focused on that particular goal, which in turn fosters gridlock and stagnation. Another participant (P3) characterized this phenomenon as common in Peruvian bureaucracy, comparing it to horses wearing blinders.

Responses to questions about conservation also saw notable differences between residents of the Junín region and residents of the Pasco region. Overall, interviewees from Pasco expressed frustration with what they saw as both an institutional and symbolic prioritization of the Junín side of the RNJ (and by extension, an underrepresentation or lack of focus on Pasco). Particularly, they took issue with the names "*Junín* National Reserve" and "*Junín* giant frog" as

well as the fact that the SERNANP office for the RNJ is located in the town of Junín and that there is no true administrative structure, office or otherwise, in any town on the Pasco side of the lake. Overall, Reserve infrastructure - such as touristic or directional points/signage and specific access points to the lake - is far more concentrated in Junín than in Pasco. Managers brought up this notion in interviews as well, stating that they are aware of the frustration on the part of Pasco residents.

> *"I feel a bit bad [about the name] because it makes Junín the owner of the names of all the birds and the giant frog… so when I'm in Pasco I say the 'Pasco giant frog'… But how do you change an identity?"*
>
> - P21, local rancher from Pasco

> *"Sometimes those in Pasco don't really identify [with it] when they say 'Junín' National Reserve, because that is the name, it is not just called 'National Reserve.' They say it would be better that it is 'Chinchaycocha' [National Reserve] and that they would prefer it to be Chinchaycocha."*
>
> - P14, NGO conservationist

II. Perceptions of mining in high Junín and Pasco

The interview process unveiled highly varied perspectives on extractivism at numerous socio-spatial scales. These perspectives differed across interviews as well as within individual interviews depending on what particulars were discussed. Certain important commonalities, however, were apparent. Principally, most participants discussed mining as it relates to their lived experience(s) and tangible understandings of and interactions with the extractive sector. Many local people, for instance, have either worked themselves or have family members who work/worked for a mining corporation, such as P6 and P19. Similarly, because all participants either live in or were being asked directly about the RNJ and the regions of Junín and Pasco, they frequently noted or used as examples those mines that are located in proximity to their

communities. Most commonly mentioned were Volcan S.A.A.'s open pit silver mines in Cerro de Pasco, Nexa's exploratory Shalipayco Project outside of Carhuamayo, and at times, the mines that are located in the city of La Oroya further south. These highly personal and localized understandings of mining in the region speak to the ways in which extractivism has perforated everyday life, that is, the very ways in which people exist in the landscape of high Junín and Pasco, and particularly Lake Chinchaycocha. In this way, mining cannot be understood as separate from its entanglements with social life. Rather, it is embedded in local social, political, and economic realities in Reserve-adjacent towns.

Participants also frequently discussed the relationship between mining *companies* and communities, which further illuminates how extractivism has become a significant part of everyday life for people in high Junín and Pasco. Even those who do not have direct personal or familial connections to the extractive sector have in some way interacted with a representative from a mining corporation, such as a public relations specialist or an environmental engineer. Participants characterized these interactions as power-laden relationships that are at times "dramatic" (P16) or "abusive" (P5). Most notably, participants mentioned that mining companies with extractive interests in the area seek to convince – or perhaps coerce – communities by offering resources or gifts when they visit an area for the first time to begin the exploration process. However, the resources provided are often short-term provisions - such as school supplies, toys for children and families, or foodstuffs - and interviewees expressed skepticism about both the intent and impact of offering such items. Numerous participants (P1, P4, P5, P9, P10, P12, P14, and P16) expressed concern or frustration that these interactions do not constitute true corporate social responsibility on the part of extractive companies.

"In almost all places it's the same, when a mining company comes, what they are going to do is gift them [the community] stuff, buy the community a place, or build them something. They say that it's part of their social responsibility."

- P4, NGO representative

"Suddenly, they [mining corporations] will come to a school and give supplies to everyone or distribute food, which is more like welfare than true social responsibility. So it's a pretty dramatic relationship between these mining companies and the communities."

- P16, NGO representative

Yet conversations with participants also revealed that these personal and locally-situated experiences with mining do not exist in a vacuum. Instead, they exist within what can be characterized as a broader *concept* of metal mining. In this distinct conception, participants characterized mining as a matter of national significance – rather than discussing it at an individual, local, or even regional level – given that the extractive sector is so entrenched within the economy, politics, social relations, and history of the country as a whole. This was most often presented in terms of the role that mining plays in Peru. When the conversation first turned to the mining industry, most interviewees noted the significance of metal extraction in the national economy for the country's socioeconomic development and its connection to the rest of the world. Residents of Reserve-adjacent towns, local and regional government officials, SERNANP resource managers, and NGO representatives alike noted that mining "is a source of job creation" (P2), "is an economic support" (P11), "provides a large amount of budget for the Peruvian government" (P6), and that its primary benefit is "economic development" (P8). While some participants supported these aspects of the extractive sector more, stressing such points regarding increased socioeconomic development and associated possibilities for wealth generation, others assumed a more critical perspective. Interviewees who saw mining in a bad

light cited its social and environmental detriments, such as impacts on human health (P13, P19, and P21), or even directly interrogated its perceived benefits by contemplating associated costs and questioning why Junín and Pasco still experience high levels of socioeconomic inequality and poverty. One participant (P16), for instance, questioned how mining is "supposed to be good and bring development" if it is damaging Lake Chinchaycocha and leaving people without potable water.

There was also considerable nuance regarding the spatial distribution of mining impacts in the region around Lake Chinchaycocha. Most participants mentioned that Pasco is more influenced by mining than Junín, both in terms of perceived benefits and drawbacks. This is primarily due to the locational proximity between the large-scale mining activity in Pasco and the northern sections of Lake Junín. One SERNANP employee (P10), for example, stated that the pollution is more concentrated in the north due to the fact that runoff and tailings flow south via the San Juan River from the open pit mines in Cerro de Pasco. Other interviewees perceived the unevenness differently, however, noting that Junín is comparatively "abandoned" and those in Junín "live at the edge" and are "marginalized" (P8), or that benefits only go directly to the districts where there are active mines (P6). The use of the terms 'abandoned' and 'marginalized' are particularly salient here, as they not only refer to the material conditions of towns around Lake Chinchaycocha (and for that matter, communities all across the *provincia* of highland Peru) but also point to a "mode of governance that produces a certain kind of relationship" (Rasmussen 2015) between rural communities and state and private apparatuses. Such a relationship becomes not about what the state or mining companies do or do not do - or whether they are present or not present - but rather about the conditions under which and the ends for which they intervene. This notion will be explored further in later chapters.

Other differences surrounding the implications of extractivism arose from the interview process as well. Echoing existing literature on gendered perceptions of extractivism (see Jenkins 2014, Brian 2017, and Boudewijn 2022), there were marked differences between interview conversations with men and those with women. More women than men discussed the social and environmental drawbacks of mining for the area and overall, women painted both the processes and systems associated with metal mining in a more negative light than men. The strongest anti-mining language present in the interview data came from female participants, with many questioning the costs of mining (P1) or comparing extractive interests to "a bullet" or "a scavenger" (P9). Multiple women interviewed, further, expressed clear frustration, anger, and even grief throughout conversations – the overall tone of their responses was more emotionally charged than those of male participants. Conversely, male participants were overall more focused on trade-offs and the perceived necessity of mining than women. They more frequently mentioned the economic importance of extractivism, such as its crucial place in Peru's GDP (P10), the "need to produce metals for resources" (P18), and its potential as an "axis of development" (P2). Although these differences reflect existing literature, it must be noted that these dynamics are not a panacea. Boudewijn (2022) notes that, with respect to the Yanacocha gold mine in Cajamarca, Peru, many women were and are in support of extractive activities. More research is needed to explore the causal mechanisms behind the gendered differences expressed in my interview findings, particularly concerning themes of household power imbalances, gendered impacts of development, cultural norms, and gender as a 'performance.'

> *"They see that it costs them their lake, it costs them their health, it costs them their culture, it costs them their economy… and what do they see as a benefit?"*
>
> - P16, NGO representative (female*)*

"They have money, but that doesn't return to us the landscape like it used to be. How is that going to give us back our land?"

- P19, local educator (female)

A crucial discourse unveiled by the interview process was that participants experience mining in the region within a political, bureaucratic ordering of the world. Interviewees saw the processes and outcomes of mining activity through a bureaucratic lens and framed conversations around mining in highly 'institutional' terms. They mentioned specific agencies, organizations, and companies that play a role in the extractive sector, such as the Ministry of Energy and Mines (MINEM), the Agency for Environmental Assessment and Enforcement (OEFA), the National Water Authority (ANA) and Local Water Authority (ALA), the Volcan S.A.A. and its former entity as the Cerro de Pasco Corporation, Nexa Resources S.A., and even the national Congress at times. Most frequently discussed, however, was MINEM, which was brought up in 15 out of 21 interviews and overwhelmingly understood by participants as intrinsically connected to private extractive interests, given that institutional laws require mining companies to "inform the Ministry of Energy and Mines on how its exploitation (read: 'exploration') will be" (P10), particularly through environmental impact assessments (EIA). Other interviewees were more specific and made note of the importance of the Regional Directorate of Energy and Mines (DREM) in Pasco in extractive decision-making for the region around Lake Chinchaycocha, noting that it directly partners with OEFA, ANA, and even SERNANP when necessary. The use of such institutional language to describe mining unveils a major dissonance in the sociality and embeddedness of mining in the region. As previously discussed, participants experience mining in profoundly personal and locally-situated ways - and it can only be understood as inherently embedded in social life - yet at the same time, they abstract themselves from the politics and power of extractivism specifically because decisions around such extraction are bureaucratic,

undertaken by high-level authorities and thus seen as spatially and temporally removed from their everyday lives.

Such a focus on institutions and structures highlights the mulitfaceted relationships that influence how extractive decisions are made. These relations are fundamentally power-laden and perhaps most important is the public-private interface, where state actors at various scales (local, regional, and national) and private extractive corporations encounter one another. Such encounters are indicative of the fundamental connections between the state and private industry in contemporary capitalist arrangements, in which the state's role is to promote economic growth (Collard et al. 2020). During interviews, participants were keenly aware of the power that mining corporations maintain with their connections to the Peruvian government, and they were further aware that such power comes from numerous sources and in a multitude of forms. The financial capital and "economic power" (P3 and P16) of mining companies, for example, was a salient topic among interviewees and was considered to have a direct connection to federal government agencies. One participant (P6) painted a clear picture of the power-laden connection between extractive industries and the state, claiming that since "mining companies pay their taxes to the government, then the government doesn't pressure them as much because it is obtaining very large profits."

The ability of the extractive sector to accumulate massive amounts of wealth and profitable goods – that is financial and produced capital – underscores two other important sources of power for the extractive sector that were discussed by interviewees. First, mining corporations, by virtue of securing such capital, enjoy political power rooted in support from government agencies at the regional and federal levels. For instance, P6 also stated that "mining has a certain manner of government support", while another participant mentioned that according

to government regulations and priorities, “we have to coexist with mining activity” (P18). Second, the temporal power of mining was considered by numerous participants. The origins of extractivism in high Junín and Pasco - and Peru in general - can be traced back centuries to the era of Spanish colonization (Himley 2018) and that fact was understood by participants as giving a level of ‘priority’ or ‘power’ to the mining industry. Two interviewees (P3 and P10) specifically noted that mining corporations in the area have pre-existing land rights that predate the creation of the RNJ. The Cerro de Pasco Corporation (which is now Volcan S.A.A.), for example, gained control of the mines in Cerro de Pasco more than a century ago in 1903, just a year after its founding (Dajer 2015). Other participants, however, interpreted such temporal power differently, alluding to the hegemonic nature of extractivism in Peru. It is a process and idea - consolidated by-laws, policies, and institutions - that has become socio-politically and culturally normalized in ways that secure its continual linear development, regardless of its ‘historic’ status. As a result, it has become increasingly entrenched within Peru’s political-economic framework over time - equated with economic development and national progress - thus limiting the ability of those affected by it to counter or envision viable alternatives.

> *“I mean, how do you fight against something that's historical, that's been there even before you were born? I mean, how do you fight that?”*
>
> - P16, NGO representative

> *“When one wants to regulate mining, it’s an obstacle since it’s the main economic activity, and you can’t collide with that economic activity. You can fine them, you can do anything, but you cannot stop it. You cannot stop it.”*
>
> - P3, NGO representative

Overall, the discourse surrounding mining presented in interviews illuminated that mining is seen as a fundamentally disruptive process, regardless of whether it is 'good' or 'bad.' These disruptions occur on both a spatial and temporal scale and impact both the biophysical and social landscape of the region. The process of mineral extraction itself changes the land as well as participants' relationships with the land since local people who must "cede their lands" (P19) are separated from their legal and ancestral ties to the area. Tailings produced from the extraction process disrupt Lake Chinchaycocha's water, the ecosystem health of its *bofedales*, and participants' access to and use of water. The Cerro de Pasco mines have also drastically influenced high Junín and Pasco's connectivity with the rest of the country, as large amounts of capital flow out of the region while the Central Andean Railway revolutionizes access to that capital. And lastly, on-the-ground interventions by mining corporations, as done by Nexa Resources S.A. in Carhuamayo, are a socially disruptive process: the presence of mining personnel and the building of new infrastructure profoundly shift power relations within these communities. It is these types of complex socio-environmental disruptions and relations to which I will now turn in the final subsection of this chapter.

III. Perceptions of the relationship between conservation and mining around the RNJ

When interview conversations turned to the nature of the relationship between protected area management and subsoil extractive activity, the foremost topic that arose was the danger that metal mining poses to the RNJ and Lake Chinchaycocha. An analysis of interview data suggests that mining is considered one of the most significant threats to the RNJ. In particular, 18 of 21 participants noted that mining pollution presents a threat to the Reserve while 10 of these 18 considered it to be one of the foremost threats. Moreover, 19 of 21 interviewees mentioned the subject of mining activity and mining contamination before they were specifically asked

about the extractive sector. The frequency of these conversations speaks to the magnitude of the biophysical impacts of mining activity on the Reserve. Further, the depth of these conversations highlights the significant degree to which participants *experience* such impacts and unpack what that means for them, their environment, and their livelihoods. Put differently, there is a dialectical relationship between the contamination of the RNJ and the lives of people who live around it. The ways in which mining pollution affects the biophysical properties of Lake Junín, its wetlands, and its grasslands dictate many aspects of social relations and environmental governance in the area; likewise, social relations and environmental governance as they unfold around the Reserve dictate the attitudes formed and types of decisions made in response to mining contamination.

Specific biophysical impacts of mining on the RNJ mentioned throughout interviews included detrimental consequences for various systems: water quality, lake sediments, soil integrity of surrounding grasslands, and aquatic plant and animal species that inhabit the lake and its wetlands, particularly the already endangered *rana gigante* and *zambullidor*. One of the core problems, noted by multiple participants, is that of contamination of particles and sediments in Lake Chinchaycocha. P11, an energy resource manager, discussed how the water has become "stagnant" as mining contamination concentrates at the bottom of the lake, becoming "like a rock that's just there, contained like cement." At the same time, though, there was widespread understanding that the impacts of mining on the Reserve occur on multiple levels and in interconnected ways. As stated by one resource manager (P4), "[mining tailings] arrive directly or indirectly at the lake… and what that has caused is that a large part of the lake, or at least up to the area near [San Pedro de] Pari, is affected by heavy metals, generating different levels of impacts on different parameters for the lake." In other words, as that participant went on to

explain, it does not only impact the *rana gigante* and the *zambullidor*, nor water quality, nor the health of wetlands. Rather, it impacts all of these components in different ways, which in turn impacts how each one relates to the others: “What it has caused is that all the species die and then the areas [of the lake] that the rivers feed into are no longer fertile” (P4).

As discussed in the previous subsection, there were numerous perceived benefits of subsoil metal extraction or at least a perception of the significant role of mining in highland Junín and Pasco. This discourse, however, was almost always juxtaposed against the environmental costs of mining - that is, mining was characterized as an economic benefit but an environmental loss. One interviewee put it aptly, claiming that mining is “one of the main activities for GDP” but that it “triggers environmental impacts” (P14). In this way, conservation and mining were conceived by participants as what the other *is not*. Further, such conversations were nuanced in that some participants discussed the threat presented by mining *pollution* versus the threat posed by mining *corporations* in different ways, suggesting that people in the areas around the RNJ either consciously or unconsciously divorce mining corporations from the environmental impacts they generate. Consequently, many responses turned toward deliberating how they think mining ‘should be,’ where participants frequently noted the importance of ecological-economic trade-offs and sustainable development. A majority of interviewees argued that mining must be done in an environmentally and socially accountable manner. Many participants explicitly mentioned the idea of ‘responsible mining,’ which one NGO representative defined as “a mining that treats the waste it generates, that has a specific place to be able to store everything, all those chemicals” (P16).

> *“Well, mining is a big development for all peoples, for every country. But we must also become aware that mining is destruction. If you don't do a good job of participatory work or orderly work, in the long run it's going to destroy. So, I believe that no one opposes a*

well-done mining with good engineers, environmental [scientists], geologists and water [specialists]. I believe that [type of] mining could work."

- P15, local bus driver

Just as participants made note of the uneven distribution of mining activity between Junín and Pasco, so too did many participants describe the geographical differentiation of mining impacts. Overall, it was perceived that the northern reaches of Lake Chinchaycocha and the RNJ experience a greater degree of impacts from mining runoff and pollution, and conspicuously so given those areas' locational proximity to Cerro de Pasco and the large-scale mining operations led by Volcan S.A.A. There was also, however, a specific geographic feature that was mentioned by almost all participants when discussing the connection between the RNJ and mining activity: the San Juan River, or *Río San Juan*. Seventeen out of 21 participants mentioned the San Juan River as a site that is illustrative of mining impacts on the RNJ and Lake Chinchaycocha, precisely because it is the main river that feeds into the lake from Pasco in the north. Interviewees explained how mining corporations, either purposefully or inadvertently via spills or mismanagement, dump waste such as tailings and extraction byproducts into smaller nearby tributaries of the San Juan River, which then "joins the San Juan River and converges at Lake Junín" (P5). Furthermore, the symbol and importance assigned to the San Juan River is based in both its materiality and perceptions of it, as well as the relationship between such materiality and perceptions. The deep orange-red color of the river, sometimes called "chocolate" (P5 and P11), was described by numerous participants. Such a conspicuous physicality of mining pollution has then been assigned a socio-culturally constructed meaning through collective, locally-situated knowledge and attitudes of the river; one participant described how it has (in)famously become known as the "Red River" in towns and communities around the RNJ:

"They call this river that reaches [the lake] the Red River. It has been named the Red River because it is totally red in the mine and that's at the root of Lake Chinchaycocha."

- P20, local business owner

Figure 6. The Río San Juan, showing overwhelming evidence of contamination (Juan Carlitos Benito Palacin, Facebook)

The San Juan River is not located within the RNJ as an administratively-defined protected area and yet it flows into Lake Chinchaycocha, carrying with it heavy metal contamination from the mines located near its origins in Cerro de Pasco. In other words, although mining activity does not occur *within* the Reserve itself, it still impacts the Reserve in profound ways. Participants noted this spatial disconnect, with one state resource manager specifically explaining that "mining is something distinct because it's a little further away but it still generates impacts" (P10). Such a situation is exemplary of the fluidity of administrative, cartographically-drawn boundaries: they are arbitrary and linear abstractions of space that are often misaligned with the biophysical processes of the landscapes that they contain. Moreover, it underscores the idea of 'paper parks,' showing how (1) protected areas can sometimes be so only in name and remain 'unprotected' in actuality and (2) place-name distinctions and protected area

status can actually complicate environmental governance, as the contamination of "Lake Junín"/"Lake Chinchaycocha" is evident but the implications that contamination has for the "Junín National Reserve" – with all of its bureaucratic, political, and environmental complexities – are far messier.

Conversations with participants regarding the San Juan River also led to a paramount insight into the convergence of the RNJ and mining activity in the region: the relationship between the two resource governance strategies is almost as much a matter of other types of economic productive activity as it is about subsoil metal mining alone. Specifically, 19 of 21 interviewees discussed the Upamayo Dam and matters of *embalse*/*desembalse* (damming and discharge) during conversations about the nature of the connection between mining activity and the Reserve, making clear that it is impossible to disentangle said connection from the generation of hydroelectric power. Located on the northwestern edge of the Reserve at the confluence of the San Juan River, the Mantaro River (which continues south through the region of Junín into the Mantaro Valley), and Lake Chinchaycocha, the Upamayo Dam was constructed by the then-Cerro de Pasco Corporation in 1932 and according to a representative of the utility company Electroperú (P11), helps generates between 25-30% of the electricity required for the entire country from the Mantaro River. At the same time, however, the dam has caused the San Juan River to back up into the lake, exacerbating the consequences of mining pollution for the RNJ by causing a greater buildup of tailings and other contaminants in the northern reaches of Lake Junín. One local resident (P2) described that when the dam closes it stores more water, which "combines with the waste that mining companies dump" and claimed, "it would be different if the water followed its natural course because the contamination might then be minimal." Furthermore, the Upamayo Dam has wider-reaching consequences for those who live in the area,

as its seasonal discharges are intertwined with livelihood activities. An NGO conservationist (P14) described how ranchers take their livestock lower down the banks of Lake Junín when the water level is low after a discharge event, meaning that their livestock "eat[s] grass that has been contaminated and then people eat those animals as well."

Moreover, there is the issue of the Central Andean Railway, or *Ferrocarril Centro Andino* (FCCA), the second-highest railway in the world. Constructed from 1871 to 1876, the FCCA connects Lima with both Cerro de Pasco and the capital of the Junín region, Huancayo, about 250 kilometers to the south, revolutionizing transportation and trade in central Andean Peru. Conversations with participants illuminated the importance of the FCAA as a critical infrastructural component of both the RNJ and the extractive sector. As already discussed, the FCCA delineates an administrative boundary for the Reserve's buffer zone, in which those lands from the tracks down are spatially defined as the buffer zone by resource managers and users alike. At the same time, though, the development of the FCCA did not only coincide with the rapid expansion of extractive activity in Cerro de Pasco but actually helped drive the onset of large-scale metal mining in central Andean Peru (Cooke et al. 2009). In fact, the northern branch of the railway that extends north toward Cerro de Pasco from La Oroya was originally constructed, owned, and operated by the Cerro de Pasco Corporation in order to transport various extractive resources to and from the coastal port of Callao in Lima, a process that used to be undertaken by llamas and mules (UNESCO World Heritage Centre 2019). This connection between the FCCA and extractivism, moreover, is not unnoticed by participants; one Pasco resident (P21) stated that "mining contamination is a part of the railway, and it gets stronger [read: worse] every week." The Upamayo Dam and FCCA, and particularly their roots in economic development and production, represent the situatedness of highland Junín and Pasco's

conservation-mining conflict. They show that the issue does not exist in a vacuum and is rather just one of many nested spatial scales that are embedded in a broader 'economism' at work in Peru, reducing environmental management and social relations in the region to market logic.

Yet interviews with stakeholders proved that such connectivity between protected area management, extractivism, local livelihoods, and economic production does not necessarily confer effective socio-institutional interfaces between these varying sectors. One of the central themes across all interviews was the extent and nature of interactions (or lack thereof) between actors, both state and non-state, and at varying scales. These conversations contributed to numerous relevant findings. First, formal institutional relationships do exist to manage the Reserve and Lake Junín. Most important are two distinct *comités de gestión* (management committees): the Junín National Reserve Management Committee (CGRNJ) and the Lake Chinchaycocha Environmental Management Committee (CGALC). The former is composed of a President, Vice President, Secretary, Natural Resources and Community Relations Specialist, Sustainable Projects Specialist, Tourism Specialist, Environmental Education and Public Relations Specialist, and Environmental Issues Specialist, as well as numerous other stakeholders without titles. These members are a diverse group of SERNANP managers, NGO representatives, local and district government authorities, and various community leaders such as healthcare professionals and educators. The latter, the CGALC, was established by the Chinchaycocha Sustainable Environmental Management Plan (Plan Chinchaycocha) with the goal of "achieve[ing] the recovery of the quality of Lake Chinchaycocha/Junín and its surrounding [areas] through the development of environmental prevention, control, and remediation actions by government agencies at the national, regional, and local levels, the private sector, and peasant communities settled in the surrounding area" (MINAM 2017). The CGALC

meets monthly in Lima and is composed of numerous actors across many sectors, including representatives from MINAM and SERNANP, regional governments from Junín and Pasco, ANA, OEFA, Electroperú, DREM, and the Regional Directorate of Health (DIRESA).

Second, although mining companies are either invited to meetings or *de facto* incorporated into these committees, there is a pervasive lack of a *de jure* interface between actors in the conservation and extractive sectors. Many participants detailed that there is little to no communication between MINAM/SERNANP and mining corporations; in the case of the CGRNJ, for example, one resource manager (P3) explained that although the spaces exist, mining companies do not attend meetings. And in the case of the CGALC, while mining companies such as Volcan S.A.A. are designated formal roles and responsibilities within Plan Chinchaycocha, it seems that they often do not send representatives to the committee's monthly meetings in Lima. An active member of the CGALC (P17) described how many mining corporations do not attend or are not summoned to meetings, stating that when they are invited "it's normally for something specific… but normally not, mining companies don't go." Interestingly, moreover, a representative of Electroperú (P11) mentioned that they have "no relationship with the mining companies because we are not affiliated with them" but that the CGALC is theoretically a mediator for communication with the extractive sector. Residents of Reserve-adjacent towns, moreover, experience or are at least aware of this lack of interface; one business owner (P20) claimed that mining companies "will not come to anything." Another participant, an authority from a municipality in a Reserve-adjacent town, described how this leads to frustration on the part of community members:

> *"For example, I can tell you, you know what? Look Ailin, you're polluting my lake. And many times Ailin owns the company. 'Yes, but I'm not going.' You're not going to go, not going to send a representative of your company… and you're the one who has the power*

to decide whether or not to do it. So that's what causes discomfort in the communities. They're not always there, those who have the position to make decisions."

- P12, local government authority

Third, interfaces, and particularly those few that do exist between the conservation and extractive sectors, are inherently power-laden. On numerous occasions, participants discussed the ability of mining corporations to do (or not do) what they please. Many interview conversations brought to light the fact that the penalty imposed upon extractive industries for polluting Lake Junín and the RNJ is a monetary fine or citation, which was described by a representative from OEFA (P17), the agency tasked with carrying out such fines, as a normally lengthy process in which the company has a period of time to either fix the issue or respond to the claim. However, participants from various backgrounds expressed concern with that method, problematizing the idea that a monetary punishment on wealthy extractive corporations could be an effective strategy to curb contamination. One resource manager (P3), for instance, explained that OEFA sometimes conducts unannounced evaluations of mining companies, for which the penalty for refusing is a fine that is "cheaper than the fine you would pay if you were caught contaminating." Other interviewees noted the ability of extractive corporations to ignore conservation and protected area management challenges despite their involvement in contributing to those challenges. One SERNANP employee, a *guardaparque* for the RNJ, described the process of interacting with a mining corporation during its mineral exploration phase near the RNJ:

"In the beginning we took the documents, we requested them [the mining company] in the field, we sent them this dissemination material, such as leaflets, we told them that they are within a protected area… and they ignored them and said that they had already started the processes of interventions with the OEFA office in Pasco."

- P18, SERNANP employee

The ability of mining companies to avoid inter-agency meetings and minimize fines, coupled with previously mentioned state support for the extractive sector, once again underscores matters of state abandonment that touch down around the RNJ. Specifically, that the state can promote one form of resource governance while ignoring detriments caused to another is a form of abandonment. Mining is framed and promoted as a critical facet of national progress, but meaningful actions to address the fact that mining tailings degrade the social and biophysical landscape of the area around Lake Chinchaycocha are disregarded. This duality, further, creates a disconnect in which mining is recognized as a principal threat to the RNJ even though it does not take place within the Reserve itself - a collapse of physical space – but increasing regulations on extractive activity is not framed as a viable strategy given the lack of a formal socio-institutional relationship between the conservation and extractive sectors – a stretching of social space.

Lastly, conversations with participants regarding interfaces demonstrated that what limited institutional relationships do exist are further restricted by bureaucratic processes and the fact that organizations and institutions only focus on their individual roles, an idea described as 'horse blinders' by multiple participants. Bureaucratic complications, such as slow project timelines, the necessity for frequent written documentation (*papelito manda*, as commonly said in Peru), and rapid authority turnover in government municipalities were common obstacles discussed throughout interviews. One SERNANP employee (P10), to illustrate, stated that the impermanence of government authorities and political leaders represents a major limitation for the CGRNJ, claiming that constant changes in regional governors, district mayors, local authorities, and presidents of *comunidades campesinas* (peasant communities) "generates a little misinformation and is like going back and starting again without knowledge of how the issue [managing the RNJ] has been handled."

CHAPTER V: DISCUSSION

This chapter seeks to situate findings analyzed in the previous chapter within the theoretical frameworks that have guided this thesis. Using a political ecological approach, the ensuing discussions place particular emphasis on notions of power and hegemony, political economic arrangements, socio-institutional interfaces, and the relationality of space. It must be noted that these analyses utilize a production of space perspective, conceiving space as not only physical and material but also created (produced) and continually transformed (reproduced) through social interactions between individuals, social groups, non-state organizations, political institutions, and economic entities. As with Chapter IV, the chapter is organized in three sections, each with their own subsections. These sections are titled Part I, Part II, and Part III and each pertain to one of the three research questions that frame this thesis:

i. How does conservation activity around the Junín National Reserve produce space?
ii. How does mining activity around the Junín National Reserve produce space?
iii. How do both conservation and mining co-produce space and what impact does this have on resource management for the Junín National Reserve?

A central argument of this chapter, and this thesis as a whole, is that both conservation activity and extractivism in highland Junín and Pasco have extended themselves across a large network of social relations, permeating everyday life and the lived experiences of communities in the region in a way that has become hegemonic. However, as I will explore, these differing imaginaries are locked in a power-laden contest that extends beyond the actual site of conflict. As a result, there exists an ironic relationship of co-production between protected area

conservation and subsoil metal mining: these two seemingly incompatible resource governance regimes serve to continually entrench one another.

Part 1: The Junín National Reserve and the Social Production of Conservation

If space is social, then from a social-ecological perspective protected areas constitute a specific way that social actors – be they individuals or groups – experience, understand, and use the landscape. In the case of the RNJ, conservation (both as a *concept* and a *practice*) has permeated a large web of social relations between many diverse actors, both state and non-state, at different scales and toward different ends. This primarily occurs through three specific arenas: (1) the Reserve's buffer zone, (2) relations between the conservation sector and local communities, and (3) the preservation of the *rana gigante* and *zambullidor* as iconic, representative species. However, as I will highlight, the overall production of conservation is not spatially uniform across the Reserve. As a social process that produces a certain type of space, conservation has uneven social-ecological impacts across the landscape of Lake Chinchaycocha and the RNJ.

I. The buffer zone

Within the global protected area network, the RNJ is distinct in its designation of a *zona de amortiguamiento* (buffer zone) in which eleven local communities are situated. Originally utilized in the management of the U.N. Educational, Scientific, and Cultural Organization's Biosphere Reserve's in the 1970s (Martino 2001), buffer zones are spatially bounded lands adjacent to protected areas that act as a safeguard against negative external pressures, both natural and anthropogenic (Ahmad et al. 2011). Moreover, they are intended to have socioeconomic benefits for people who live near protected areas; Neumann (1997) describes

them as areas where human actions are restricted to those that "maintain the ecological security of the protected area while providing benefits to local communities." In the case of the RNJ, the buffer zone is a land use designation meant to integrate local uses of Reserve space and resources and considerations of historical land tenure into management processes. Usually, however, buffer zones are not considered part of the actual protected area itself; rather, they are an amorphous space situated outside of protected area territories but are still a fundamental aspect of management and conservation practices. For the communities around the RNJ, this means that although they are not physically located inside its administrative boundaries, they are considered - or perhaps *managed* - as part of the Reserve.

Territorially, the buffer zone encompasses just under 20,000ha of land area around RNJ (compared to the Reserve's total size of 53,000ha) and is home to approximately 25,000 people living in eleven communities in the districts of Junín, Carhuamayo, Ninacaca, and Ondores. It extends further away from the Reserve's southern, eastern, and northwestern borders to explicitly encompass the provincial capital of Junín, the Central Andean Railway, and the Upamayo Dam on the San Juan River, respectively. A vast majority of this area is montane grassland and shrubland and, as aforementioned, is utilized as agricultural and ranching land by Reserve-adjacent communities. As such, the principal management considerations of the buffer zone are livestock grazing (specifically sheep, cattle, llama, and alpaca) and *maca* production, since these are the primary livelihood activities for communities. The farms where *maca* is grown and the lands across which *ganaderos* (ranchers) herd their animals have often been owned by local families for years if not multiple decades – long before the RNJ was established. Accordingly, SERNANP seeks to strike a balance between ecological preservation and the accommodation of

livelihoods and culture by honoring those historical land rights while also training landowners in vegetation, soil, and wetland restoration and offering incentives for doing so.

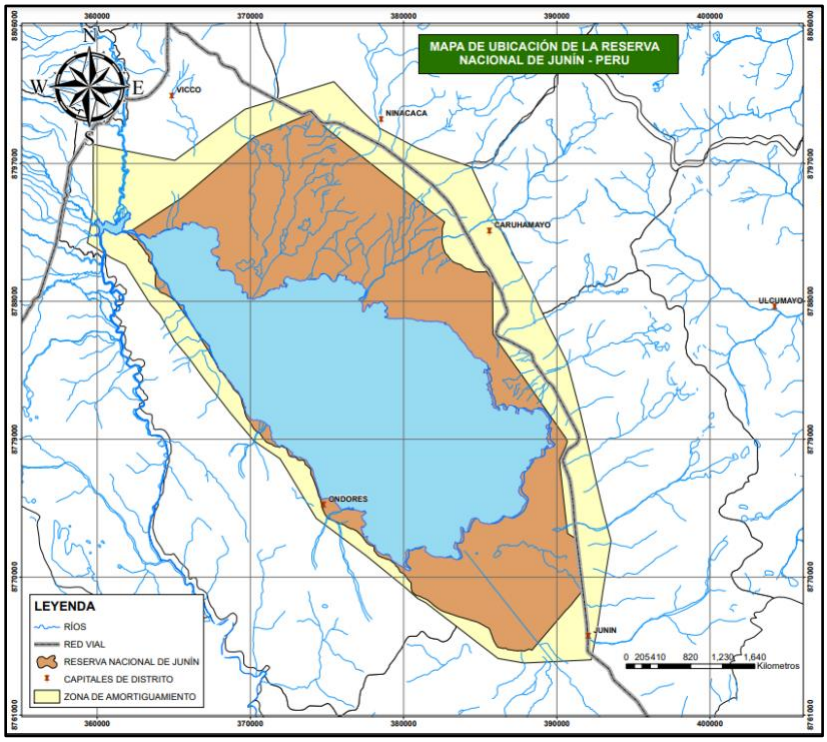

Figure 7. Map of the RNJ's buffer zone (Henry Tinoco Vega, Denver Zoo Foundation)

From a production of space perspective, however, protected area buffer zones are an attempt to 'abstract' space (Lefebvre 1991) by conceiving space as bounded, static, and used only to delineate territory (Roth 2008). In an attempt to move beyond that conceptualization, political ecologists argue for conceiving buffer zones not as a land use designation but rather as social spaces: sites of interaction between different individuals, groups, and institutions. In this sense, they themselves are interfaces, both a physical place and particular moments in time where actors encounter one another. Simultaneously, they are also social-*ecological* interfaces of relationships between humans and non-human nature. In the case of the RNJ, its buffer zone represents a web of social-ecological relations and processes that tie together protected area management and conservation, local livelihoods, cultural and familial traditions, and the land

and water itself. It is an area where conservation and ecological restoration projects unfold and livestock is moved and tended to, the core site of profits generated by selling animal products such as wool, meat, milk, and cheese as well as agricultural products like *maca*, and a cultural space where local people connect with one another, their families and history, and the landscape of Lake Chinchaycocha and its *bofedales*.

But the Reserve's buffer zone should not be characterized as simply an arena where "the social" takes place; instead, as a social space, it is transformed *through* the social (Lefebvre 1991; Massey 2004). The term "the social" refers to social, economic, political, and cultural interactions between actors as well as interactions between such actors and their non-human environment within the buffer zone. This production of space perspective underscores the dialectical nature of the buffer zone, showing that it is dynamic and never secure nor set in time or space. The physical landscape of the buffer zone thus moves beyond being a site of social-ecological interaction and is rather both part of the social world it produces as well as created by social worlds itself (Rasmussen 2015). In the case of the RNJ, its buffer zone is both a *site of* and *produced by* particular interactions and configurations of: (1) people, such as local community members and authorities as well as political institutions; (2) land, namely the montane grasslands and shrublands that surround Lake Chinchaycocha; (3) water, as in Lake Chinchaycocha itself but also its many tributaries and the *bofedales*; and (4) animals, like the *rana gigante*, *zambullidor*, *gallineta negra*, and *cuy*. Furthermore, these arrangements are far from static. They can assemble at different places within the buffer zone, at different moments in time, or across different periods of time, and with myriad permutations of human and non-human actors.

If the Reserve's buffer zone is both an interface of and produced by social-ecological relationships, then it is an inherently political terrain because the ways in which different actors

interact with one another are often power-laden and uneven. The politics of the buffer zone is centered around both resources and decision-making power, concerning questions about access to and control over Reserve resources, the extent to which local land rights are honored, and the security and sustainability of rural livelihoods. In another sense, though, interactions between buffer zone stakeholders are more than a struggle over decision-making power and resources - they are also a struggle over meaning. In other words, the buffer zone can be understood as a space of both contested land and contested forms of meaning-making (Nygren 2004). It is a constellation of multiple imaginaries in which myriad stakeholders with different identities, values, and visions – ranchers, farmers, educators, SERNANP resource managers, NGO conservation practitioners, and local and regional authorities – construct and assign particular meanings for both the purpose of the buffer zone and the many Reserve resources that comprise it. In this sense, the buffer zone itself can also be conceived as an imaginary, at times harmonious, and at times conflicting and volatile.

One of the principal relationships that shape the RNJ's buffer zone are interactions between resource users from the eleven Reserve-adjacent communities and resource managers like SERNANP employees and NGO conservation practitioners. This is because the buffer zone is where a majority of conservation-related community engagement, capacity building, and co-management programs materialize. For instance, one resource manager (P14) discussed that environmental education initiatives with schools located in Reserve-adjacent communities are almost exclusively concentrated within the buffer zone. As such, the buffer zone embodies an often contested space of state-community relations. Neumann (1997) writes of this notion, arguing that protected area buffer zones represent an expansion of state authority into rural areas which 'collapses' geographical space (see Harvey 1982 and 1989) between communities and

hubs of centralized power, particularly those that are located in far-off locales. This idea highlights that social spaces are the product of interactions between actors both near and far, and raises questions of state abandonment - or lack thereof - within conservation regimes. In the RNJ's buffer zone, the expansion of state authority touches down in the form of laws and norms imposed by SERNANP and MINAM that regulate and restrict certain activities within the buffer zone. Such infiltration of the state is experienced by local community members, particularly ranchers, and farmers; one rancher (P7), for instance, detailed how SERNANP has prohibited hunting *cuy* and extracting bird eggs as well as the collection of *champa* to be used as fuel for heating in locals' homes. These activities are prohibited as they are seen as detrimental to the physical and ecological integrity of the Reserve and also not considered to be the "main" form of livelihood for Reserve-adjacent residents, particularly when juxtaposed against the prominence of livestock ranching and *maca* farming.

While conceiving buffer zones as an expansion of the state serves as a powerful starting point in understanding the politics of the RNJ's buffer zone, the RNJ is unique in certain ways that set it apart from other cases. First, the line between "the state" and "the community" is blurred in the areas around Lake Chinchaycocha, as SERNANP managers and *guardaparques* as well as municipal government authorities are also local residents (this idea will be developed in later sections). Secondly, in matters of conservation, the term "the state" is totalizing and ultimately unrepresentative of the RNJ's context given that the Reserve's NGO partners Grupo Rana, ECOAN, and Denver Zoo are almost entirely integrated into SERNANP's management structure, projects, and budgeting. As I will discuss in forthcoming sections, the concept of "conservation-community relations" thus proves more useful and explanatory of the nuances of protected area management for the RNJ. The power of the state should not be understated,

however. Rather, these points of difference serve to underscore that the politics that unfold throughout – and ultimately transform – the RNJ's buffer zone is messy and highly nuanced. They show that in Andean Junín and Pasco, the state can take many forms to direct the production of conservation space in different ways, different places, different moments in time, and toward different ends. Such variability of how, when, and where the state manifests means that the Reserve's buffer zone can be both a marginal space neglected by authorities and managers as well as a politically elevated space that experiences large-scale intervention by hubs of power. Cligget (2014) describes this as variable cycles of alienation and access that unfold specifically within protected area buffer zones and thus describes buffer zones as chronically 'liminal' - that is, in a constant state of transition.

Another important process that transforms the Reserve's buffer zone is various dialectical configurations of people and animals. Because the RNJ's buffer zone was specifically established to account for local livelihood activities, one of the foremost human-animal relationships that unfold within it is that between people and livestock animals such as sheep, cattle, llamas, and alpacas. This human-livestock nexus is a primary mechanism by which space is dynamically produced through the Reserve's buffer zone, as *ganaderos* move their animals to different areas within the buffer zone at varying temporal instances and scales. As described by ranchers who were interviewed in the field (P1, P6, P7, and P21), animals are taken out early in the morning to graze on the grasslands and wetlands that surround Lake Junín and taken back up to ranchers' homes or properties in the afternoon and early evening to be put in corrals overnight. However, this co-movement of humans and animals is seasonally differentiated throughout the year as well. As discussed in the Results, ranchers herd their livestock closer to the lake's edge during the dry season when the Upamayo Dam is storing (rather than releasing) water. This

movement of people and livestock, furthermore, represents a simultaneous socio-cultural and economic relationship. By herding and tending to their animals, ranchers are embedding particular familial and ancestral values within the buffer zone as well as pursuing material benefits - by selling animal products - that allow them to sustain their livelihoods, and by extension make claims to space and resources within the buffer zone.

Land-owning ranchers are not the only people who interact with livestock within the buffer zone, though. If the buffer zone is an interface between resource users and managers, then there are also important relationships between *conservationists* and livestock that play out there and contribute to its production. These relationships, however, are distinct from those between ranchers and livestock for multiple reasons. First, resource managers, while perhaps possessing *knowledge* of the deep cultural ties that people in highland Junín and Pasco have with their animals, do not own these animals themselves and thus do not experience those ties in the same way. Second, relationships that resource managers maintain with livestock are not physical or material but rather mediated through their interactions with ranchers who own the animals, transforming livestock animals into political agents of change that both impinge upon social struggles and are transformed by how such struggles unfold (Robbins 2011). Because of this, the conservationist-rancher relationship is a complex and contentious one marked by misunderstanding, contention, and at times outright animosity. Resource managers find sheep, cattle, llamas, and alpacas to be destructive to grasses and soil and thus conceive them as oppositional to the buffer zone's purpose of maintaining the ecological integrity of the Reserve. Consequently, these managers have sought to educate ranchers on ways they can mitigate overgrazing or at times even implement spatial or quota-based restrictions on grazing in the buffer zone. However, *ganaderos* around the RNJ often perceive these projects in a negative

way, arguing that SERNANP employees and non-state resource managers are impeding upon their ability to pursue their livelihoods.

> *"The problem, then, for example, is overgrazing and over-trampling… the large number of cattle on a piece of land, right? The rancher wants to have a lot of cattle to be able to make more money and be able to live."*
>
> - P3, NGO conservationist

Sheep, cattle, llamas, and alpacas are not the only animals within the Reserve's buffer zone that serve to produce social space, however. The relationship between people and the RNJ's wildlife vis-a-vis the buffer zone is another crucial nexus. Most notable is the Reserve's birdlife, particularly the *zambullidor* but also the *gallineta negra* (black rail) and *parihuana chilena* (Chilean flamingo). Outside of Lake Junín's avian species, moreover, the *rana gigante* is a symbolic animal around which there is a large pool of both locally-situated and scientific knowledge. Although not all are found physically within the buffer zone (i.e., the *zambullidor*), these species influence the production of conservation space by way of their relationships with human actors and institutions within the buffer zone: differing knowledges surrounding them, symbolic meanings attached to them, and the social relations that unfold in how they are managed and preserved. In this way, just like livestock animals, these species are also political entities (Robbins 2011) that both implicate and are implicated through social interaction (this notion will be expanded upon in ensuing subsections).

Overall, the RNJ's buffer zone plays a critical role in the production of conservation space around Lake Chinchaycocha. While it is itself constructed, it also plays a vital role as a central space and time for the making of other social-ecological forces at larger scales, which then bleed outside the buffer zone to the rest of the Reserve. As previously noted, two of the most important processes that begin in the buffer zone are the community-conservation

relationship and the preservation of symbolic fauna. The following subsections will discuss these two processes in greater detail, considering how they transform space and fuel the hegemony of protected area conservation across the region.

II. The conservation-community interface

Because an integral facet of SERNANP's objective in the RNJ is "the support of socioeconomic development in the region" (Shoobridge 2006; SERNANP 2021), the Reserve fundamentally rejects the human-nature dichotomy by connecting people to the landscape and vice-versa. The means by which this occurs is through interactions between people and institutions embedded within the conservation sector and people and institutions from buffer zone communities. As aforementioned, the way this relationship is often defined in other geographical contexts - as one between "the state" and "the community" - is not applicable to the case of the RNJ. For highland Junín and Pasco, and particularly in matters of conservation and resource management, the concept of "the state" is messy and nuanced for two reasons: (1) SERNANP resource managers and state authorities in the region are local residents as well, meaning they are not exclusively "state" or "non-state" actors, and (2) NGO organizations who work with the Reserve are institutionally and socially integrated into protected area conservation. I will thus use the term "conservation-community interface" or "conservation-community relations" to characterize the unique social-ecological interactions that take place within and around the RNJ. Conceptualizing the relationship between the conservation sector and local communities as an interface highlights a few noteworthy points. First, it recognizes that there is not one single actor associated with "conservation" or "community" – rather the relationship between these spheres is composed of a plethora of stakeholders that often overlap. Second, and similarly, it recognizes that the notion of "community" is not an ontological given: communities

are not, as often depicted, harmonious and homogenous but can be "contentious, unstable social groupings" (Kull 2002). Thirdly, the interface between conservation and the community is intrinsically power-laden and uneven; this is because it is contingent upon the intersection of different knowledges that are embedded in social relations of power between multiple, overlapping stakeholder groups (Rasumssen 2015). And finally, conservation-community relations are neither stagnant nor static but rather fluid and dynamic, capable of assuming many forms since there are many possible permutations of different individuals, groups, and institutions.

With these understandings in mind, the conservation-community relationship around Lake Chinchaycocha touches down in diverse ways. It foremost manifests as co-management and public engagement programs undertaken by SERNANP and its NGO partners. There are many such programs, which cover a wide variety of natural resource management and conservation topics, including grassland management such as the sustainable use of *champas* and soil restoration, solid waste reduction in buffer zone waterways, and single species monitoring and evaluation. As noted by numerous resource managers, many of these projects are institutionalized through formally-established agreements between stakeholder groups. These groups primarily include SERNANP, NGOs, and community entities, such as municipal government agencies, educational institutions, district police departments, and *Comunidades Campesinas* (formal Peasant Community organizations). One SERNANP employee (P18) described that there are "close inter-institutional work and cooperation agreements" with communities, which are specific agreements that are signed to enable resource managers to intervene with community livelihood activities like the extraction of grasses, livestock management, or the construction of houses or ranching infrastructure. They are often held within

buffer zone communities, in local meeting places like municipality buildings or one of the RNJ's three interpretive centers, but also sometimes occur within Reserve boundaries at points of access to Lake Junín or throughout wetland areas.

Highlighting a few examples of such projects can help demonstrate the different ways in which the conservation-community interface manifests as co-management for the RNJ. While conducting fieldwork around Lake Chinchaycocha in May and June of 2022, I was able to participate in two distinct co-management activities: (1) a shrubland fire management workshop and (2) a conservation planning workshop for the preservation of the *rana gigante*. The former was a half-day technical training led by SERNANP *guardaparques*, intended to train police officers and municipality authorities from the District of Carhuamayo on how to prevent and - should they occur - mitigate brushland fire in the Reserve's buffer zone. The latter was a three-day workshop led jointly by SERNANP, the Denver Zoo Foundation, Grupo Rana and an outside NGO called the Conservation Planning Specialist Group (CPSG). It was held in the towns of Junín (District of Junín, Department of Junín), Huayre (District of Junín, Department of Junín), and Nincaca (District of Ninacaca, Department of Pasco), on days one through three, respectively. Each session saw attendance by community members from all eleven buffer zone communities, local and regional authorities from different natural resource management agencies, and representatives from Electroperú. The purpose of the workshop was to develop specific, actionable goals toward protecting the giant frog, form distinct committees that would undertake those goals, and train participants on processes of project design and management. These examples, essentially, constitute a form of *capacity building*, which is best characterized as the simultaneous strengthening of institutions and development of human resources toward specific management or conservation outcomes (Hartvelt and Okun 1991; Berkes 2007; Berdej et

al. 2019). Partnerships maintained between SERNANP, NGOs, local authorities and institutions, and community members are intended to meaningfully unite diverse stakeholders and promote sustainability by training them in resource governance concepts, techniques, and strategies.

The above examples showcase the many permutations of theme, location, time, and stakeholder interaction that make up co-management programs around Lake Chinchaycocha. They are socio-spatially and temporally diverse, representing more than mere formalized, institutionalized programs. Rather, they are distinct places and times that serve to fuel the formation of the conservation-community interface. The word "formation" here is intentional because it highlights that conservation regimes are always emergent (Rasmussen 2015) and continually re-configuring themselves, contingent upon unfixed arrangements of social actors (Kull 2002; Berdej et al. 2019). Natcher et al. (2005) offer a particularly instructive conceptualization of co-management to underscore that sociality, arguing that co-management is about managing *relationships* rather than resources. Such relationships, furthermore, are often uneven and embedded in complex power differentials. The ways in which stakeholders encounter one another are contested arenas of conflict and debate, where contrasting management strategies, landscape imaginaries, and worldviews touch down (Gambon and Bottazzi 2021). In the case of the RNJ, capacity building through co-management is a uniquely Andean form of – or at least an opportunity for – the consolidation of power. It entails a shift in social relations, as new individuals and groups are brought into decision-making conversations, thereby opening up new and existing spaces of representation (Holifield et al. 2009) within environmental rule-making processes.

Yet political-ecological inquiry necessitates critical examination of the extent to which community-oriented conservation approaches can shift power relations and 'decentralize'

resource access and use (Kull 2002; Wong 2013). In terms of how conservation activity produces space around the RNJ, this is especially salient. Since the lines between "state" and "community" are blurred in the areas around Lake Junín, and because the conservation-community interface can assume many different forms in many different places, it is necessary to consider where, when, and the extent to which power is consolidated through community-oriented conservation practices. To understand how conservation-community interactions produce space around the Reserve, it is useful to draw upon Massey's (2003) particular conceptualization of the social production of space. Expanding upon ideas from Lefebvre (1991), Smith (1984), and Harvey (1989), Massey uses the notion of 'power-geometries' to describe geographically unequal relations of power that give individuals, communities, and institutions differing kinds and levels of agency. In other words, power geometries underscore that the production of social space is a fundamentally uneven process. It is differentiated both spatially and temporally by how power is consolidated, exercised, and diffused by distinct actors at local levels, as well as through their interactions with each other across the landscape. The many combinations of actor arrangements that form the RNJ's conservation-community interface thus plays a vital role in how conservation space is produced and (unevenly) disseminated throughout the region. This is because these differences influence both the *means* by which and the *ends* for which conservation is utilized. For instance, interactions between conservationists and government authorities - which often take place in centers of power like the Provincial Municipality in Junín, result in different conservation outcomes than do interactions between conservationists and *Comunidades Campesinas*, which often occur on rangeland or in residents' homes. At the same time, it is these differential arrangements that form the emergent regime that is the RNJ.

Another key form that the conservation-community relationship takes is that of the RNJ's *centros de interpretacion*, or interpretive centers. There are three such centers, located in the towns of Huayre and Ondores, Junin, Ninacaca, Pasco. The purpose of these interpretive centers is, as one local government authority (P12) described, to "disseminate information not only about the flora and fauna, but also about cultural resources, tourism resources, or raw materials that we have here." Although the interpretive centers form part of SERNANP's efforts to bolster local tourism given that both Huayre and Ninacaca see much traffic due to their locations along the Central Highway, other participants, primarily state resource managers, emphasized the role they play in resource management efforts within the buffer zone. They commonly constitute a meeting point for stakeholders to collaborate on co-management and community development projects. The Huayre Interpretive Center, for instance, is frequently utilized as a space for meetings held by the Junín National Reserve Management Committee.

Figure 7. The Huayre Interpretive Center

These interpretive centers play a vital role in the production of conservation space around Lake Chinchaycocha. As but one component of the RNJ's protected area management system,

the development of infrastructural sites like interpretive centers is a means by which the protection of 'nature' is achieved by "economically and culturally reorganizing rural areas" (Vaccaro et al. 2013). As such, they are sites that enable, develop, and institutionalize the conservation-community interface in two distinct ways. They foremost reinforce the conservation-community relationship at a local and regional level given their importance in connecting buffer zone communities to Reserve resources through the dissemination of information and development of co-management partnerships and projects. However, they also link buffer zone communities to broader socio-spatial scales and demographic processes by diffusing Reserve-related information to travels passing along the Carretera Central or to tourists specifically visiting the RNJ and Lake Chinchaycocha to birdwatch or visit scenic overlooks such as the *Mirador de Conoc* outside of the town of Ondores. The conservation-community interface then becomes both accessible to and contextualized within national development and demographic changes by what some scholars call the 'indirect' urbanization of the rural world (Williams 1973; Lefebvre 1991) fueled by interactions between different imaginaries and new markets (Vaccaro and Beltran 2007; Vaccaro et al. 2013).

Collectively, community-oriented management and the RNJ's interpretive centers are arenas through which the conservation-community interface has allowed the *notion* of conservation to permeate social life around Lake Chinchaycocha. The overarching objective of these domains is to educate (*sensibilizar*) the public regarding conservation-related issues in order to diffuse *conciencia ambiental*. In English, *concencia ambiental* literally means "environmental awareness" or "environmental consciousness." However, I will use the Spanish term *conciencia ambiental* specifically because in the Peruvian Andes it is a geographically and culturally situated phenomenon that extends beyond mere ideas of "awareness" or

"consciousness." As described by Rasumussen (2015) it is an Andean ethic: "an ethical imperative that highlights the individual's responsibility to the common good, an attitude toward proper management and use of increasingly scarce resources and the values of Andean lives." *Conciencia ambiental* connects the individual to the collective, meaning that it is a process that both shapes and is shaped by social relations and environmental rule-making in profound ways throughout the RNJ and buffer zone communities. In this sense, it is a cultural mechanism through which conservation has become hegemonic around Lake Chinchaycocha, creating widespread and pervasive understandings of what conservation is, what and whom it concerns, how it is undertaken, and for what goals it is utilized.

It could be argued that this type of conservation - which seeks to reject the human-nature dichotomy, reinforce economic development, and promote individual responsibility - is representative of what Büscher and Fletcher (2020) call 'new conservation.' They differentiate new conservation from two other models that they identify: 'mainstream conservation' that embraces both the human-nature divide and capitalist development and 'neo-protectionism' that embraces the human-nature dichotomy but rejects capitalist development. These understandings are insightful and compelling in showing the ways that Western capitalist logic has infiltrated conservation on a global level, particularly in the developing world. At the same time, however, *conciencia ambeintal* - as a collective ethical imperative unique to the Andean context - serves to underscore that these conceptions are not a panacea. Just as the production of social space is geographically, socially, and culturally-differentiated (Massey 2003), so too should be Bücher and Fletcher's insights into global conservation. In other words, careful scrutiny is required to understand how internalizations of neoliberal capitalism within protected area management systems can touch down differently in particular places and at particular times.

III. Iconic and symbolic species

A final domain through which conservation produces space around the RNJ is the human-wildlife nexus. Specifically, the diffusion of *conciencia ambiental* through the conservation-community interface - and the degree to which it has permeated social life in buffer zone communities - has in large part occurred through the symbolic meanings attached to Lake Chinchaycocha's two most well-known species, the *rana gigante* and *zambullidor*. Among conservation scholars and practitioners, these types of animals are commonly referred to as 'charismatic species.' In general, charismatic species are understood as species that are influential due to their natural characteristics, conservation status (usually threatened or endangered), and/or (often) large size; accordingly, they are often also called 'charismatic megafauna' (Ducarme et al. 2013). At times, conservation regimes transform these species into what are known as 'flagship species': those that are chosen as icons or symbols to serve as "rallying points to stimulate conservation awareness and action" (Douglas and Verismo 2013). In this sense, flagship species become ambassadors for conservation projects or movements in particular places, thus attracting more support, funding, and overall popular public interest than other species (Verissimo et al. 2010; Runge et al. 2019). Scholars have noted that the use of the term *flagship* is purposeful because it is linked to 'metaphors of representation' and that these metaphors - which are grounded in everyday, communicable language and the anthropomorphizing of animals - have a significant impact on how people understand conservation and how they act toward wildlife (Barua 2011). As such, just as with charismatic species, large, endangered mammals are disproportionately chosen to serve as flagship species.

However, other scholars in geography and the human dimensions of wildlife have contended that charismatic and flagship species can be problematic concepts. For one, the terms

‘charisma’ and ‘flagship’ are frequently invoked by conservation biologists yet ill-defined in both theory and practice (Jepson and Barua 2015; Albert et al. 2018). Moreover, the question of non-human charisma or ‘ambassadorship’ is messy because it is theorized and projected by human actors, which in part contributes to an overwhelming bias toward large mammals (Monsarrat and Kerley 2018). As such, these scholars have turned toward employing the terms ‘iconic’ or ‘symbolic’ species as a way to consider the role of culture, place, and knowledge in creating meaning around species that are not necessarily large in size, of threatened or endangered status, or mammals (or even fauna at all) (Horsley et al. 2020; Adloo et al. 2023). An emphasis on locally-differentiated cultural contexts and locally-situated knowledges vis-á-vis wildlife conservation further underscores that species chosen as flagships do not necessarily require human-relatability or totalizing metaphors of representation. Instead, they can be connected to existing cultural associations within local social contexts in order to create emotional resonance and a sense of ownership (Runge et al. 2019).

The above considerations are crucial for understanding human-wildlife relations and biodiversity conservation throughout the RNJ, as Lake Chinchaycocha’s symbolic species are neither large mammals nor anthropomorphized. The *rana gigante* and *zambullidor* are instead symbolic for other reasons unique to highland Junín and Pasco. First, they are representative due to their ecological uniqueness and endemism; they are only found in Lake Chinchaycocha (or in the case of the giant frog, the lake’s tributaries) and nowhere else in the world. Furthermore, they are either incapable of migrating or shifting habitats. The *rana gigante*, as described by one NGO conservationist (P14), has a soft and vulnerable underbelly, meaning that traversing from one tributary to another - across a landscape of dry montane grasses and sharp volcanic rock called ignimbrite - can easily kill them. The *zambullidor* is even more so confined to its habitat.

As a flightless waterfowl, it faces two unique and compounding difficulties: “The problem with being flightless is that you can’t escape from problems. The problem with being a waterbird is that you can’t fundamentally shift habitat” (Chamorro and Accua 2020). The endemism, immobility, and resulting vulnerability of these species are the primary reasons for their Critically Endangered IUCN conservation statuses. At the same time, the uniqueness and endemism of the *rana gigante* and *zambullidor* have contributed to the development of significant local historical and cultural connections to them. Resource managers and users alike assign them meaning and value that, while grounded in ecological importance, extends beyond their biology and ecology. Informed by *conciencia ambiental*, this meaning-making is in part driven by an emotional sense of place, ownership, and responsibility. One participant (P12), for instance, alluded to both place attachment and sentiments of pride when discussing the preservation of the frog:

> *“It [the rana gigante] is understood worldwide – they are very unique to us and are something that makes you feel very proud to preserve, because no one else is.”*
>
> - P12, local government authority

Second, the Junín grebe and giant frog are symbolic because they have become flagship species for the Reserve. Specifically, the conservation sector has drawn upon their ecological qualities and socio-cultural influence to promote them as icons for conservation efforts around Junín. Here, the NGOs that are present in highland Junín and Pasco play an especially important role for three interlocking reasons. First, their work in the area is primarily concerned with single-species conservation: Grupo Rana and the Denver Zoo Foundation focus on the *rana gigante* while ECOAN focuses on the *zambullidor*. Second, as aforementioned, they are *de facto* integrated into SERNANP’s protected area management regime, lending them considerable

agency and influence in environmental rule-making. And finally, they are public-facing organizations with connections to technical and financial support at the national and international level. Grupo Rana and ECOAN are Peruvian organizations based out of Lima that, while conducting a majority of their work around Lake Chinchaycocha, also engage in projects in other parts of the country. The Denver Zoo Foundation, furthermore, is a U.S.-based organization with chapters and projects across the world. The Peruvian chapter, formally called *Perú: Ecosistemas Aquáticos Alpinos* (Peru: Alpine Aquatic Ecosystems) employs Peruvian conservationists in offices located in both Lima and the town of Junín. Consequently, these organizations make the giant frog and Junín grebe flagship species through a 'collapsing' of social space (see: Harvey 1989) that stretches the conservation-community interface across borders. They are able to promote these fauna as ambassadors of the Reserve and Lake Chinchaycocha not only at a local level through co-management projects in the buffer zone but also at a national and international level by bringing new actors to the table: government agencies, other NGOs, and research and donor groups.

That understandings of the *rana gigante* and *zambullidor* are informed by social, cultural, and knowledge-based circumstances at varying scales underscores their inherent sociality. While on the one hand they are material, living animals, on the other they are social constructions that are "contextualized by and imbued with social, political, and cultural differences" (Robbins 2011). The very assigning of value to these species by humans, for instance, is a social process that is filtered through the numerous permutations of actors that make up the conservation-community interface: state land and resource managers, NGO conservationists, government authorities, and local institutions and residents. The preservation of the *rana gigante* and *zambullidor*, then, cannot be disentangled from social life. The ways that they are perceived and

valued do not occur independent of the social relations that unfold in their management; rather, how they are valued both informs and is informed by how they are preserved. Because the conservation-community interface is a power-laden web of stakeholder interactions and contrasting worldviews, this means that the *rana gigante* and *zambullidor* are political objects themselves (Robbins 2011). They are contested entities that are implicated in social conflict, continually transformed as individuals, communities, and institutions leverage power and influence. Douglas and Veríssimo (2013), furthermore, argue that the politicization of flagship species is exceptional because socially constructing certain species as iconic (and thus more 'important' than others) entangles them in broader socio-political forces and actually confers them "conflict agency."

The *rana gigante* serves as an excellent case study in how non-human species can become embedded within socio-political life, reproduce conflict within the conservation-community interface, and contribute to the production of conservation space around the Reserve. The creation of the RNJ in 1974 marked a fundamental shift in social-environmental relations for the new buffer zone communities in part because it restricted access to once-unbarred resources. One such resource was the now-endangered *rana gigante*. Historically, the decline of the giant frog has been attributed to local collecting within the buffer zone for subsistence purposes; some interview participants described how consuming it was thought to prevent or even cure certain forms of cancer. Now, conservation programs run jointly by SERNANP, Grupo Rana, and the Denver Zoo Foundation seek to preserve the frog by disseminating *conciencia ambiental* based on its ecological significance and the environmental and legal ramifications that could result from hunting it. Because of this, the *rana gigante* has become an actor with a significant social and political agency, indirectly fueling conflictual encounters between starkly different forms of

knowledge: scientific knowledge held by resource managers and conservationists on the one hand and locally and historically-contextualized knowledge held by local people on the other. How these types of knowledges interact, moreover, raises questions concerning whose expertise counts in matters of biodiversity conservation. While a prioritization of biophysical, scientific knowledge may contribute to the preservation of the Reserve's wildlife, it also has extensive social-spatial implications as it arises from the "objectives and worldviews" of conservationists (Pelai et al. 2021). It thus diffuses conservation space in ways that reinforce uneven power relations between resource managers and Reserve-adjacent residents.

In a simultaneous effort to further protect the frog, reproduce *conciencia ambiental*, and mediate long-standing social conflict between resource managers and users, Grupo Rana and the Denver Zoo Foundation started an initiative called *Guardianes de las Ranas de Chinchaycocha* (Frog Guardians). Piloted in 2020, Frog Guardians is a citizen science project aimed at "promoting the conservation of Lake Junín's giant frog" and "the quality of their aquatic habitats" (Grupo Rana 2021). The program consists of about 30 total volunteers from all eleven buffer zone communities who are trained to participate in numerous technical aspects of preserving the species, from monitoring and surveillance to public outreach and environmental education. These volunteers also help assess and clean tributaries that feed into Lake Chinchaycocha, as these streams, where frogs are found, experience contamination from municipal solid waste from nearby towns. Field work with volunteers always takes place within the boundaries of their respective communities in the buffer zone in order to foster a sense of personal connection with and place-based responsibility toward the species. One NGO representative who is heavily involved in the program noted that "when you do it within their territory, they show interest quickly" (P4). While Frog Guardians has seen great success in

training volunteers and connecting local people to the *rana gigante* in these ways, it has also had uneven socio-spatial impacts across buffer zone communities. By engaging some buffer zone residents but not others, it not only reproduces a hegemony of biophysical, scientific knowledge but also internally stratifies communities. Interviews with current Frog Guardians participants revealed an 'othering' of those who are not involved in the program and have thus not been privy to the production of scientific knowledge. The creation of these in-groups and out-groups shows how the *rana gigante* is capable of reproducing existing social conflicts as well as indirectly fostering novel types of power-laden interactions within the conservation-community interface.

> *"We have studied and know that these species are in danger of extinction, but there are other people who don't… that is, they don't even know what 'in danger of extinction' means."*
>
> - P6, local rancher and Frog Guardian

IV. Geographically uneven productions of conservation space

As mentioned throughout this chapter, the processes and relationships that transform conservation space around Lake Chinchaycocha are far from uniform. Rather, they are differentiated geographically by way of different collections of social interactions and interpretations of those interactions that occur at local and sub-local levels (Massey 2003). This occurs heavily through what Lefebvre (1991) calls the domain of *conceived space*, which can be thought of as both abstractions and representations (or symbols) of space. In matters of conservation around the RNJ, abstractions, and representations of space take the form of unevenly distributed Reserve infrastructure and uneven politics of naming, respectively.

Spatial abstractions are conceptual models of space that see it as bounded and static (i.e., mapmaking and the delineation of boundaries and scales) (Lefebvre 1991). From this angle, the

built environment is particularly important in the context of protected areas. Infrastructure such as offices, educational centers, and points/means of access to specific places and resources constitute spatial abstractions, as they are a way that protected areas are both divided up and pieced together into linear, manageable locations (Schipper 2008). Within the RNJ in particular, there is a highly uneven distribution of Reserve infrastructure in which a large majority is concentrated around the southern reaches of the lake when compared to the north. Figure 8 below depicts this distribution, classifying infrastructural resources into three types: managerial (operational and interpretive centers), touristic (scenic viewpoints and points of public access to Lake Chinchaycocha), and directional (navigational or informational signs denoting where the Reserve is). As shown, Reserve infrastructure is more concentrated in the south, primarily within the Department of Junín. This particular placement and use of physical Reserve infrastructure translates directly to issues of where and how conservation activities are undertaken as well as the allocation of resources and conservation outcomes. It favors centers of political and financial power like the provincial capital of Junín, thus concentrating decision-making agency with higher-level authorities and bureaucratic institutions, all of which ultimately serve to reproduce power-geometries of conservation in the area.

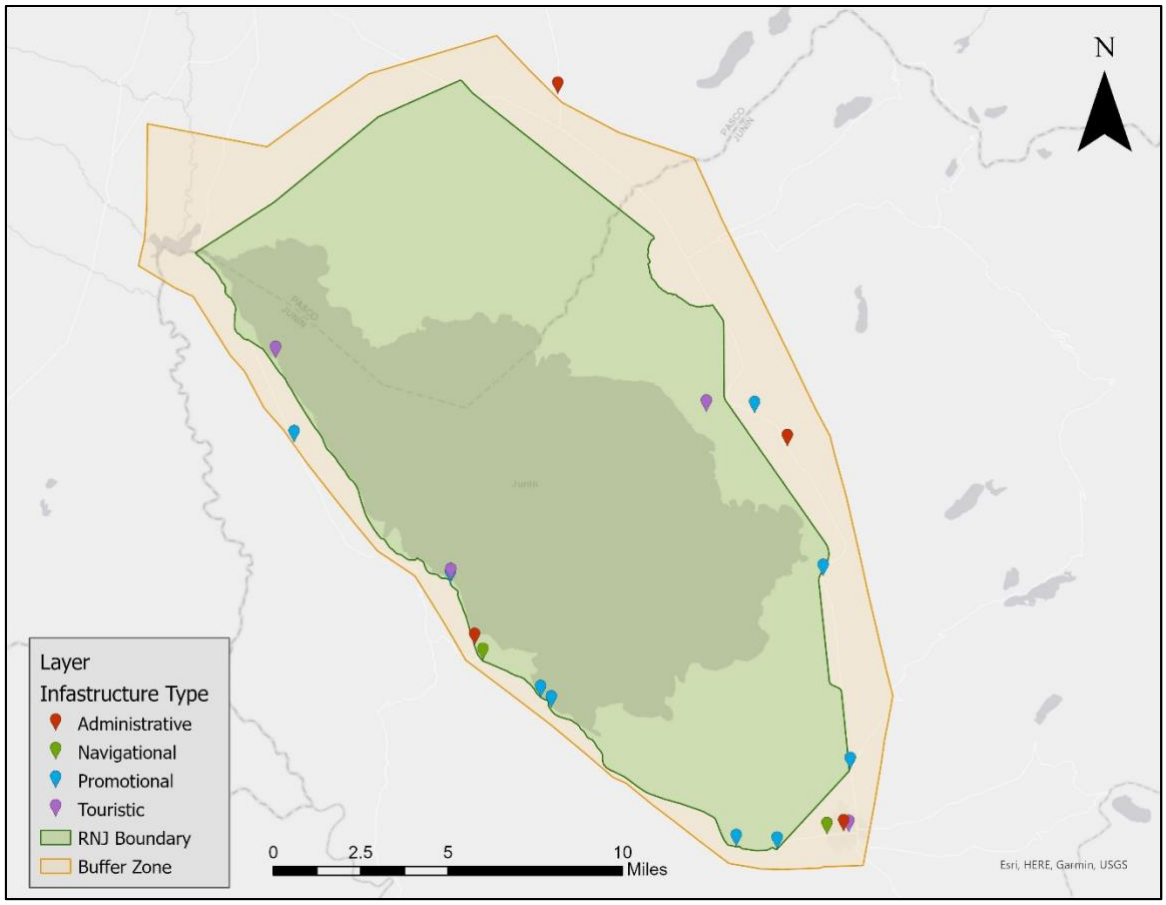

Figure 8. Distribution of RNJ infrastructure around Lake Chinchaycocha

Symbolic representations of space are also an important domain for the uneven production of conservation space around Lake Chinchaycocha. Specifically, the process of naming is a compounding factor in how the distribution of Reserve infrastructure reinforces power-geometries of conservation. Many scholars have studied political nature toponymy, or place-names, noting that naming is often a means for powerful groups to assert legitimacy or normality in a given area and that novel spaces are 'written' into existence by naming places and mapping landscapes (Kearny and Bradley 2009; Hagen 2015; Smith 2017). Berg and Lawrence (2017), furthermore, argue that "the use and (re)production of place-names can be seen as a means of communicating often ideological meanings about places." While these understandings are useful in studying the RNJ, it is not just *place*-names but also *species*-names that hold power.

As mentioned in Chapter IV - the use of names like Lake "Junín," the "Junín" National Reserve, the "Junín" grebe, and the "Junín" giant frog is contested throughout the buffer zone. Socio-spatially, then, the selection of the word "Junín" in these names serves to reproduce power-geometries of conservation in highland Junín and Pasco. It symbolically prioritizes the Junín side of the Reserve, restructuring identity by detaching those who live in Pasco from the landscape and fueling social conflict within the conservation-community interface.

> *"Then SERNANP arrived, they began to talk about Junín, Lake Junín. So that's our disagreement. Why not call it 'Lake Chinchaycocha National Reserve'? It would be the most correct thing to do because it's in both regions."*
>
> - P7, local rancher from Pasco

Part 2: The Social Production of Extractivism in Highland Junín and Pasco

Although the interview process showed that subsoil metal mining is considered a primary threat to the RNJ and Lake Chinchaycocha, conservation is largely not thought to be a viable strategy to address mining pollution; along a similar line of logic, addressing mining contamination is also not considered to be one of the purposes of the Reserve. If conceived as an economic model, a form of resource governance, and a way of understanding the landscape all at once, there is then an immensely diverse web of actor relations that produce extractive landscapes. Around the RNJ, mining produces a widespread 'extractive imperative' characterized by multifaceted spatialities and temporalities. This process primarily plays out through three interconnected avenues: (1) geographies and temporalities of uneven development that have produced - and continue to reproduce - mining enclaves in the Departments of Junín and Pasco, (2) power-laden interactions between the extractive sector and local communities, and (3) a neoliberal ideology of mining embedded within areas around the RNJ. However, there is a

fundamental if not surprising similarity between conservation and mining in the region. Just as conservation has permeated the conservation-community interface around the Reserve, extractivism too has become embedded and internalized within Andean social life in ways that make it hegemonic.

I. Uneven extractivism and the context of Junín and Pasco

In order to understand the spatiality of subsoil mining activity concentrated in the areas around Lake Chinchaycocha, it is necessary to reexamine central Peru's extractive history. While there is an abundance of subsoil mineral extraction around the entirety of Peru, the history, trajectory, and impacts of mining in the Departments of Junín and Pasco are exceptional. Himley (2018) notes that during the era of Spanish colonization, when mining economies were nascent, extractive operations were selectively territorialized in certain parts of the country. A particularly important area was the high, mountainous sections of the regions of Junín and Pasco where zinc, copper, and silver ores were discovered. The open pit mines in present day Cerro de Pasco, for instance, have been extracting these minerals for more than 400 years, and the city of Cerro de Pasco itself was formed both because of and around such mines (Dajer 2015). In colonial Peru, mining products from Junín and Pasco were continually sent to Spain and other capital-rich countries in Europe, while personnel, resources, and infrastructure necessary to sustain and grow mining operations were sent from Europe back to central Andean Peru (Himley 2018). This long-standing connection between Peru and Europe underscores the ways in which, as Harvey (1989) describes, capital accumulation and circulation has been capable of 'collapsing' geographical space throughout history.

Yet the extraction of subsoil metals in Junín and Pasco did not halt when Peru gained independence from Spain in 1821; rather, the new Republic sought to specifically stimulate a mining economy. Throughout the late 19th and 20th centuries, the government poured resources into infrastructure and technology sectors and strengthened institutional governance in order to drive economic growth and development on a national level (Deustua 2000). However, these neo-extractive state-led efforts to mobilize metal mining in the service of national-scale development conflicted with the tendency of Peru's extractive economy to "exhibit uneven and discontinuous spatialities" (Himley 2018). Accordingly, Andean Junín and Pasco - a region where mining was situated during colonialism - were further entrenched as a hotspot for mineral exploration, development, and extraction. Klarén (2000) estimates, for instance, that Cerro de Pasco produced around 65% of Peruvian silver in the first two decades following independence. Then, around the turn of the 20th century, the Cerro de Pasco Corporation was founded by a U.S.-based syndicate led by J.P. Morgan, forever altering highland Junín and Pasco's mining economy (Kruijt and Vellinga 1979; Becker 1983). The Cerro de Pasco Corporation rapidly became Peru's largest employer and landowner, at one point employing more than 14,000 people and owning approximately 325,000ha of land (Klarén 2000). By 1973, it had transformed the region into a mining enclave (Kruijt and Vellinga 1978), generating an astounding $230 million in exports (Delman 2012).

The late 20th century marked yet another turning point in the history of Peru's mining industry. As the global spread of neoliberalism accelerated in the late 1980s (Harvey 2005), Peru entered a decade of profound political and economic transformation. In 1990, right-wing politician Alberto Fujimori won the presidency and, among other significant reforms, implemented a series of large-scale deregulation measures in which the economy was

restructured according to neoliberal principles. The subsequent opening of the country's mining sector made it a foremost target for transnational capital, and unprecedented mining investments began to arrive around the country from abroad (Bury 2005). In 1999, Volcan S.A. - a subsidiary of Switzerland-based Glencore PLC - acquired the Cerro de Pasco for $62 million – today, it is the leading Peruvian producer of silver, zinc, and lead (Volcan 2020). The success of Volcan within the context of rapid neoliberal deregulation, moreover, contributed to a spatial and institutional expansion of mining in highland Junín and Pasco. This expansion has been characterized by a rapid boom in the exploration of new underground mines around Lake Chinchaycocha on the part of numerous companies. Some of these corporations are domestically and publicly owned (like Activos Mineros S.A.C.) but most are subsidiaries of foreign-owned parent companies or conglomerates, such as Nexa Resources S.A. which is owned by a Brazilian conglomerate called Votorantim S.A.

Within a political ecology framework, the history of such a rapid growth in mining investments across Peru underscores the complex social and spatial processes that contribute to the (re)production of mining enclaves in Andean Junín and Pasco. Put simply, the creation of sub-national extractive economies is fundamentally a social construction, predicated on 'resource-making' or the rendering of certain areas of the Peruvian underground as 'knowledgeable and actionable' (Himley 2021). The material extractive unevenness in the country is thus the result of contested territorial meaning-making (Martín 2017). Some scholars have called this pattern a "punctuated and discontinuous geographical expression" that distinguishes whether, where, and when processes of 'modernity' take place (Bridge 2010). Others have explicitly drawn upon the production of space theories, conceptualizing the tendency of extractive economies to selectively territorialize as "uneven geographies of mineral

resource development" or "uneven extractivism" (Martín 2017; Himley 2018; Irarrazaval 2020). These insights raise two crucial points in understanding the social production of mining around the RNJ. First, the geographical unevenness of the region's extractive sector is fundamentally grounded in differential concentrations of both capital and power (Harvey 1989; Massey 2003). Second, characteristically of enclave economies, those concentrations of capital and power circulate unevenly at multiple scales. Capital flows and diverse forms of power at spatially-distant locales largely dictate the use and distribution of products generated from mining. This notion is evident when one once again considers that the vast amount of money continuously exported from mining projects in Junín and Pasco is controlled by transnational corporations and conglomerates primarily based in the Global North (Klarén 2000; Bury 2005; Delman 2012). Furthermore, even within heavily extractive districts such as the city of Cerro de Pasco itself, it has been shown that benefits are unevenly distributed, contributing to higher levels of inequality within those areas (Loayza and Rigolini 2016). Synthesizing these two points leads to a paramount conclusion: the material benefits and economic development provided by extractivism in one place are predicated on the unlimited appropriation of resources (subsoil and otherwise), a disproportionate claim on ecosystems, and the exploitation of cheap labor from another place (Brand and Wissen 2021). Mining then constitutes a vicious socio-spatial cycle: it produces space by continually structuring and restructuring environments, economies, and social relations. In this sense, it should be understood as a dialectical and emergent process, functionally dependent upon the very social-ecological re-configurations that it creates.

This argument further demonstrates that the unevenness of mineral resource development in highland Junín and Pasco has selectively incorporated the people, places, and environments of the region into the dynamic economic, political, and social circuits that comprise the national and

global extractive sectors (Himley 2018). This trend has long been a principal analytical consideration for political ecologists - an original concern of political ecological research was to demonstrate the ways in which local, rural communities can become entrenched within global market forces (see: Nietschmann 1979). The pseudo methodology of 'chains of explanation' (Blaikie and Brookfield 1987) has been the primary means of conceptualizing the situatedness of localized social and ecological degradation in broader contexts, highlighting how complex processes interact at and across scales. However, this conception alone is analytically insufficient with respect to the context of highland Junín and Pasco, as it is unable to account for the myriad differences in place, culture, social relations, and history that exist across the world. While the Reserve's buffer zone communities have indeed been selectively incorporated into broader extractive forces, I argue that the reverse is the case as well. That is, mining is inseparable from social life around Lake Chinchaycocha because national and global processes of extractive practices are also contextualized within - or perhaps "folded into" - the local context. This represents another way that extractivism compresses geographical space by collapsing socially-constructed spatial scales (Harvey 1989). It furthermore shows that part of mining's emergent nature is the ways in which both its materiality and sociality can make and remake space by restructuring how different actors are positioned vis-a-vis each other across such scales.

The spatial collapse of local, national, and global scales produced by mining in highland Junín and Pasco is of utmost importance. That extractive activity has simultaneously entrenched local communities within larger forces *and* become contextualized by the local context produces a particular legacy of mining that is formed by everyday, lived experiences with the immense spatial-temporal scale of extractivism. To understand the particular role that time plays in extractive landscapes, it is useful to draw upon D'Angelo and Pijpers' (2018) conceptualization

of *mining temporalities*. They argue that extractive centers are as much landscapes as they are 'timescapes': spatial materializations of time that represent "entanglements of past, present, and future" (D'Angelo and Pijpers 2018). Mining temporalities underscores that the temporal layers of mining landscapes are incorporated into infrastructures, institutions, and people's daily activities, bodies, and minds alike (D'Angelo and Pjipers 2018; Boudewijn 2022). This is certainly the case in the landscape of Lake Chinchaycocha and the RNJ. Here – in an area where mineral extraction is older than the Republic of Peru itself and where nearby mines are but one link in the chain – mining is a perpetual aspect of life. Although it is tied to place, it is also spatially unbounded; although it is experienced in the present, it is also constructed by memories of the past and outlooks for the future. Older or already-closed mines, such as open-pit projects in Cerro de Pasco, represent particular perceptions of past political, economic, and social conditions in the central Andes. On the other hand, new or proposed mines, such as Nexa S.A.'s Shalipayco Project, represent both a hope of better conditions and the prospect of volatile social struggle. In this sense, for buffer zone communities, mining is not set in space or time. Rather, it is emergent not only because of its materiality (i.e., the continual extraction of silver, zinc, and lead) but also because of its perpetual entanglements with social life and the lived experience(s) of people in the region.

> *"I mean, how do you fight against something that's historical, that's been there even before you were born? I mean, how do you fight that?"*
>
> - P16, NGO representative

II. Mining-community relations

The entanglements between mining and social life around Lake Chinchaycocha means that Reserve-adjacent communities become a primary stakeholder in the dynamic social-

environmental forces that make up extractivism. The institutionalized inclusion of community members and institutions in processes of mining exploration and development on the part of extractive corporations, furthermore, necessitates understanding how relations between the mining industry and Reserve-adjacent towns can direct and transform the production of extractive space in the region. Literature on extractive frontiers and extractive industries has characterized this relationship as "corporate-community relations" (Gustafsson 2015; Ehrnström-Fuentes 2015; Knöpfel 2020) or interactions between "the market" and "the community" (Bury and Norris 2014). However, these conceptualizations are problematic in the context of highland Junín and Pasco for two reasons. First, they imply that there is a fundamental dichotomy between the private and public domains, failing to account for the intrinsic connections between the state and mining corporations in neo-extractive systems like that of Peru. Second, and along a similar vein, by using terms such as "corporate" or "market" they reduce the mining industry to either a singular actor or merely a few, non-conflictual actors.

As such, just as the relationship between the conservation sector and local communities required reconceptualization, I argue for a similar reconceptualization of the relationship between the extractive sector and local communities. I will thus use the term "mining-community relations" or "mining-community interface" to describe the messy and complex interactions between the extractive sector and local communities around Lake Chinchaycocha. Understanding that such relations also constitute a social interface underscores now-familiar points. First, there is not one or even a few actors that comprise the extractive industry; rather it is a complex amalgamation of private and state entities that overlap and, at times, clash with one another. Second, although Reserve-adjacent towns are not "mining communities" in the traditional sense (and rather communities privy to and influenced by mining), there are still

residents that work or have worked for mining companies; this further showcases that the concept of "community" is often a site of socio-political conflict. Third, interactions that play out within the mining-community interface are profoundly power-laden, contingent upon numerous factors: different social-spatial positions, types of knowledge, forms of power and capital, and worldviews. Lastly, as an interface, mining-community relations can assume different forms in different places and at different times, depending upon a plethora of factors such as the given phase of a mining project (exploration, development, extraction, and closure/reclamation) and the particular mine in question. It must be noted, however, that the importance and power of private corporations should not be understated. On the contrary: a crucial way that the mining-community interface manifests are the many interactions between mining corporations and Reserve-adjacent communities. In this sense, I seek to illuminate that mining companies cannot be abstracted from their own relationship(s) with Peruvian state agencies and that such relationships have important implications for the nature of how corporations present themselves to and engage with communities.

To understand the mining-community interface in the areas around Lake Chinchaycocha in all its complexity, it is necessary to consider the institutional and legal processes that guide relationships between the state, the private sector, and local communities. This process begins with the state: under the Peruvian Constitution, the state is the sole owner of all mineral resources located in the subsoil, meaning that MINEM is the agency responsible for granting concession rights to mining corporations (Arrisueño and Triveño 2017). Once concessions are granted, a company must complete an Environmental Impact Assessment (EIA) that is then once again reviewed by MINEM to either be approved or denied (Arrisueño and Triveño 2017). Then, at least in those mining areas around the RNJ, as part of the exploration and development phases

of a given project, engineers and public relations specialists from mining corporations visit communities and meet with residents, community leaders, and government authorities. The purpose of these meetings are to disseminate information about the project in order to promote transparency and, ideally, garner public support for extraction and production. These conversations, however, must not be conflated with prior consultation (*consulta previa*), which is a distinct legal process created in 2011 by Congress through Law No. 29785: Law of Prior Consultation (*Ley de Consulta Previa*) (Gustaffson 2015). *Consulta previa* is distinct in that it only pertains to indigenous and native communities, a status not applicable to the eleven communities around Lake Junín.

> *"It would be different if these were native communities, because there is another process called prior consultation… it becomes like a binding opinion and they [the community] can decide whether or not they want it [the mining company] to be there."*
>
> - P3, NGO conservationist

It is therefore useful to think of corporate-community interactions around the RNJ as *interventions*. They are isolated and stratified encounters, characterized by drastic power differentials and tumultuous alterations of social-ecological relations, both between corporations and communities and within communities themselves. The case of the Shalipayco Project is a particularly useful example. In 2017, Nexa Resources S.A. intervened in the community of Carhumayo, Junín to explore for and develop zinc deposits in the areas around Laguna Yanacocha, located in the hills just outside of town. The corporation set up an administrative office in Carhuamayo to act as a base of operations and began hosting public forums, meetings with district authorities, and environmental education workshops with primary and secondary school students and local rural producers. Yet Nexa's presence was far from harmonious, instead met by local opposition. Community-led groups, such as the *Frente de Defensa del Agua de*

Carhuamayo (Carhuamayo Water Defense Front, hereby referred to as FEDAC), organized town hall meetings, rallies, and protests directed against the company, which in turn fostered further internal social conflict and stratification within Carhuamayo. Four years later, due to a combination of community opposition and logistical complications induced by the COVID-19 pandemic, Nexa temporarily suspended the Shalipayco Project and has since abandoned its Carhuamayo-based office. Although the company left the town - for now - its material and social legacy is deeply felt by the community. In its wake, Nexa left not only the dangers of depleting and contaminating the town's primary water supply but also pervasive socio-political strife.

The Shalipayco Project is thus representative of the paradoxical dual-nature of extractivism in highland Junín and Pasco. While mining is indeed a perpetual aspect of life, inscribed in social relations, culture, and memory-in-place, it also touches down at discrete times and in discrete places in the form of these seemingly isolated and sporadic corporation interventions within Reserve-adjacent communities' lands and territories. These 'temporal cycles' of mining create a situation in which, as described by D'Angelo and Pjipers (2018), communities know that even though a company may close, mining itself will continue. Mine closure or project termination, although perhaps considered a process to end extraction and thus separate mining from social life and environments, in reality achieves none of the above. The sudden absence of corporations does not sever neither the relationship between local people and sites of extraction nor the corporate-community relationship itself. Instead, it is a metaphor for the emergence of extractivism, reminding communities that mining will return, even if in a different form or at the hand of a different corporation than the previous (Boudewijn 2022). Halvaksz (2008) puts this aptly, arguing that abandoned project sites and reclaimed or recovered mines "remain important sites for imaginative engagement, for contestation, and for multiple

understandings of their creation and dissolution long after the company has left." This simultaneously transient and perpetual nature of extractive interventions, furthermore, plays a significant role in how residents of Reserve-adjacent communities actively construct a bureaucratic view of mining; they seek to personally abstract themselves from it even if they are unable to disentangle their social lives and material conditions from its disruptions.

> *"In the end, when the company finishes its extraction - it does not find any more resources - it will have to go. But and everything else? It's going to stay. There's almost nothing left, the water won't come back, so people are going to have to either go to the city or they're going to have to die there with the few resources they have."*

- P4, NGO representative

The paradoxical dual-presence of mining around Lake Chinchaycocha generates a corresponding duality in the production of space across the region. The permanence of mining, rooted in the social and material temporality of extraction, has pervaded social life to produce a widespread 'extractive space' across the region. It is fundamentally a social space characterized by political economic prioritizations and culturally hegemonic understandings of extractive-based growth. At the same time, however, the production of extractive space is not uniform or static across space or time. It is spatially and temporally differentiated, continually reconfigured as sites of extraction emerge and disappear as well as based on how those sites become entangled within everyday social and cultural life in local contexts. This notion highlights that space is not simply a product of relations between actors but also inscribed within the culture and the physical environment (both natural and built).

The relations between mining companies and communities around Lake Junín are also marked by specific corporate practices generally known as Corporate Social Responsibility (CSR). Widely discussed by scholars in economics and business, CSR generally refers to efforts

by private entities to directly contribute to local development by incorporating social and environmental concerns into interactions with stakeholders (United Nations Industrial Development Organization 2023). These efforts vary in both goal and size depending on the economic and geographic scope of the companies' impacts – some, such as those undertaken by corporations that operate around the RNJ – are undertaken in the immediate vicinity of extraction, while others have broader geographic reaches. Normally, CSR programs are run by an external relations team within a given company: these teams generally face a range of regional and national actors, have a sufficient budget that allows for large-scale one-off projects, and seek to promote a particular corporate image (Bebbington 2009). Such is the case around Lake Chinchaycocha, where mining companies frequently engage with the public and conduct on-the-ground projects such as infrastructure development and educational workshops in primary and secondary schools. Interview participants noted that when mining companies intervene in communities, they often construct or improve upon existing built environments like municipal buildings or community meeting spaces. In educational institutions, interviewees described that these external relations teams frequently provide school supplies and gifts to students and their families. Overwhelmingly, these types of projects were seen more as coercion than community development, raising important theoretical questions regarding the nature and implications of CSR in extractive contexts.

As such, political ecology and human-environment geography literature assume a more critical approach to studying CSR. Banks et al. (2016), for instance, claims that CSR is a 'guise' for economic development rooted in logics of neoliberal growth and a restructuring or reduction of state power, as simultaneously promoting free market economic growth and devaluing the role of the state thus creates new responsibilities for corporate entities. Rajak (2008) similarly argues

that CSR is grounded in ideological visions of empowerment through the market that is necessarily based upon a reduced presence and role of the state. In this sense, CSR programs initiated by extractive industries are particularly neoliberal, as they are embedded in the relationship between extractivism and development – a relationship characterized by processes of industrialization, state (de)formation, and regional and local socio-institutional relations. Bebbington (2009), for instance, claims that extractive corporations' CSR is best understood as processes of "systemic, political economic change" rather than intentional goal-setting interventions. These multifaceted understandings are useful in theorizing the dynamics of CSR in the Andean context, where (1) the linkages between extractivism and development are especially salient and (2) the power dynamics at play in corporate intervention can dramatically alter social-environmental relations within communities. In this sense, the Andean form of CSR is often characterized as a type of patronage or clientelism: a political exchange in which an authority figure gives resources in exchange for support from a 'client' (Robinson and Verdier 2013). CSR programs within the extractive sector, therefore, are rooted in neoliberal logic, aiming to portray the private sector as a vehicle of empowerment, development, and self-sustainability (Rajak 2008).

Conceiving CSR as clientelism sheds new light on the nature of corporate intervention in communities around Lake Chinchaycocha. The 'strings-attached' contingencies of service-providing on the part of mining companies like Nexa Resources S.A. in Carhuamayo fosters a profoundly power-laden relationship. It is a coercive bond-building process that seeks to abstract poverty from issues of systemic social justice and the distribution of wealth, which (re)produces deference and dependence on the part of the community, rather than inspiring empowerment and self-sustainability (Rajak 2008; Gustaffson 2015). In turn, it further reinforces uneven power

differentials between corporations and communities, thus creating a vicious cycle of dependence, exploitation, and conflict. Gamu and Dauvergne (2017) describe this as the 'slow violence' of CSR in Andean Peru, claiming that CSR is deeply embedded in legitimizing the violence of capitalism and particularly the "slow violence from degrading local environments." Drawing on Gramsci (1971), they argue that it is a tool to manage and influence reactions 'from below' (that is, the community) and thus produce hegemonic narratives and perceptions of subsoil mineral resource extraction. This process, then, is not merely an accidental consequence or externality of CSR, but rather a deliberate effort on the part of mining companies to not only seek support for extraction but also diffuse social pressure for state institutional reform and 'disarticulate' social conflicts (Gustaffson 2015; Gamu and Dauvergne). In fact, Bebbington (2009) directly links the growth in CSR programs to the proliferation of conflict surrounding mining across Peru, showing how it is both a proactive measure and a reactive response toward curbing local anti-mining mobilization.

The correlation between the proliferation of CSR and social conflict indicates the seemingly paradoxical ways that CSR restructures the relationship between citizens and the state through the mining-community interface. Mediated by the private sector, CSR is a state-forming process that is continually produced by the interplay between the distinct relationships between the Peruvian state and extractive industries on the one hand and the state and local communities on the other. These relationships are characterized by the assumption of state-like roles and responsibilities by non-state actors. Put differently, CSR dynamics in the regions around Lake Chinchaycocha have led to both mining companies and local communities adopting state-like functions (Gustafsson 2015), but in dissimilar ways and toward very different ends. Corporations use CSR as a means of governance, projecting power and authority over community resources

and territories and constructing a state-like 'mask' that they are promoting rural community development and sustainability. Community members and groups, in contrast, respond to the presence of corporations and that projection of authority by organizing to protect their lands, resources, health, and livelihoods, another responsibility that is - at least on paper - assumed by the state. However, the respective positionings of extractive corporations and local communities vis-a-vis the state directs the reasons and purposes for which these differing state-like roles are realized. I argue that while communities may be filling a hole left by the politics of abandonment, mining companies are explicitly *provided* state-like powers through political and economic support from state and international institutions.

The social-environmental conflict between Nexa Resources S.A. and the community of Carhuamayo is once again an excellent case in point. When Nexa began the Shalipayco Project in 2015, the company initiated numerous CSR programs, providing extraction-contingent services for the town of Carhuamayo and *centro poblado* (a special rural subdivision or 'population center') of Shalipayco. The corporation's external relations team brought engineers and construction workers to fix damages to and generally improve upon the District Municipality building and gave out school supplies such as notebooks, journals, pens, and markers to students at the town's two public secondary schools, Jorge Chavez Dartnell and Santa Rosa de Carhuamayo. In one instance, in April 2019, representatives from Nexa's external relations team performed an Earth Day play for students, teachers, and parents at Santa Rosa de Carhuamayo in the school's concrete courtyard. The production was centered around themes of *conciencia ambiental* and community development, intending to showcase the important role that mining companies have in contributing to positive environmental and social outcomes. In response to Nexa's intervention in Carhuamayo, and because residents of the town started noticing changes

in the water from Laguna Yanacocha and its tributaries, community members began filing formal complaints with MINAM, MINEM, ALA, ANA, and the District Municipality. In 2017, after these complaints were met with little action, these community members formed FEDAC with the goal of preserving water quality for communities in the District of Carhuamayo by halting mining exploration through grassroots strategies (Mendoza and Elias 2021). In the years since Nexa arrived, FEDAC - in conjunction with other community leaders and groups - has organized numerous measures against the company, including anti-mining marches throughout the District centered around the well-known mantra *Agua Si, Mina No* (water yes, mining no). The formation of FEDAC and its consolidation of power within Carhuamayo was thus a direct result of state abandonment (Mendoza and Elias 2021). Nexa assumed top-down governance functions (under the guise of CSR) due to the state granting the company significant political and economic power and turning a blind eye to local environmental degradation; FEDAC, in contrast, sought to fill the gap left by the state's abandonment of responsibilities toward addressing constituent concerns and demands. The formation of new roles, responsibilities, and powers by non-state actors in Carhuamayo drastically shifted power relations within the mining-community interface, as new centers of power emerged and novel types of socio-institutional relationships were established.

The political nature of CSR and the assumption of state-like roles by non-state actors have profound spatial impacts across highland Junín and Pasco. Here, the power-geometries of extractivism are especially striking. There are vast amounts of power and capital that are accumulated by the state and mining corporations yet not widely circulated throughout communities around Lake Junín. In this sense, just as the uneven geography of extractivism is characterized by the development in one place that is dependent upon degradation in another, the

power-geometries entrenched within the mining-community interface produce space unevenly because the concentration of power in one area is dependent upon depriving another place of power and agency. Moreover, these power-differentials are explicitly driven by repositionings of state institutions, private entities, and community groups; this suggests that space is dynamically produced as these many actors - both old and new - seek to leverage their own forms of power and influence. Extractive space around Lake Chinchaycocha is therefore continually shaped by the interplay between state abandonment, the emergence of non-state actors, and uneven distributions of political power and financial and produced capital. This also suggests that there are significant temporalities contained within the social production of extractivism around the RNJ since actors can both gain and lose power over time. The suspension of the Shalipayco Project, for instance, is by no means the end of zinc extraction in the District of Carhuamayo but rather an opportunity for new corporations to intervene at Laguna Yanacocha as well as an alteration of social relations within Carhumayo in the form of novel objectives and roles on the part of FEDAC.

III. Neoliberal extractive processes and ideologies in central Andean Peru

That mining corporations use CSR to amass private power under conditions of state abandonment and direct community responses to extractive operations speaks to the impacts of the neoliberalization of extractivism. As previously mentioned, the political, economic, and social reforms instituted by Alberto Fujimori in the 1990s 'neoliberalized' Peru's extractive sector by deregulating mining, opening up mines to foreign investment, and generally limiting the role of government, all with the goal of maximizing profits earned from exports. Yet neoliberalism should not be understood as merely an economic model. Instead, as argued by Harvey (2005), it is an *ideology* grounded in the notion that 'progress' and 'development' can

best be advanced through strong private property rights, free markets, free trade, and a general reduction of the scope of the state by privatizing the public sphere. He claims that these are ideological principles because they have become hegemonic, with "pervasive effects on ways of thought to the point where it has become incorporated into the common-sense way many of us interpret, live in, and understand the world" (Harvey 2005). Cervantes (2013), similarly, argues that neoliberalism must be understood by examining the extent to which it 'submits' social life to requirements of the market. These ideas loosely draw upon Polanyi's (1944) idea of *embeddedness*, a concept utilized to describe the ways in which market society (a society where markets are the main form of exchange of goods and services) has sought to 'embed' social relations *within* the economy. The irony here, as Polanyi points out, is that although neoliberalism seeks to reduce the power of the state, government is actually needed to ensure the success of the free market by continually configuring political economic arrangements that are conducive to profit maximization.

It is thus useful to conceptualize extractivism in Peru as a neo-extractivism, which is a fundamentally neoliberal ideology: it prioritizes profit over collective well-being, privatizes subsoil resource access and use, and relies on voluntary measures and private initiatives to formulate subsoil resource governance. Furthermore, the temporalities of mining and power imposed upon communities through CSR programs have specifically fostered internalizations of neoliberal ideology within communities through the domain of extractivism. As a result, it contributes to the social production extractivism around Lake Chinchaycocha by fueling pervasive and hegemonic beliefs of what development looks like - what actors it involves, what it does and for what goal(s), and whom it benefits. In the case of mining activity around the RNJ, these ideas are promoted and hegemonically understood as the following: (1) extractivism

involves private transnational mining corporations, with limited government involvement; (2) extractivism engages in the consumption of resources and generation of massive profits in order to promote national-scale economic development; and (3) extractivism benefits the entirety of the country, as every citizen prospers from national development. Bureaucratic orderings of social and political life throughout Andean Junín and Pasco are then further entrenched, as people in the area simultaneously see themselves subjected to the distribution of extractive costs and benefits yet also abstracted from the decision-making structures and forces that drive such distributions. Andreucci and Kallis (2017) call this process a 'discursive naturalization' of extraction-based development that is constructed through narratives of improvement and sustainability. Around the Reserve, this normalization of neo-extractivism is specifically shaped by social interactions within the mining-community interface (relations between the state, the private sector, and communities). The result is an 'extractive imperative' (Van Teijingen 2016): the emergence of an omnipresent social space that prioritizes resource extraction-based economic growth in the region. This notion will be explored in greater depth in the subsequent section of this chapter.

One of the most notable forms that neoliberal narratives of improvement and sustainability surrounding extractivism have taken within highland Junín and Pasco is that of 'sustainable development.' Although the concept is notoriously contested and rather ambiguous across academic literature, sustainable development generally refers to either the call for or policies aimed at economic development that guarantees the social and environmental security and well-being of the planet and its inhabitants (Sneddon et al. 2006). Many interview participants – even conservationists and Reserve *guardaparques* – invoked the concept when discussing the mining around Lake Junín, stressing the importance of mining for "all peoples, for

every country" (P15) while also noting that it needed to be balanced with positive environmental outcomes. As such, the issue of sustainable development was often framed in the context of 'sustainable' or 'responsible mining', centered around balancing seemingly contradictory priorities, responsibilities, and objectives. Along that vein, numerous scholars have theorized that sustainable development is a contradictory idea rooted in the capitalist mode of production, utilized to facilitate the expansion of national and international neoliberal policies. Cervantes (2013), for instance, argues that sustainable development is itself a neoliberal construct; he states that the idea of using sustainable development as a means to eradicate the social and environmental degradation produced by capital accumulation has turned the concept into an 'economic calculation.' This, therefore, means that transnational mining companies, backed by the state and using CSR as a political instrument, invoke the construct of sustainable development to "sustain development" and continue business-as-usual (Cervantes 2013).

Neoliberal development discourses that are inscribed within extractive activity around the RNJ have also played a vital political role for the Peruvian state. Because mining was territorially produced in the Departments of Junín and Pasco, the state's focus on neo-extractive economic growth in the service of national progress was selectively territorialized there as well. In other words, the Andean zones of Junín and Pasco constitute both a *process* and *product* of state-building based on the selection of the region as a driver for country-wide development at the expense of local environments. Vela-Almeida (2018) demonstrates this well, explicitly stating that the definition of national economic interests is an "intrinsic character" of state-building and noting that processes of territorial partitioning are fundamental to state-formation within neo-extractive contexts. Such a conceptualization is useful in illustrating that the prioritization of economic growth in Junín and Pasco has reshaped the region as a contested site

with political and conflict agency. Similarly, state-building in the areas around Lake Junín have been and still are characterized by power-laden interfaces, where dynamic and volatile relations unfold across multiple scales. Historical actors such as colonial settlers and missionaries as well as more recent actors like artisanal miners, domestic and transnational mining corporations, state agencies, and NGOs have all driven the formation of the Peruvian state in highland Junín and Pasco. The interface(s) between these actors, where their own identities, imaginaries, and knowledges encounter each other, significantly contribute to the emergent nature of social space across the landscape (Rasmussen 2015; Van Teijingen 2016). The power-geometries at play here are again of particular importance, as these actors are positioned and repositioned with respect to one another in different ways at different times and different places as each seeks to project power and influence.

The hegemonic nature of extractivism – fueled by transcalar processes and interactions within the mining-community interface – thus has extensive social-ecological and spatial implications for the ways in which resource management is undertaken around the Reserve. In one sense, it has assimilated protected area management into a space overwhelmingly shaped by economic growth, the consumption of natural resources, and dramatic reconfigurations of social and political life. On the other hand, however, it is simultaneously contextualized within other hegemonic notions of conservation instilled by both state and non-state actors; perceptions and understandings of sustainable development in Junín and Pasco, for example, are informed just as much by *conciencia ambiental* as they are by internalizations of neoliberal philosophy. To understand these complex transformations of resource governance, the third part of this chapter will seek to unpack the ways in which protected area conservation and subsoil mineral resource extraction interact to co-produce social space around Lake Chinchaycocha.

Part 3: The Co-Production of Protected and Extractive Space(s)

As distinct forms of resource governance, protected areas and subsoil metal mining are seemingly incompatible and contradictory: one aims to conserve and protect landscapes, ecosystems, and species while promoting local livelihoods and rural development; the other aims to generate large amounts of capital and export the resulting profits by extracting and depleting natural resources. Yet as this thesis has shown thus far, in Peru, these seemingly incompatible land use designations are not mutually exclusive, often converging in the same geographic area. Bury and Norris (2014) even argue that the Peruvian state is intent on facilitating the coexistence of protected area conservation and subsoil mineral resource extraction. Such a notion necessitates an exploration of the multilayered and interscalar ways that conservation and extractivism influence one another. From a production of space perspective, moreover, it is essential to understand how and the extent to which they are capable of co-producing space in the same geographic area. The final discussion chapter of this thesis seeks to answer these particular questions, conceptualizing conservation and mining as emergent social spaces that together shape social relations, environmental decision-making, and political and cultural life in novel ways.

There has been important yet limited geographical and political ecological research conducted on convergences of conservation and extractivism that have sought to describe the relationship between the two resource management regimes. Rasmussen and Lund (2018), for instance, explore the parallel dynamics of resource extraction and biodiversity conservation, characterizing the two as 'commodifications' of nature based on frontier dynamics and territorializations of resource control inherent to the expansion of capitalism. The term 'frontier' here refers to emergent physical and social spaces that represent the discovery or invention of

new resources, thus often subjecting them to volatile and violent dynamics of colonialism, natural resource exploitation, and resistance; they thus claim that both conservation and mining in Latin America are manners through which spaces are continually reconfigured, as frontiers dissolve existing social orders while the territorialization of resource control reshapes and reestablishes those orders in new ways (Rasmussen and Lund 2018). Vuola (2022) also offers especially instructive insights into convergences of conservation and mining. Drawing upon the concept of the frontier as well, intersections of conservation and mineral extraction are described as 'double frontiers' (Vuola 2022): places and moments where two or more resource and/or commodity frontiers overlap in dynamic, complex ways. He further explores the particularities of conservation-mining intersections, proposing that they can be categorized as either *competing* (where diverging rules, practices outcomes do not allow co-existence), *co-ignorant* (co-existence marked by temporality and flexibility of both), or *synergistic* (cooperation between the two characterized by institutions and practices that serve the same purpose, primarily enclosure and long-lasting territorialization arrangements) (Vuola 2022).

While conceptualizing conservation and extractivism in central Andean Peru as frontiers is useful in underscoring their emergent and relational qualities, the case of the Reserve problematizes the arguments outlined above. Specifically, the intersection of conservation and mining around Lake Chinchaycocha shows that defining double frontiers as competing, co-ignorant, or synergistic is a theoretical reduction of their complexities and that conservation-mining intersections can express seemingly paradoxical amalgamations of all three. The case of the RNJ is neither competing (because coexistence persists despite diverging rules and practices), co-ignorant (because neither conservation nor mining is temporary in the region), nor synergistic (because there is little to no formal cooperation between the two sectors and because

mining activity does not explicitly occur *within* Reserve boundaries). Employing a production of space framework, furthermore, contributes to different understandings of the emergence of spaces that challenge Vuola's claims. Doing so highlights that the multilayered interfaces that constitute both conservation and extractivism are not mutually exclusive. Instead, these webs have become continually entangled with one another in numerous ways, in numerous places, and at numerous times, resulting in a dynamic relationship of co-production characterized by aspects of competition, co-ignorance, and synergy all at once.

The general claim argued within this chapter is that conservation and extractivism - as social processes and products - are co-emergent, continually shaped and (re)shaped as different actors, institutional arrangements, and political economic forces interact with each other. Taken together, conservation and extractivism co-produce space through the territorialization of resource control, often as a means to consolidate state power, which fundamentally "challenges and replaces existing patterns of spatial control" (Rasmussen and Lund 2018). To demonstrate how these complex processes and relationships produce space around the Reserve, I will explore three specific ideas. First, I argue that conservation and mining, as more than mere resource governance strategies, constitute simultaneously conflictual yet interrelated hegemonies. Their relationship, then, represents a hegemonic multiplicity that showcases what I call the *politics of prioritization*. Second, because conservation activity and subsoil mining in highland Junín and Pasco are both social interfaces, I propose that the relationship between the two is also a multilayered interface. It is a complex web of relations characterized by emerging and disappearing transcalar socio-institutional interactions between actors associated with each sector as well as actors embedded in both. Finally, I will use the Upamayo Dam on the San Juan River as a case study of how these complex processes have manifested in the region. This will illustrate

the importance of physicality, sociality, and discourse in the co-production of space and situate the RNJ's conservation-mining convergence in broader political economic contexts.

I. Multiple hegemonies and the politics of prioritization

In one sense, conservation and mining can be understood as power-laden spatial appropriations, each staking claim to land, water, and other types of resources in highland Junín and Pasco. Although they each appropriate different resource domains (that is, aboveground versus subsoil), their convergence in the same area creates contestation over space and the landscape itself. Yet that contestation is not a 'resource conflict' in the traditional sense, where different actors are engaged in direct or even explicitly violent battles grounded in resource scarcity, use, and access. As argued by Turner (2004), political ecology research has contributed to more multidimensional, complex views about the genesis of resource-related conflict. Similarly, Escobar (2006) states that conflicts over natural resources are rarely merely about the material resources at stake and are instead profoundly grounded in and influenced by constructs of social life, politics, culture, and economics. In this sense, the 'conflict' between conservation and mining around Lake Chinchaycocha is a conflict of worldviews and landscape imaginaries: it is formed by the intersection of different knowledges and the diverse ways in which individuals and groups experience, understand, and ultimately create their lived realities. In other words, the conservation-mining convergence is *ontological*. It is a dynamic and emergent social space produced by intersections of different constructed realities and perceptions of those realities, which are fueled by hegemonic discourses surrounding social and political life, nature, development, and the roles of the state and the private sector.

To understand the hegemonic nature of Junín and Pasco's resource governance convergence, it is necessary to first examine what is meant by the concept of hegemony. As

proposed by Gramsci (1971), hegemony refers to forces by which the worldviews of powerful actors become naturalized and accepted as the cultural norm. In this sense, it is neither a set of policies nor an ideology. Instead, it is a complex web of social relations produced through power differentials and social stratification. Although the concept was originally invoked with specific regard to state authority, the neoliberal turn of the 1980s has warranted understandings of the role that private entities play in reinforcing hegemony, as the reduction of the public sphere has granted them state-like governance functions (Plehwe 2016). As such, hegemony is well-posited to examine the spatialities of both conservation and mining around Lake Chinchaycocha.

The RNJ as a conservation regime is hegemonic in numerous ways. Its formation as a protected area, foremost, is indicative of widespread hegemonic notions of biodiversity conservation - grounded in the pervasive human-nature dichotomy - that assumes the best way to preserve ecosystems and landscapes is to remove people from the area and restructure their access to once-used space and resources (Shultis and Heffner 2015). Moreover, although the Reserve is a territorialization of resource control, its influence spreads beyond its boundaries into the buffer zone and beyond. Constellations of actor relations in the buffer zone and interactions that unfold across the conservation-community interface, such as community-oriented management toward preserving the *rana gigante* and *zambullidor*, serve to diffuse *conciencia ambiental*. Power differentials between resource users and resource managers further serve to fuel the hegemony of protected area conservation by implicitly prioritizing biophysical, scientific knowledge and reinforcing/expanding state authority. All of these mechanisms produce particular understandings of what conservation looks like for buffer zone communities: (1) it is bureaucratic, the responsibility of high(er) level state and non-state authorities like *guardaparques* and NGO conservation biologists and (2) it is a service that is distributed to

communities, a product of resource managers that must be instilled within local people (i.e., *sensibilización*).

Subsoil mineral extraction in highland Junín and Pasco is profoundly hegemonic as well. As discussed in the previous chapter, mining has historically been utilized by both the Peruvian state and private transnational mining corporations as a state-building process. As a result, neo-extractivism (that is, the neoliberal ideology of mining) is now leveraged by the same actors to normalize and diffuse narratives of sustainability, sustainable development, improvement, and national progress across the mining-community interface. Furthermore, CSR is used by corporations - in part due to powers allowed to them by the state - to reproduce these narratives and explicitly influence anti-mining mobilization in response to extractive projects (Gamu and Dauvergne 2017). The social space produced by these processes can be described as an *extractive imperative*: a politicization of natural resource extraction that places paramount emphasis on economic growth in the name of national-level development and produces 'appropriate' ways of thinking and acting in relation to mining projects and associated territorial conflicts (Van Teijingen 2016). The extractive imperative is widespread, circulating not only around high Junín and Pasco but the country of Peru as a whole. Understood in this way, it becomes clear that mining corporations in Junín and Pasco are not explicitly appropriating Reserve space per se; rather, it is that the power they produce and diffuse across the landscape (re)produces a hegemony of extraction, collapsing space by degrading the biophysical properties of Lake Junín and in turn impacting the health and livelihoods of local communities.

Thus, the hegemonies of conservation and mining in highland Junín and Pasco are not mutually exclusive. Instead, they co-exist, precisely because they are both grounded in concentrations and projections of both state and private power. This 'hegemonic multiplicity' has

powerful socio-spatial implications, constructing Reserve-adjacent communities as subjects to both conservation and mining - yet under the guise of 'community-based resource management' and 'sustainable development,' respectively. Robbins (2011) calls this the concept of *environmental subjects and identities* to describe how institutionalized and power-laden environmental management regimes have led to the emergence of new identities, "self-definitions, understandings of the world, and ecological ideologies and behaviors." At the same time, however, new environmental regimes can create new opportunities or imperatives for local people to secure and represent themselves politically (Robbins 2011). The spread of *conciencia ambiental* around the Reserve, particularly with respect to the Frog Guardians program initiated by SERNANP and the Denver Zoo Foundation, is an excellent case in point. It showcases how even a community-oriented resource management system can produce hegemonic narratives of environmentalism, leading to new worldviews and social positionings for those participating in the program.

For all their similarities, however, the hegemonies of conservation and extractivism also diverge in important ways. Although protected area management and subsoil metal mining may both be driven by a deepening of state and non-state power, they have distinct rule-making structures and functions, contrasting and even contradictory goals, and undeniably different social-ecological outcomes. To draw upon the social production of space, they represent vastly different spatial imaginaries – collective understandings of space, produced in relation to the lived experiences, perceptions, and conceptions of people living in that space (Lefebrve 1991). In Andean Junín and Pasco, both conservation and mining abstract space to a degree, yet use space in contrasting ways and look toward very different futures and possibilities. In this way, they structure and co-constitute social practices and have physical, material effects. It is necessary,

though, to take seriously the question of power when examining the relationships between the hegemonies of conservation and mining. As Morozov (2021) states, hegemonies can be uneven, differentiated by the respective political, economic, and social relations/forces that drive them. Within Peru's neoextractive paradigm, the hegemonies conservation and mining are positioned very differently in terms of economic power and political support. For example, in 2021 SERNANP received approximately 83 million Peruvian soles (about $22 million) in budget allocations from the government while MINEM received more than 1000 million soles (about $270 million) (Profonanpe 2022; MINEM 2022).

The material and financial differences between SERNANP and MINEM are but one representation of the contradictory nature of the state: it is both a promoter of and defender against economic development, tasked with aiding development toward economic expansion yet also assuming the responsibility – at least on paper – of protecting the natural environment from the consequences of such development (Collard et al. 2020). In the case of highland Junín and Pasco, the state supports the large-scale extraction of silver, zinc, copper, and lead while also establishing the RNJ as a territory intended to safeguard a part of the landscape from the detriments of that extraction. This fact challenges notions of state abandonment found throughout the literature on Latin America, which typically claims that the relationship between communities and the state is one of absence or abandonment whereby the material conditions of peasant villages are ignored and the government refuses to drive development in rural areas (Goldstein 2005 and 2012). Yet the state has a significant presence around Lake Chinchaycocha in the form of the Reserve, and for better or for worse, does in fact work to contribute to the development of rural livelihoods within the buffer zone. Highland Junín and Pasco have

therefore not been abandoned per se, but are continuously (re)positioned vis-a-vis the state based upon the entrenchment of hegemonies that simultaneously promote protection and extraction.

I thus propose the concept of the *politics of prioritization* to explain the relationship between the internal contradictions of the capitalist state and the processes of state abandonment. The politics of prioritization refers to the ability of the state to prioritize one goal, resource, or discourse while comparatively ignoring another, despite a fundamental connection between the two. The concept is grounded in four key principles. First, the politics of prioritization underscores that abandonment is not simply a matter of the state 'being there' or not, but rather a political matter of when, where, how, and for whom the state chooses to manifest. This conception is in part informed by Rasmussen's (2015) definition of abandonment as "the conditions under which the state makes its presence known." Second, it places special emphasis on uneven material and social relations, proposing that the prioritization of one location, resource, or cultural discourse is explicitly contingent upon ignoring another and vice-versa. In a basic sense, this would mean that a prioritization of extractive activity is predicated on the expense of conservation goals or outcomes, either nearby or elsewhere. Third, the politics of prioritization is a performative function of neo-extractive systems whereby the state can preserve its legitimacy with respect to environmental issues by promoting ostensible successes (i.e., the presence of a protected area) while, in actuality, failing to adequately address the underlying causes of such issues. Lastly, and similarly, the politics of prioritization is not set in time nor space; rather, the state (and private sector) can selectively 'hegemonize.' Put differently, powerful entities can choose when and where a discourse is culturally normalized. With these ideas in mind, the fact that the Peruvian state can facilitate and promote the extraction of subsoil metals around Lake Chinchaycocha while at the same time ignore the consequences of that

extraction on local environments and livelihoods by defaulting to the existence of the Reserve is a quintessential case in the politics of prioritization.

The ways that the politics of prioritization unfolds around the RNJ has profound impacts on the production of space across Andean Junín and Pasco. It is actor-oriented, inscribed in the extensive web of interactions between actors with a stake in the region. It thus continuously alters the form assumed by the state as well as restructures the position(s) of other actors - such as communities, NGOs, transnational mining companies, and even other sub-state entities - in relation to the state. At times, "the state" manifests as a combination of MINEM and the extractive industry, promoting the extractive imperative by allowing corporations to accelerate EIA procedures without contacting SERNANP (as described by interview participant P18); other times, it makes itself known in the form of SERNANP and its NGO partners, disseminating *conciencia ambiental* at CGRNJ meetings in the Huayre Interpretive Center. As a result, other actors are forced to perpetually adapt the ways they leverage their resources, influence, and agency to meet their own goals and needs. Community claims against the hegemonies of conservation and extractivism – such as FEDAC's anti-mining activism against Nexa – can then be understood as both an assumption of novel roles and an insistence on being taken seriously. The community, as and when needed, organizes to fill the gap left by the state "secure[ing] the territories that form the basis of rural livelihoods, safeguard[ing] the integrity of communities, facilitate[ing] access to clean and plentiful water" and demanding that communities be treated with "due respect" (Rasmussen 2015). In these ways, the politics of prioritization is a fundamentally *spatial* phenomenon: it is both a process and product that continually drives the emergence of the physical and social landscape of highland Junín and Pasco. It is characterized by a spatial pattern can be markedly fragmented, as some spaces are constructed as protected

while others are slated for extraction. This notion further complicated by the fact that some communities such as Carhaumayo are situated adjacent to both the Reserve and extractive project sites, rendering them particularly subjected to both the hegemonies of conservation and mining at the same time.

II. *The mining-conservation interface and webs of relations*

If protected area conservation and subsoil metal extraction each constitute social interfaces between numerous stakeholders, then the places and times where the two regimes encounter each other should also be conceptualized as an interface. Furthermore, characterizing this interface as composed of a complex and emergent web of relations is useful in understanding how the politics of prioritization both dictates and is dictated by these stakeholder interactions. To this end, the conservation-mining interface is not static but instead a process. Similar to earlier conceptualizations of the conservation-community and mining-community interfaces, it is grounded in and defined by a few crucial assumptions. First, there are a plethora of actors embedded within conservation-mining relations, many of which overlap between the two sectors, such as OEFA. This notion further highlights the contradictory nature of resource governance agencies and institutions. Second, there are thus many possible permutations of actor encounters that are contingent upon when, where, and the purpose for which they occur. This serves to constantly produce novel types of actor relationships, in turn producing novel types of space(s). Third, these relations are transcalar, linking actors both within and across multiple spatial scales: (1) the local level, within Reserve-adjacent and buffer zone communities; (2) the regional level, encompassing Lake Junín, the Reserve, and its buffer zone; (3) the Department levels of Junín and Pasco, where regional government agencies and municipalities are of primary concern; (4) the national level, in which federal government entities have significant power; and (5) the

global or international level, as both transnational mining corporations and the countries that receive products and profits from extraction have a stake in the convergence between conservation and mining around the Reserve. Lastly, the multifaceted relations that occur across this web of actors are, at their core, relations of power characterized by intersections of differing knowledges, worldviews, lived realities, material resources, and political power.

To understand the forms that the interface can assume as well as how the politics of prioritization is deeply inscribed within these varied stakeholder interactions, I will explore two specific cases pertaining to the Agency for Environmental Assessment and Enforcement (OEFA) and the Lake Chinchaycocha Environmental Management Committee (CGALC), respectively. OEFA, as discussed in Chapter IV, is a specialized technical body attached to MINAM that is responsible for the supervision and enforcement of environmental management in Peru. To this end, the agency has three main functions: (1) assessment, in which it conducts evaluations of both environmental conditions as well as projects, plans, and programs that have an impact on natural resources (this process includes EIAs); (2) supervision, in which the agency monitors and inspects projects or activities to ensure compliance with environmental regulations and permits; and (3) enforcement, whereby it has the authority to enforce compliance by imposing sanctions on entities that degrade natural resources, including fines and corrective measures (P17). Although OEFA oversees numerous sectors, both public and private, in highland Junín and Pasco it most frequently engages with the extractive industry, maintaining relationships with MINEM and mining corporations like Volcan, Nexa, and Activos Mineros. It is thus responsible for assessing, overseeing, and enforcing compliance upon these companies – particularly Cerro S.A.C. (a subsidiary of Volcan) – that discard wastes such as mining tailings and other extraction

byproducts into tributaries within and immediately outside of Cerro de Pasco. These tributaries then flow the San Juan River to eventually carry those wastes into Lake Chinchaycocha.

At the same time, OEFA maintains an institutional relationship with SERNANP. On a basic level, the two institutions are intrinsically connected through their parent agency, MINAM. Specifically, OEFA has on multiple occasions coordinated with SERNANP to take formal complaints concerning environmental degradation within and adjacent to protected areas and at times trains *guardaparques* and other employees to conduct environmental monitoring and assessment of that degradation (OEFA 2023). In the case of Lake Chinchaycocha and the RNJ, SERNANP managers frequently meet with OEFA specialists regarding mining contamination in the San Juan River and lake itself; moreover, OEFA has on multiple occasions received formal complaints issued jointly by SERNANP and other entities against mining corporations that contribute to water and soil pollution within Reserve territory (P3 and P10). In that regard, OEFA is a manifestation of the conservation-mining interface, facilitating social interactions and institutional relationships between SERNANP, MINEM, and mining companies.

Yet despite the presence of a relationship between SERNANP and extractive corporations that is mediated by OEFA, addressing mining contamination within and around the RNJ is a difficult, power-laden task. This is because OEFA's role in facilitating inter-institutional relationships is embedded within the politics of prioritization in manners that undermine and delegitimize the agency's enforcement responsibilities. This occurs in numerous ways. Foremost, within the neo-extractive paradigm, in which mining corporations garner massive profits and boast significant political power, monetary penalties like fines are often ineffective in curbing contamination. Numerous studies, for instance, have found that there is little correlation between increased financial penalties and decreased rates/instances of

environmental pollution and degradation (Prechel and Zeng 2012; Stretesky et al. 2013). Second, as previously noted in Chapter IV, OEFA can administer random visits to project sites to inspect extractive practices and mines themselves, yet mining companies can refuse these visits at the cost of a citation. However, the cost of these fines are in fact less than the corporation would pay if it were formally 'caught' contaminating by OEFA (P3). Finally, OEFA is subjected to the politics of prioritization in ways that incur corruption, leading to an inability or unwillingness to properly engage with EIA processes in the RNJ's buffer zone. One SERNANP *guardaparque* (P18), for instance, described that mining companies seeking to begin exploration in the buffer zone have frequently initiated intervention processes with MINEM and OEFA without consideration of formal documents submitted and requested by the Reserve. This notion exemplifies the tendency of the politics of prioritization to allocate resources toward the production of one space at the specific expense of another. Moreover, the interview process revealed that water quality and contamination in Lake Junín is considered one of the main problems that OEFA has sought to address on a national level (P17), stressing the ability of the state to perform discursive legitimacy in matters of environmental protection and governance.

The CGALC is another way that the conservation-mining interface is formed. It is an inter-institutional committee first established by Plan Chinchaycocha in 2008 and continually renewed every four years with the objective of recovering the quality of Lake Junín and its surrounding environment(s) through sustainable management actions by state and non-state actors at multiple scales. In the present day, as described by an OEFA social-environmental specialist (P17), the CGALC meets in Lima once a month to primarily address mining contamination and questions of damming and discharge from the Upamayo Dam on the San Juan River. These concerns are inherently multilateral, requiring both the presence and collaboration

of numerous stakeholders that often have very different positionalities and objectives. The CGALC has responded aptly to the multisectoral nature of such problems, producing a meeting space for numerous actors including SERNANP, regional authorities from the Departments of Junín and Pasco, ANA, OEFA, Electroperú, MINEM and DREM, and DIRESA (MINAM 2017). As already noted, mining corporations such as Volcan, Cerro S.A.C, and Activos Mineros are incorporated into the committee on paper, but largely do not attend meetings (P10 and P17). However, just as OEFA is complicated by the politics of prioritization, so too is the CGALC. Firstly, the emphasis on the 'sustainable use' of Lake Chinchaycocha situates the committee within the sustainable development paradigm, reducing the management of the lake and its surrounding landscape to hegemonic discourses of neoliberal logic. Secondly, the fact that mining companies are not held accountable for non-attendance suggests that the CGALC seeks to abstract or decouple these corporations from the impacts they generate on the Reserve, the ecological integrity of the lake, and the health and livelihoods of local people. This is a prime example of the politics of prioritization, allowing the state - in the form of the committee - to construct a legitimized image through discourses of 'sustainability' and 'sustainable development' while actually (re)producing social and environmental degradation.

Spatially, the examples of OEFA and the CGALC underscore the power-geometries at play in the conservation-mining interface. Different assemblages of actors that encounter one another in different places – be they rangeland in the Reserve's buffer zone, the Provincial Municipality in the city of Junín, the regional capitals of Huancayo and Cerro de Pasco, or the nation's urban capital of Lima – constitute differing concentrations and imbalances of power. In this sense, as the issue moves up the scalar ladder of the conservation-mining interface, it also moves farther away from the actual site of convergence around the RNJ, intertwining notions of

place, time, and power (Massey 2003). Accordingly, the stakeholders also become more powerful, entrenched, and bureaucratic the farther away the issue travels from the Reserve, continually incorporating new actors into governance processes. Such a geographic dispersion fosters a situation in which those with the most decision-making power are located in geographically distant places. Human geographers and political ecologists have long sought to explain this tendency, often viewing it as an innate function of centralized governance in which central and local governments that are often geographically distant from each other foster relationships across scales (Macleod and Goodwin 1999). Bulkeley (2005) further expands upon that claim, arguing that governance involves "both political processes of scaling and rescaling the objects and agents of governance." Similarly, Boillat et al. (2018) proposes that it is necessary to understand natural resource governance as a cross-scale process involving distant social-ecological ties. As a quality of centralization resource management and bureaucratic systems, then, the spatial dispersal of decision-making authority away from Lake Chinchaycocha reveals a paradoxical approach to protecting landscape, biodiversity, and livelihoods in Andean Junín and Pasco. On the one hand, community-oriented management is promoted with respect to the RNJ as a protected area, but on the other, centralized, 'out-of-site' management is promoted with respect to the other pressing issues facing Lake Junín. Once again, this paradox is indicative of how the politics of prioritization has pervaded the goals, priorities, and discourses that pertain to protecting and extracting natural resources in Peru.

It is therefore useful to characterize interactions that form the conservation-mining interface as a spatial phenomenon (re)produced by power-laden interactions between actors both near and far, contingent upon their absence, presence, or roles they assume when present (Lefebvre 1991). Put another way, environmental governance of the RNJ/Lake Chinchayocha

and subsoil resources located around it can be thought of as an emergence (that is, a *process* and a *product* at the same time) of transcalar relations and the politics that play out across those scales (Macleod and Goodwin 1999). It must be noted that these scales are not an ontological or epistemological given, but rather socially constructed and thus implicated in the production of *space* (Marston 2000). The social construction of governance scales vis-a-vis the RNJ and Lake Chinchaycocha, then, is a political process, reshaped and contested over time as actors leverage power and influence at the boundaries and outside of their usual 'scales,' thus producing new socio-spatial relationships. For instance, in-site visits to the Reserve by OEFA officials – who are normally centered in Huancayo, Cerro de Pasco, and Lima – form emergent and often transient relationships between local and regional actors (communities, SERNANP resource managers, NGO conservationists, and municipality authorities) and typically distant centers of powers. These insights further suggest that political ecology's traditional focus on 'chains of explanation' is perhaps too linear, implying vertical socio-spatial hierarchies. As a result, some scholars have advocated for political ecology to move toward "complex assemblages" or "webs of relations" (Escobar 2004; Rocheleau and Roth 2008). Rocheleau and Roth (2007), in particular, argue that complex connections between "local and transnational realities" necessitates conceptualizing multilayered, cross-scalar interactions as networks: relational webs marked by power that create and are created by territories.

III. The Upamayo Dam and the San Juan River

As this thesis has demonstrated thus far, the convergence of conservation and mining around the RNJ is simultaneously physical, social, and discursive. These respective dimensions are relational, and the ways that they interact to shape one another is an essential function in the co-production of conservation and extractive space in highland Junín and Pasco. To unpack the

relationality of the conservation-mining intersection, it is useful to explore a case study that represents all three domains - physical, social, and discursive - of that intersection: the Upamayo Dam, located on the San Juan River. As noted in Chapter IV, the Upamayo Dam is located on the northeastern edge of Lake Chinchaycocha, just outside Reserve territory but within the buffer zone (see Figure 8 on the next page). Originally constructed in 1932 by the Cerro de Pasco Corporation in order to generate hydroelectric energy for the company's extractive operations, it diverts the flow of the San Juan River into Lake Junín when closed and allow the river's natural southward flow into the Mantaro River to continue when opened (Rodbell et al. 2014). In 1993, during the onset of sweeping neoliberal reforms, Electroperú S.A. acquired ownership over the provision of electricity generated by the dam. Today, the Upamayo Dam generates 25-30% of electricity required for the entirety of Peru (P11).

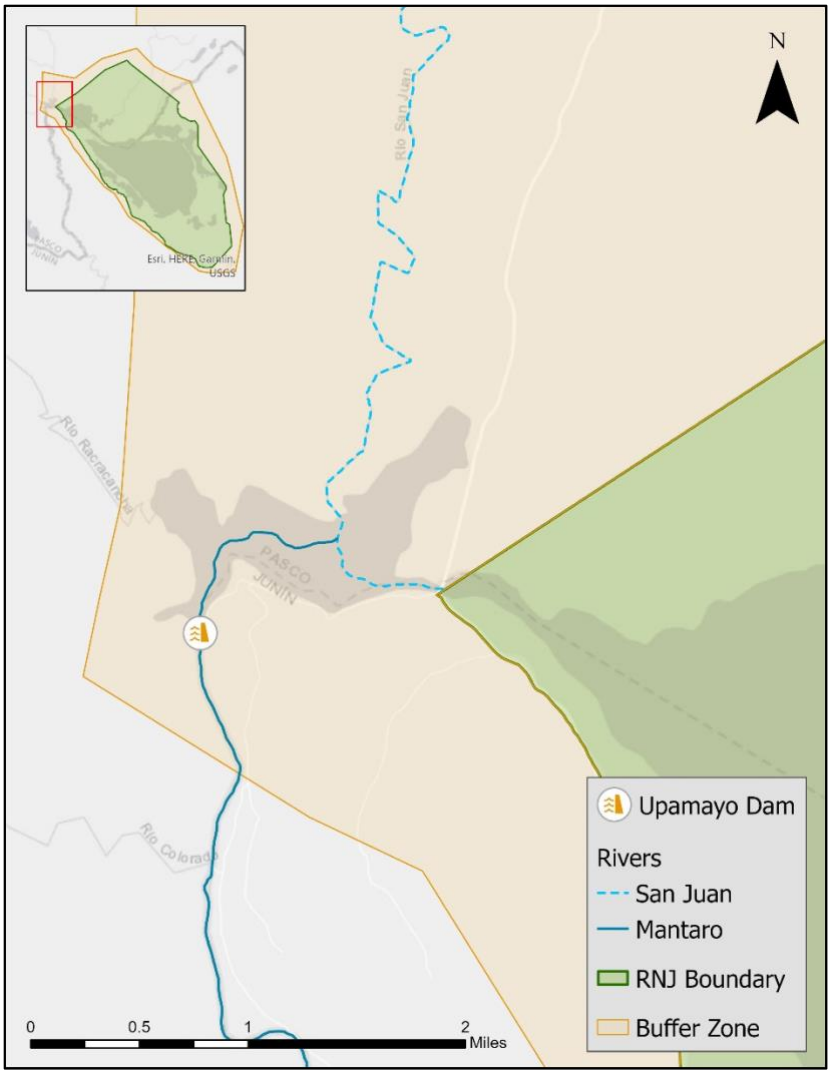

Figure 9. Location of the Upamayo Dam

In a general sense, the Upamayo Dam is a physical intervention in the landscape of highland Junín and Pasco. It is a material infrastructure that exacerbates the biophysical impacts of mining on the RNJ by seasonally backing up the San Juan River into Lake Chinchaycocha. Consequently, mining wastes such as tailings flow directly into the northern reaches of the lake, causing pollutants to build up in both the water and lake sediments. The combination of the Dam and the San Juan River, then, collapses physical space by connecting mining activity that occurs nearly 50km north of the Dam with the biophysical and ecological conditions of Lake Junín. In

addition to the direct impacts of the Dam itself, other infrastructures were and are required to construct and maintain the dam, such as reservoirs, channels, transmission lines and access roads (Shoobridge 2006). Its geographic location within the Reserve's buffer zone also represents a physical intervention into Reserve territory and management structures. The construction and ongoing operation of the Dam have resulted in the diversion of irrigation canals, sewers, and drainpipes from nearby towns and communities (Shoobridge 2006), leading to material impacts on health and livelihoods in the northern parts of the buffer zone. Taken together, these processes have transformed and restructured the natural and built environments of the area, creating new spatial configurations that have far-reaching impacts for the co-emergence of conservation and mining dynamics in the region.

Figure 10. The Upamayo Dam regulating the flow of the San Juan River

The Upamayo Dam also implicates social processes that shape the production of space around Lake Chinchaycocha. Different actors such as local communities, government agencies, private entities (Electroperú and mining companies), and NGOs converge to negotiate the ongoing use of the Dam (and by extension, Lake Junín itself) and its impacts in the region. However, these relations are differentiated socially and geographically, pointing to the power-geometries at play (Massey 2003). Interactions in which local communities are involved occur in the immediate areas around Lake Chinchaycocha itself and confer 'lower-level' conversations regarding the impacts of the Dam and mining contamination on rural livelihoods (i.e., the influence of seasonal discharge on the rotating use of pastures by ranchers during the dry and wet seasons). Interactions between government authorities, resource managers, and private stakeholders, on the other hand, are far more bureaucratic, concerning the 'sustainable use' of Lake Junín as a sink for hydroelectricity and how to balance priorities of local-situated conservation and national-level economic development. As such, these social relations are imbued with power differentials through the politics of prioritization, determining the distribution of social-environmental benefits and burdens, the inclusion or exclusion of certain actors from decision-making processes, and the legitimacy of different types of knowledges and worldviews. Moreover, as noted by Lefebvre (1991), these social practices are fundamentally spatial. They reflect emergent encounters between various actors with different positions vis-a-vis the RNJ and Lake Chinchaycocha, and thus influence how space is used, accessed, appropriated, and contested around the dam.

Discourses surrounding the Upamayo Dam and the San Juan River play a critical role in the co-production of space in the region. Discursive practices, including narratives about the Dam and the river and ideologies that frame how different actors relate to them, shape the ways

in which the conservation-mining convergence is understood. Different actors employ different discourses to frame the Upamayo Dam and its position on the San Juan River in different ways. Some, such as Electroperú, MINEM, and mining corporations, frame it as a source of economic development, a provider of energy and resources, and an agent of progress and modernization; others, such as state and non-state conservationists and local communities, while understanding the role the Dam plays, frame it as an ecological threat that alters the flow of water and spreads mining pollutants, a conservation challenge, and a violation of local land rights. Perhaps most important, however, are symbolic meanings attached to the Upamayo Dam and the San Juan River. Local people, resource managers and users alike, discursively point to the Dam and its location on the river as a symbol of the connection between mining and conservation, as it is where the impacts of mining on the RNJ begin and are most concentrated. The river in particular has been assigned symbolic importance. Its striking discoloration - normally a deep orange-red but at times shades of yellow or brown - has led local and even non-local people to call it "the Red River." These discourses can be thought of as representations of space (conceived space), illustrating how space is perceived, represented, and understood through language, narrative, and cultural practices (Lefebvre 1991).

In these regards, the Upamayo Dam and the San Juan River are neither a place nor a "thing." Rather, they are an emergent product in itself - a dialectical assemblage of infrastructures, processes, and practices that are part of both conservation and extractivism. Put differently, they are a physical, social, and discursive manifestation of the conservation-mining convergence, serving to connect and co-produce the two seemingly unrelated domains. With these understandings, the Upamayo Dam and the San Juan River are the result of meaning-making (or perhaps *space-making*) - a social, political, and material process by which actors

actively (re)create their lived environment (Pierce et al. 2010; Cresswell 2011). Accordingly, different actors can assign different – even diverging – meanings to the same space, which in turn shapes how space is produced through encounters of those different meanings. The emergence of the Upamayo Dam and San Juan River is, therefore, an inherently power-laden process in which different actors contest the use and purpose of the dam, and by extension, Lake Chinchaycocha itself. Behind governance practices, bureaucratic decision-making, and formal documentation are existential questions concerning what Lake Junín means, for what it should be used, and who it benefits.

Logically, then, the politics of prioritization has a significant impact on how meanings attached to the Upamayo Dam produce space. Drawing upon the politics of prioritization reveals how the state in conjunction with private bodies shapes and reshapes the use of the Dam by prioritizing certain meanings and discourses – such as the extractive imperative - or outright appropriating others – such as promoting narratives of sustainable development. For instance, the location of the Dam in the RNJ's buffer zone, and by extension its incorporation into SERNANP's decision-making considerations, indicates how protected area management has become subjected to the politics of prioritization and incorporated into neoliberal logic. Yet the differences between the current and present-day uses of the Upamayo Dam proves that it is not simply a function of the extractive imperative. In a country where 60% of electricity is generated by hydropower (Rodbell et al. 2014), the Dam's status as the producer of more than a quarter of this electricity escalates its position beyond the extractive imperative. Altering the flow of the San Juan River to extract value from it (energy generated from hydropower) can also be thought of as a form of extraction, however, which illustrates that subsoil mineral mining is embedded

within a hegemonic mode of production grounded more generally in natural resource appropriation.

This hegemony could be conceptualized, then, as a *production imperative*: an ideological commitment to the appropriation of natural resources, be they subsoil or above ground, as a logical, necessary, and - crucially - unavoidable "step toward higher levels of development" (Arsel 2016). The production imperative is defined by: (1) the supremacy of the state and its specific political and economic partnerships with the private sector; (2) a contradictory assumption, informed by the tenets of the politics of prioritization, that natural resource utilization and environmental preservation can co-exist (*decoupling*); and (3) a narrative of national progress and modernization whereby national-level development will trickle down to benefit all members of society. This final point underscores the connection between resource management and state-building in the Peruvian context. Accordingly, under the production imperative, the Upamayo Dam is a means of state-building and Lake Chinchaycocha itself is a contested, state-building space. Situated at the convergence of conflicting hegemonies, Lake Junín itself is emergent, formed by the co-production of conservation and extractivism. It is a landscape produced by the interactions between different imaginaries of 'progress': environmental preservation on the one hand, and resource appropriation on the other. At the core of these imaginaries are questions of the role that each has played and will play in the making of the Peruvian state.

Spatially, the production imperative is also a social product. It is an extensive social space largely produced through emergent transcalar relationships between actors, hegemonic discourses, and flows of political power and material resources. The politics of prioritization, moreover, reinforces these processes by specifically constraining the ability of the RNJ to protect

the integrity of Lake Chinchaycocha and its surrounding landscape. The result is a paradoxical relationship between conservation and extractivism in which the two continually reproduce one another around Lake Junín. As the RNJ is spatially constrained and unable to effectively mitigate the social-ecological impacts of subsoil metal mining, and because the state and mining corporations fail to account for such impacts while promoting the production imperative, they serve to further entrench each other without any semblance of transformative change.

CHAPTER VI: CONCLUSION AND RECOMMENDATIONS

I. From a geography of convergence to a convergence of geographies

Around the RNJ, protected area conservation and extractivism produce unique types of space in surprisingly similar manners. As interfaces between the conservation sector, the mining sector, and local communities emerge, new relationships between actors near and far are forged, restructuring social space as well as the physical and built environments. Moreover, pervasive ideas of what conservation and mining look like extend themselves across this broad web of actors, fostering widespread entrenchments of these concepts within social, political, and cultural life. The resulting hegemonies of protection and extraction compete in some ways and ignore each other in others, as the Peruvian state picks and chooses when, where, and how to prioritize one at the expense of the other. This relationship can thus be viewed not as resource governance convergence, but rather as a convergence of *geographies*: constellations of physical, social, and discursive processes that are formed in the same area. Conservation and mining constitute contrasting spatial imaginaries, generate distinct social-environmental outcomes, and represent very different outlooks for the future of Peru, all at the same time. In nearly every way, they are poorly mapped onto one another. Yet around Lake Chinchaycocha and across the landscape of Andean Junín and Pasco, they reproduce one another in a paradoxical and ultimately vicious cycle.

Intersections of protected areas and extractive activity are not new. This is to say that I have not sought to prove that protected and extractive spaces can exist in the same geographic area. What is novel about this research, instead, is its findings regarding the dynamic *relationship* between the two. While it cannot claim that the particular relationship between conservation and mining around the RNJ is the case in all scenarios of resource governance

convergence, it has shown that drawing upon the social production of space can confer unique perspectives on protected area conservation, subsoil metal mining, and the ways that they become entangled. Specifically, by conceiving both protected areas and mining as social products, it has considered what occurs when two differing and dynamic social products simultaneously lay claim to space in the same geographic area. Accordingly, I have intended to illustrate that such a question is profoundly complex and nuanced, precisely because social actors are contradictory, unstable, and emergent in and of themselves. Because individuals can belong to different groups at the same time, significant overlaps of goals, priorities, worldviews, and even lived realities can exist within a given actor.

The concept of 'community,' for instance, which was utilized heavily throughout this study, is exemplar. RNJ buffer zone communities are composed of individuals who can be both a SERNANP resource manager and a livestock owner, both an active member of an anti-mining organization and a former mine employee, both an NGO conservationist and a local business owner. Furthermore, these individuals can live in one buffer zone town yet work in another. The question thus becomes: what constitutes a community? Agrawal and Gibson (1999) explore this question by examining the role of 'community' in natural resource conservation. They argue that traditional definitions of the concept normally conceptualize community as a small socio-spatial scale, a homogenous social structure, and shared norms. This definition, however, is fraught with complications, as it "fails to attend for differences within communities, and ignores how these differences affect resource management outcomes, local politics, strategic interactions within communities, as well as the possibility of layered alliances that can span multiple levels of politics" (Agrawal and Gibson 1999). They instead insist on examining community by focusing on the multitude of actors and interests *within* communities [emphasis added]. The actor-oriented

approach employed in this thesis has served to advance a nuanced understanding of not only 'community,' but has also extended it to other actors embedded in resource governance. This is to say that resource management systems, from protected area conservation to subsoil metal mining, must be theorized as shifting webs of relations, not only between actors but also within actors themselves.

In that sense, although this study has focused specifically on Lake Chinchaycocha and the RNJ (and has indirectly argued that this area is profoundly unique), examining resource governance convergence from an actor-oriented perspective is well-suited to study other topical and geographical areas. As previously noted, convergences of protected areas and mining exist across the world; Durán et al. (2013), for instance, show that approximately 7% of aluminum, copper, zinc, and iron mines directly overlap with protected areas while 27% of these mines lie within 10 kilometers of a protected area. Thus, while the Andean context may be generally oriented toward certain sociopolitical arrangements, cultural understandings, and environmental problems, resource governance convergence clearly occurs in places that have drastically different social, political, and cultural contexts. As such, within these contexts, actors and institutions (state and non-state and at varying scales) leverage power differently and produce different kinds of social-ecological outcomes. It is precisely these differences that make the study of resource governance convergence ripe for expansion and discussion throughout fields such as political ecology, anthropology, and social-ecological systems. A few examples of areas that experience significant occurrences of conservation-mining overlaps are Southeast Asia, Sub-Saharan Africa, and Northern Europe (Durán et al. 2013). Other forms of extraction, furthermore, can converge with conservation, such as hydraulic fracking and oil development conflicting with conservation areas in the United States and Canada (Willow and Wylie 2014).

I also argue that political ecology would greatly benefit from further engaging with production of space perspectives. A core focus of political ecology is a constructivist view on natural resources (Robbins 2011); it would thus be logical to apply this view to the concept of space as well. Production of space perspectives can confer richer, more nuanced, and more sophisticated explanations of social-ecological relations and power differentials because it posits that space is produced through shifting social interactions as well as interactions between social actors and their environments. Furthermore, while such explanations are still grounded in structuralism to a degree, they do not reduce social-ecological change to solely deterministic outcomes of such structures. Put differently, an actor-oriented and production of space-informed political ecology understands that capitalist production is socially, culturally, and geographically differentiated. It critically engages with the ways in which that production both pervades and is pervaded by social relations, cultural life, spatial imaginaries, history and memory, and local politics and governance. As such, political ecologists should pay close attention to social-ecological interfaces: places where and times that social actors not only encounter one another, but also interact with and through their environmental surroundings.

II. Recommendations (and limitations) for resource management

Political ecology has long been criticized for excelling in critiques of the status quo and 'business as usual' while underperforming in the practice of offering meaningful solutions (Walker 2007; Robbins 2011). The goal of this thesis, however, is not specifically address the practical challenges surrounding conservation and mining in highland Junín and Pasco, but rather to offer a more explanatory account of what resource governance convergence does and means for the landscape of the RNJ and the people who depend upon it. It is the author's belief that social-ecological problems cannot be ameliorated without a comprehensive understanding of the

problem itself. Yet a holistic understanding of a given problem can often reveal seemingly unsurmountable challenges. It would be unfounded, unproductive, and inappropriate to suggest that the solution to the RNJ's conservation-mining conflict is simply an alteration of Peru's – and by extension the global system's – political economic configurations.

At the same time, it would also be a disservice and an injustice to residents of highland Junín and Pasco to not offer recommendations or solutions. Change is possible, and there are specific, meaningful interventions that communities, NGOs, and state actors can undertake to improve social and environmental conditions around Lake Junín. Drawing upon issues of climate change, Stuart (2021) argues that while some damages are already unavoidable, the extent of further damages is yet to be determined. I argue this is also the case for the RNJ. In some ways, the damage of mining contamination has already been done; however, the degree of further contamination as well as the severity of other management challenges that face the RNJ are not deterministic. As such, this section puts forth several recommendations for practice and future directions for academic research. Practical recommendations are based in part on my analysis and in part on specific responses to the last question I asked each interview participant: "From your point of view, what would the ideal management of the RNJ and Lake Chinchaycocha look like?" These recommendations, outlined below, are one component of a condensed report based on this thesis' findings that will be provided to resource managers and users on the ground in Junín and Pasco.

The interview process illuminated a broad range of perceptions regarding the efficacy of community-oriented conservation initiatives around the RNJ. The most significant differences were those between resource managers and resource users. For the most part, SERNANP *guardaparques* and specialists perceived co-management and community-based conservation as

successful while community members who partake in such initiatives were more skeptical, with some claiming them to be outright failures. The significant disconnect between resource managers and resource users is a concerning issue that can be better addressed through a widespread and strategic implementation of *talleres* (workshops). These workshops should occur regularly and on a rotating basis in buffer zone communities so as to best connect local stakeholders with SERNANP employees, NGO representatives, and government authorities. Methodologically, they should focus on developing shared approaches to conservation planning based on: *visions* (what should the RNJ look like?), *missions* (key elements for the vision), *goals* (specific, measurable, actionable, reasonable, and time-bound), and *objectives* (specific actions to achieve those goals).

All SERNANP employees interviewed noted that the RNJ is lacks sufficient resources, both in terms of funding and personnel. The RNJ only receives around 300,000 soles in budget allocations (P10); if SERNANP's overall budget of 83 million soles were to be divided by Peru's 75 protected areas, this shows that the RNJ receives significantly less than a would-be average of 1 million soles per protected area. In matters of staffing, there are only four *guardaparques*, one specialist, and one superintendent for a 53,000ha reserve, a 20,000ha buffer zone, and a buffer zone population of 25,000 people. Moreover, the RNJ is not an easy landscape to navigate; due the size and presence of Lake Chinchaycocha, there are certain areas that are only accessed by boat, and to be able to travel from a town on the eastern side of the Reserve to a town on the western side, for example, one must drive north or south of the lake first, significantly increasing travel time. As such, I propose that the RNJ's annual budget be doubled to around 600,000 soles to allow for the acquisition of increased material and human resources. Moreover, a budget increase would allow for another *guardaparque* or specialist to be hired. As a result, better

monitoring and evaluation activities could be realized, as the full extent of ecological challenges facing the Reserve, particularly related to mining and the populations of the *rana gigante* and *zambullidor*, are unknown. These actions, however, would require significant political will on the part of national government institutions.

As this thesis has demonstrated, the issue of mining contamination in and around Lake Chinchaycocha is extremely complex. Equally complex is the issue of how to confront such contamination. As previously noted, this thesis' purpose is not to solve issues of extractivism in central Peru, yet there are some specific actions that can be taken to mitigate continued mining impacts on ecologies and communities. These actions can be divided into two categories: technological and legal. Technologically, one solution is to construct a new dam at the mouth of Lake Junín in order to better block the flow of sediments and mining tailings into the lake. Lake levels would then be regulated by this dam, instead of the Upamayo Dam. Another method discussed by numerous participants is the construction of wastewater treatment plants around Lake Chinchaycocha that can improve the quality of water used during and disposed of after the extractive process. Some interviewees also suggested that wastewater treatment plants be constructed to filter water within the lake itself. It must be noted that these approaches are extremely costly, both financially and in terms of requirements such as time, personnel, and space. They are also significantly limited by existing, pervasive bureaucratic roadblocks (i.e., *papelito manda*).

Other methods of mitigating future pollution of the RNJ are legal in nature. As noted by P12, providing formal legal counsel for buffer zone communities is of utmost importance. Communities should be able to easily and collectively take up claims against contamination and understand their rights under national and international law. Although undoubtedly complicated,

this process should begin with collaboration with the Superior Courts of Junín and Pasco (part of the Peruvian federal judiciary system) as well as the Ministry of Justice and Human Rights (MINJUS). Furthermore, this process should be facilitated in conjunction with a web-based service and local physical infrastructure where residents can file formal complaints against institutions; doing so would alleviate the difficulties of traveling to Huancayo, Cerro de Pasco, or Lima to engage with legal and bureaucratic decision-makers.

Buffer zone activities also constitute an area where positive change is possible. The most ideal scenario is the wholesale elimination of extractive activity within the buffer zone, as this zone is specifically intended to safeguard the RNJ from potentially environmentally degrading actions. However, because eliminating extraction in the buffer zone would first require eliminating vested interests from national and global political actors, this would prove difficult. At the very least, it should be unacceptable that extractive industries can bypass stages of the EIA process within the RNJ's buffer zone. OEFA, with oversight from MINAM and the Superior Courts of Junín and Pasco, should work to ensure that all mining companies seeking to begin exploration in the buffer zone complete all EIA requirements. Along a similar vein, prior consultation should be extended to buffer zone communities, who – while not considered native or indigenous by the state – have profound social, cultural, and historical ties to the landscape of the *puna*.

From an actor-oriented perspective, NGOs could play a significant role in alleviating the threat that mining poses to Lake Chinchaycocha and the RNJ's buffer zone communities going forward. Theoretically, this can be achieved through a process widely known as 'scaling up,' which involves the expansion of NGO impacts by broadening the scope of a given organization's work and mission (Edwards and Hulme 1992; Uvin et al. 2000). Grupo Rana, ECOAN, and the

Denver Zoo Foundation have the potential to scale-up in important ways for a few reasons: (1) they already work at larger geographical scales than only those areas around the RNJ (i.e., ECOAN has projects in the Departments of Cusco, Amazonas, San Martín, and Cajamarca as well); and (2) they maintain institutional partnerships and connections at broader scales (i.e., Denver Zoo's Peru project is one of many around the world and ECOAN is an 'Andean Action Partner' for Global Forest Generation, a large conservation NGO based in the United States). These institutional structures give the NGOs that work in highland Junín and Pasco a wider reach and more political leverage than they would otherwise maintain, potentially allowing them the ability to directly study mining impacts on Andean environments and organize around communities that are already actively contesting extraction. As civil society organizations, these NGOs can play a greater role in activism and organizing, helping to connect more people – both locally, nationally, and internationally – to Lake Junín and bring critical public attention to mining around the RNJ. It should be noted, however, that NGO scaling up is often difficult to achieve in the face of budget constraints, staffing limitations, and larger "systems and structures which determine the distribution of power and resources within and between societies" (Edwards and Hulme 1992).

Lastly, there are numerous actors that are currently not incorporated into resource governance practices in relation to the intersection of conservation and mining around the RNJ. Many interview participants made note of this fact, suggesting that the ideal management of Lake Chinchaycocha would involve bringing new actors to the table in order more precisely address the complexities of the physical and social landscape. New actors mentioned include: the National Forest and Wildlife Service (SERFOR) and the National Agrarian Health Service (SENASA) (both of which are a part of the Ministry of Agriculture), the Ministry of Social

Development and Inclusion (MIDIS), the Ministry of Transport and Communications (MTC). Moreover, participants specifically solicited increased involvement from numerous existing actors, namely ANA, ALA, and OEFA. It should be stated the incorporation of new actors into the RNJ's resource governance system would produce novel and emergent social relations within an already large web of relations, thus leading to the production of novel kinds of space(s).

It is vital to note that, within a political ecological framework, these recommendations are what might be called 'Band-Aid solutions,' as they do not address the root of the problem: the production imperative. Hegemonies of extractivism and resource-dependent economic development are not site-specific issues unique to highland Junín and Pasco, but rather complex global problems grounded in imbalanced state priorities, logics of neoliberal capitalism, and the failings of international trade and finance. Overcoming the production imperative, then, would require a fundamental shift across all sects of society and economy, ideally induced through far-reaching grassroots activism and social organizing. While outside the scope of this thesis, practical and theoretical questions of how to better protect the landscape of highland Junín and Pasco and improve the lives of the people who depend upon it can be answered through further academic research. It is these questions that the next section aims to highlight.

III. Recommendations for future research

This thesis has offered novel understandings of what occurs when differing resource governance strategies touch down in the same area, but this understanding is neither complete nor sufficient. As previously discussed, political ecology has much to learn from production of space perspectives, and insights from a synthesis of these two theoretical angles can be applied across a wide range of resource management issues. Regarding resource governance convergence in particular, there are a few directions that scholars in political ecology, geography,

sociology, anthropology, and political science should consider. First, while there is rich existing literature on anti-mining mobilization, scholars should seek to further explore community responses to resource governance convergence. There is still much to learn about the roles and responsibilities that communities assume in the face of state abandonment and the politics of prioritization, including what specific roles are assumed and how they are formed. To explore what physical and social impacts these processes have, scholars should more explicitly consider how shifting actor responsibilities produce space in new ways. Community as a concept, furthermore, should be viewed as both a site and process of strategic interactions rather than as an ontologically given 'scale'; this will allow scholars to examine what different community groups, organizations, and institutions do to leverage power and influence in the context of resource governance convergence.

A crucial argument pushed throughout this thesis is that the spatialities of resource management require social and geographical differentiation based on the respective positions of different actors, an idea is based upon Massey's (2003) notion of power-geometries. However, there are other social domains through which the production of space and power are differentiated that lie outside the scope of this thesis. One of these domains is gender. While there is a large body of literature on the gendered dimensions of resource conservation and extractivism individually, gender dynamics should be investigated thoroughly in the context of intersections between conservation and mining. Here, scholars should pay special attention to how gender impacts and is impacted by the social production of space. Conceptualizing gender as a 'performance' would be a particularly useful analytical lens, as understanding that gender is "inscribed in daily practices, learned and performed based on cultural norms" (Figueira 2016) would necessitate studying the extent to and ways in which it can shift power relations.

Another direction that future research should take is an investigation of eco-tourism dynamics within the context of resource governance convergence. SERNANP, in conjunction with local partners, is actively promoting eco-tourism and growing tourism infrastructures around the RNJ. Although these infrastructures are nascent and still limited, promoting tourism means that new actors will be brought to the region and incorporated into the interplay between conservation and mining. As such, novel types of social space will emerge as these actors position and reposition themselves within social interfaces and governance structures. Additionally, from a practical standpoint, scholars should ask what might unfold if more people – Peruvian citizens or international visitors alike – were to experience the landscape of the RNJ and become exposed to the threats that face Lake Chinchaycocha.

IV. The Junín National Reserve: a shared space

> *"I believe we are linked to a culture that loves the land, that pays homage to the land, to the Pachamama, to her veins."*
>
> - P19, local educator

The convergence of conservation and mining in highland Junín and Pasco is also a convergence of worlds. In one sense, governing Lake Chinchaycocha and the RNJ is a neoliberalized process, embedded in hegemonies of production and development that paint a picture of Peru at the center of the global economy. Yet in another sense, the beliefs, attitudes, and relationships that inform how this landscape is managed are deeply situated in Andean social life, politics, and culture. As the Peruvian state continues trying to facilitate the disjointed coexistence of conservation and mining (Bury and Norris 2014), the ever-shifting interfaces and relationships that form the RNJ's resource governance convergence serve to continually entangle those worlds. In this sense, one must understand conservation and extractivism as enmeshed

within highland Junín and Pasco itself, touching every facet of the physical and social landscape. As new actors intervene in the region and become stakeholders in resource governance convergence, unique relationships will emerge. Similarly, as existing actors leave, established relationships will collapse and become restructured. Together, these shifts will produce space in novel ways and create distinct social-environmental outcomes. The RNJ, as such, is liminal. In a constant state of transition, it will remain an important site not only to study the implications of conservation and extractivism but also for witnessing the politics of prioritization unfold.

During one interview conversation, an NGO conservationist (P14) stated: "I feel as though it [the RNJ] is a common space that we can all feel. You can take one look at the water and say: that is Lake Chinchaycocha, that is Lake Chinchaycocha." In more ways than one, the landscape of the Reserve is indeed a shared space. At the current moment, it is 'shared' unevenly by competing priorities of protection and extraction. However, as this thesis has shown, protected and extractive spaces do not preclude spaces for less powerful actors to leverage resources and influence. Expanding representation and decision-making power for local communities in conjunction with the conservation sector can start the Reserve and other stakeholder institutions down a path toward new, more inclusive resource governance regimes. Because if Lake Chinchaycocha it is to be shared by anyone, it should foremost be shared by those who love and depend upon it.

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APPENDICES

I. Appendix A: Interview protocols

PARTICIPANTES: MIEMBROS DE LA COMUNIDAD (PROFESIONALES, AGRICULTURALISTAS, Y GANEDEROS)

Información del participante:

1. ¿Cuál es su cargo?
2. Brevemente, ¿cómo es su experiencia con esta zona?

Uso comunitario de recursos y espacio en la Reserva

1. Cuéntame un poco de qué opina usted de la Reserva Nacional de Junín o Lago Chinchaycocha.
    a. ¿Qué sabe de su historia, ambiente, o cómo se maneja?
2. Generalmente, ¿cómo usa la Reserva su comunidad?
    a. ¿Qué tipos de recursos usa la comunidad y para que los usa?
3. ¿Qué lugares usa o visita usted y/o otros miembros de la comunidad?
    a. ¿Dónde se ubican esos lugares?
    b. ¿Qué hacen allí?
4. ¿Usted o alguien en su comunidad depende de los recursos en la Reserva para su sustento o trabajo?
    a. ¿Qué tipos de sustentos son?
    b. ¿Qué tipos de recursos o lugares en la Reserva se requieren estos sustentos?
5. ¿Su comunidad se reúne o interactúa con representantes de SERNANP/Grupo Rana/ECOAN?
    a. ¿Cómo son estas interacciones?
    b. ¿Qué hacen con ustedes? ¿Proyectos formales, talleres?
    c. ¿Dónde ocurren estas actividades/interacciones?
6. Desde su punto de vista, ¿Cuáles son las amenazas que enfrentan la Reserva?
7. Con respeto a estos problemas, ¿cuáles son los retos al manejo de los recursos naturales que enfrentan la Reserva?
8. De todo esto, ¿cuáles son las cuestiones más urgentes? ¿Por qué?

Percepciones comunitarias de minería

1. De su punto de vista, ¿Cómo es el rol de la minería en la región?
2. ¿Usted o alguien que conoce trabaja para una empresa minera en Junín o Pasco? ¿Qué tal en el pasado?
    a. Si es así, ¿cómo es o cómo fue esa experiencia para usted o para ellos?
3. Desde su punto de vista, ¿qué beneficios llevan las minas a la región?
4. Desde su punto de vista, ¿cuáles son los inconvenientes de las minas en la región, si hay uno? ¿Por qué es eso?

5. ¿Los beneficios y los inconvenientes son iguales por todas partes de la región? ¿Dónde son más evidentes?
6. ¿Alguna vez vienen representantes del MINEM o las empresas mineras a su comunidad para reunirse con la municipalidad u otros grupos comunitarios?
    a. Si es así, ¿cómo son esas interacciones?
    b. ¿Qué hacen con la comunidad?
7. Desde su punto de vista, ¿la minería tiene un impacto a la Reserva o al Lago? ¿Como son estos impactos? ¿Dónde ocurren?
8. ¿Cómo describirías la relación entre la Reserva/el Lago y la actividad minera? ¿Por qué o por qué no?
    a. Si piensa que pueden cooperar, ¿cómo será eso?
9. ¿Piensa que, por lo general, su comunidad apoya a la minería? ¿Por qué o por qué no?
    a. ¿Es un tema polémico o divisivo? ¿Por qué o por qué no?

Mapa: No es necesario, pero si deseas me gustaría que dibujes un mapa simple de la relación entre le Reserva y la actividad minera. Se podía incluir el lago, las comunidades, donde se ubican las minas, etc. ¡Como quieras!

Preguntas finales

1. ¿Piensas que hay acuerdo de cómo manejar los recursos de la región y de la Reserva?
2. Por lo general, ¿consideras que hay relaciones positivas y/o activas entre las varias organizaciones que trabajan en la región?
3. Desde tu perspectiva, ¿cómo sería el manejo ideal de la Reserva?
    a. ¿Quién estaría involucrado que no está ahora?
4. ¿Hay algo más de que te gustaría hablar de que no hemos discutido?

PARTICIPANTES: GUARDAPARQUES Y CONSERVACIONISTAS

Información de participante

1. ¿Para qué organización trabaja usted y cuál es su cargo?
2. ¿Por cuánto tiempo ha estado en este cargo?
3. Brevemente, ¿cómo es su experiencia con esta área de Junín y la Reserva?

El rol de SERNANP y conservación en la Reserva y sus alrededores

1. Cuéntame un poco sobre la Reserva. ¿Cómo la ves? ¿Cuál es su rol en la región? ¿Por qué es importante o no?
    a. ¿Como describirías la relación o conexión que tienen las comunidades al paisaje y al Lago?
2. ¿Qué tipos de actividades hacen (SERNANP/Grupo Rana/ECOAN) en la Reserva?

    a. ¿Algunas de estas actividades involucran directamente las comunidades cerca de la Reserva? Si es así, ¿me podría explicar cuáles son y cómo se involucran a los miembros de las comunidades?
3. ¿Dónde pasan estas actividades? O sea, ¿Qué lugares o zonificaciones de la Reserva usan para estas actividades?
4. ¿Qué zonificaciones existen en la Reserva? ¿Qué tipos de actividades pasan en estas áreas?
    a. ¿Dónde se ubican estas áreas?
    b. ¿Existen zonas de uso mixto? Si es así, ¿qué actividades ocurren allí?
5. Desde su punto de vista, ¿Cuáles son las amenazas que enfrentan la Reserva?
6. Con respeto a estos problemas, ¿cuáles son los retos al manejo de los recursos naturales que enfrentan la Reserva?
7. De todo esto, ¿cuáles son las cuestiones más urgentes? ¿Por qué?
8. ¿Han cambiado las estrategias del manejo de los recursos en la Reserva con el tiempo? Si es así, ¿cómo?
9. ¿PIENSAS QUE DESARROLLAR MAS TURISMO Y INFASTRCUTURE PARA EL TURISMO CAMBIARIA LA RESERVA? ¿EL MANJO DE LOS RECURSOS? ¿EL PAISAJE? ¿COMO?

<u>Interacciones entre actores</u>

Estoy interesado en las percepciones sobre e interacciones entre varias formas del manejo de los recursos naturales en la región. Dos formas importantes para Junín y Pasco son (1) la agricultura y la ganadería y (2) la minería. Me gustaría preguntarte un poco de estos, pero hay que decir que no asumo ninguna opinión política sobre estos temas - solo estoy interesado porque esta región tiene diversas formas de recursos y actividades socio-ecológicas.

La agricultura y la ganadería

1. Cuéntame un poco sobre la agricultura y la ganadería alrededor de la Reserva y como tu organización interactúa con ganaderos y el sector agricultura.
2. Como organizaciones, ¿SERNANP, Grupo Rana y/o ECOAN interactúan o se reúnen con los ganaderos?
    a. ¿Qué hacen? ¿Dónde ocurren estas reuniones o interacciones?
    b. ¿Cómo son estas interacciones para ti? *¿Qué tipos de conversaciones tienen?*
3. ¿Piensas que tienen un impacto la agricultura y la ganadería en la Reserva?
    a. ¿Como son estos impactos?
    b. ¿Dónde están estos impactos, o donde son más evidentes?

La minería

4. Estoy más interesado en la idea de la minería y como representa una forma de entender el paisaje; ya menos interesado en los impactos físicos. Entonces, cuéntame un poco sobre

la minería en las regiones de Junín y Pasco. ¿De tu perspectiva, cuál es el rol de la minería?

5. Como instituciones, ¿SERNANP, Grupo Rana y/o ECOAN interactúan o se reúnen con MINEM o las empresas mineras?
    a. Si es así, ¿cómo son estas interacciones típicamente? *¿Qué tipos de conversaciones tienen?*
    b. ¿Dónde ocurren estas interacciones?
6. ¿Alguna vez usted ha interactuado, a través de reuniones o de otra manera, con representantes de MINEM o las empresas mineras?
    a. Si es así, ¿me podría explicar cómo son estas interacciones o cómo han ido para usted?
7. ¿Qué tal de interacciones informales - alguna vez usted se ha reunido o interactuado de manera informal con representantes de MINEM o las empresas mineras?
    a. Si es así, ¿cómo ha sido esa experiencia para usted?
    b. ¿Esas interacciones fueron diferentes de las reuniones formales que usted ha tenido? ¿Cómo?
8. ¿Piensas que tiene un impacto la minería en la Reserva?
    a. ¿Como son estos impactos?
    b. ¿Dónde están estos impactos, o donde son mas evidentes?
9. ¿Usted piensa que la agricultura y/o la ganadería tienen una influencia en *las estrategias del manejo de los recursos naturales y conservación* en la Reserva? ¿Cómo o de qué manera? ¿Dónde?
10. ¿Usted piensa que la minería tiene una influencia en *las estrategias del manejo de los recursos naturales y conservación* en la Reserva? ¿Cómo o de qué manera? ¿Dónde?
11. De otras entrevistas que he hecho, me parece que no hay tanta comunicación entre SERNANP/la Reserva y las empresas mineras como la entre SERNANP y los ganaderos. ¿Piensas que debería haber más cooperación y comunicación con los que hacen conservación y el sector minero?
    a. ¿Sería posible?
    b. ¿Como seria? ¿Quién estaría involucrado?

<u>Mapa:</u> No es necesario, pero si deseas me gustaría que dibujes un mapa simple de las relaciones entre le Reserva y otras formas de la gestión de los recursos naturales. Se podría incluir el lago, las comunidades, dónde ocurren la actividad agricultura y el turismo, dónde se ubican las minas, etc. ¡Como quieras!

<u>Preguntas finales</u>

1. ¿Piensas que los organismos que trabajan acá están de acuerdo sobre cómo se debería manejar los recursos?

2. Por lo general, ¿consideras que hay relaciones positivas y/o activas entre las varias organizaciones que trabajan en la región? (think: Comité de Gestión de la Reserva Nacional de Junín)
3. Desde tu perspectiva, ¿cómo sería el manejo ideal de la Reserva?
    a. ¿Quién estaría involucrado que no está ahora?
4. ¿Hay algo más de que te gustaría decir de que no hemos discutido?
5. ¿Alguien más con quien debería hablar?

PARTICIPANTES: REPRESENTANTES DEL ELECTROPERU

Información del participante:

1. ¿Para qué organizaciones trabaja usted y cuál es su cargo?
2. ¿Por cuánto tiempo usted ha trabajado en este cargo?

<u>Percepciones de la Reserva</u>

1. Cuéntame un poco sobre la Reserva y su paisaje de su perspectiva. ¿Como la ve usted? ¿Cuál es su rol en la región? ¿Por qué es importante o no?
2. ¿Cómo es tu experiencia con esta región de Junín y la Reserva?
    a. ¿Qué trabajos hace ElectroPeru con el Lago?
    b. ¿Con quienes trabaja? ¿Qué organismos o actores?
    c. ¿Interactúa con las comunidades cerca del Lago?
3. ¿Qué porcentaje de electricidad y agua del país proporciona los embalses del Lago Chinchaycocha?
4. ¿Como organismo, ElectroPeru interactúa o se reúne con SERNANP o MINAM en la región? Por ejemplo, el Comité de Gestión de la Reserva.
    a. ¿Como son esas interacciones para usted? ¿Quién está involucrado ¿Qué tipos de conversaciones tienen?
5. Desde su perspectiva, ¿cuáles son las amenazas que enfrentan el Lago y la Reserva?
    a. ¿Cómo ha respondido ElectroPeru a estas amenazas?
6. De estas amenazas, ¿qué piensa son los retos principales para el manejo de los recursos del Lago?
7. ¿Cuáles son los retos principales para ElectroPeru como organismo que trabaja en esta zona?
8. De todo esto, y de su perspectiva, ¿cuáles son las cuestiones más urgentes? ¿Como o por qué?
9. Piensas que la Reserva tiene una influencia en las estrategias del manejo de agua y energía para ElectroPeru?

<u>El rol de la industria minera en los alrededores de la Reserva</u>

1. Cuéntame un poco sobre la minería en las regiones de Junín y Pasco ¿Cuál es el rol de la minería?

2. De su punto de vista, ¿cuáles son y malos de la actividad minera?
    a. ¿Qué beneficios lleva? ¿Cuáles son los inconvenientes?
    b. ¿Estos beneficios e inconvenientes son iguales por todas partes de la región cerca del Lago? ¿Dónde están más evidentes?
3. ¿Como organismo, ElectroPeru interactúa o se reúne con las empresas mineras en la región?
    a. ¿Como son esas interacciones para usted? ¿Quién está involucrado ¿Qué tipos de conversaciones tienen?
4. ¿Qué tal de reuniones con MINEM?
5. ¿Piensa usted que la minería tiene un impacto o influencia a ElectroPeru y su gestión en esta zona? ¿Como o de qué manera?
    a. ¿Estos impactos e influencias ocurren en un lugar sobre otro o están divididos iguales por la zona?

Mapa: No es necesario, pero si deseas me gustaría que dibujes un mapa simple de la relación entre la minería y las otras formas del manejo de los recursos en la región. Se podía incluir el lago, las comunidades, donde se ubican las minas, etc. ¡Como quieras!

Preguntas finales

5. ¿Piensas que hay acuerdo de cómo manejar los recursos de la región?
6. Por lo general, ¿consideras que hay relaciones positivas y/o activas entre las varias organizaciones que trabajan en la región?
7. Desde tu perspectiva, ¿cómo sería el manejo ideal de las minas y/o los recursos aquí?
    a. ¿Quién estaría involucrado que no está ahora?
8. ¿Hay algo más de que te gustaría hablar de que no hemos discutido?

PARTICIPANTES: REPRESENTANTE DE OEFA

Información del participante:

3. ¿Para qué organizaciones trabaja usted y cuál es su cargo?
4. ¿Por cuánto tiempo usted ha trabajado en este cargo?

Percepciones del Lago Chinchaycocha

10. Cuéntame un poco sobre Lago Chincyacocha de su perspectiva. ¿Como la ve usted? ¿Cuál es su rol en la región? ¿Por qué es importante o no?
11. ¿Cómo es su experiencia con esta región de Junín?
12. ¿Cuál es el rol de la ANA con respeto al Lago?
13. ¿Con quién trabaja, que organismos o actores?
    a. ¿Como son esas interacciones para usted? ¿Quién está involucrado ¿Qué tipos de conversaciones tienen?
14. ¿Como es la relación entre la ANA y SERNANP, si hay uno?

15. Desde su perspectiva, ¿cuáles son las amenazas que enfrentan el Lago?
16. De estas amenazas, ¿qué piensa son los retos u obstáculos principales para el manejo de los recursos del Lago?
17. ¿Cuáles son los retos principales para la ANA trabajando allí?
18. De todo esto, y de su perspectiva, ¿cuáles son las cuestiones más urgentes? ¿Como o por qué?
19. ¿Cómo ha respondido la ANA a estas amenazas?

<u>El rol de la industria minera en los alrededores de la Reserva</u>

6. Cuéntame un poco sobre la minería en las regiones de Junín y Pasco ¿Cuál es el rol de la minería?
7. De su punto de vista, ¿cuáles son los buenos y malos de la actividad minera?
    a. ¿Qué beneficios lleva? ¿Cuáles son los inconvenientes?
    b. ¿Estos beneficios e inconvenientes son iguales por todas partes de la región cerca del Lago? ¿Dónde están más evidentes?
8. ¿Cómo es la relación entre la ANA y las empresas mineras?
    a. ¿Quién está involucrado ¿Qué tipos de conversaciones tienen?
9. ¿Cómo es la relación entre la ANA y MINEM?
    a. ¿Quién está involucrado? ¿Qué tipos de conversaciones tienen?
10. ¿Como es el proceso de sancionar o poner una multa a una empresa minera?
    a. ¿Qué pasa después?

<u>Mapa:</u> No es necesario, pero si deseas me gustaría que dibujes un mapa simple de la relación entre la minería y las otras formas del manejo de los recursos en la región. Se podía incluir el lago, las comunidades, donde se ubican las minas, etc. ¡Como quieras!

<u>Preguntas finales</u>

9. ¿Piensas que hay acuerdo de cómo manejar los recursos de la región?
10. Por lo general, ¿consideras que hay relaciones positivas y/o activas entre las varias organizaciones que trabajan en la región?
11. Desde tu perspectiva, ¿cómo sería el manejo ideal de las minas y/o los recursos aquí?
    a. ¿Quién estaría involucrado que no está ahora?
12. ¿Hay algo más de que te gustaría hablar de que no hemos discutido?

PARTICIPANTES: COMITÉ/PLAN CHINCHAYCOCHA

Información del participante:

3. ¿Cuál es su cargo?

<u>Lago Chinchaycocha</u>

9. Cuéntame un poco de qué opina usted del Lago Chincyacocha.

10. ¿Cuál es el Comité de Gestión Chinchaycocha?
    a. ¿Cuál es su rol/que hace?
    b. ¿Dónde ocurren las reuniones?
    c. ¿Quién está involucrado?
    d. ¿Como les van las reuniones?
    e. ¿Como la experiencia ha sido para usted?
11. Desde su punto de vista, ¿Cuáles son las amenazas que enfrentan la Reserva?
12. Con respeto a estos problemas, ¿cuáles son los retos al manejo de los recursos naturales que enfrentan la Reserva?
13. De todo esto, ¿cuáles son las cuestiones más urgentes? ¿Por qué?
14. ¿Como son las interacciones con SERNANP y/o MINAM?
    a. ¿Qué tipos de conversaciones tienen?
15. ¿Como son las interacciones con las empresas hidroeléctricas?
    a. ¿Qué tipos de conversaciones tienen?

<u>Percepciones comunitarias de minería</u>

10. De su punto de vista, ¿Cómo es el rol de la minería en la región?
11. ¿Usted o alguien que conoce trabaja para una empresa minera en Junín o Pasco? ¿Qué tal en el pasado?
    a. Si es así, ¿cómo es o cómo fue esa experiencia para usted o para ellos?
12. Desde su punto de vista, ¿qué beneficios llevan las minas a la región?
13. Desde su punto de vista, ¿cuáles son los inconvenientes de las minas en la región, si hay uno? ¿Por qué es eso?
14. ¿Los beneficios y los inconvenientes son iguales por todas partes de la región? ¿Dónde son más evidentes?
15. ¿Como son las interacciones con las empresas mineras, están involucrados?
    a. ¿Qué tipos de conversaciones tienen?
16. ¿Como son las interacciones con MINEM?
    a. ¿Qué tipos de conversaciones tienen?
17. Desde su punto de vista, ¿la minería tiene un impacto a la Reserva o al Lago? ¿Como son estos impactos? ¿Dónde ocurren?
18. ¿Cómo describirías la relación entre la Reserva/el Lago y la actividad minera? ¿Por qué o por qué no?
    a. Si piensa que pueden cooperar, ¿cómo será eso?
19. ¿Piensa que, por lo general, su comunidad apoya a la minería? ¿Por qué o por qué no?
    a. ¿Es un tema polémico o divisivo? ¿Por qué o por qué no?

<u>Mapa:</u> No es necesario, pero si deseas me gustaría que dibujes un mapa simple de la relación entre le Reserva y la actividad minera. Se podía incluir el lago, las comunidades, donde se ubican las minas, etc. ¡Como quieras!

Preguntas finales

13. ¿Piensas que hay acuerdo de cómo manejar los recursos de la región y de la Reserva?
14. Por lo general, ¿consideras que hay relaciones positivas y/o activas entre las varias organizaciones que trabajan en la región?
15. Desde tu perspectiva, ¿cómo sería el manejo ideal de la Reserva?
    a. ¿Quién estaría involucrado que no está ahora?
16. ¿Hay algo más de que te gustaría hablar de que no hemos discutido?

II. *Appendix B: List of codes used in data analysis*

- MINEHEG: mining is going to continue, it's something one must live with, hard to change (hegemony)
- MINEPWR: mining companies have a lot of power
- BLINDERS: each actor only focuses on what its goal is/what it can do
- CAPBUILD: identified capacity building activities or partnerships
- MINETHREAT: mining is a substantial threat to the RNJ
- CORRUPT: corruption is a major challenge for NRM
- BUREACRACY: bureaucratic processes are a major challenge for NRM
- COMMUNITYENGAGE: communities are important and community engagement is a key NRM strategy
- LACKCOMM(M): lack of communication/interaction with mining companies
- LACKCOMM(S): lack of communication/interaction with SERNANP and conservationists
- LACKCOMM(C): lack of communication/interaction with communities
- BUFFER: buffer zone as a key area for NRM
- COVID: identified the COVID pandemic as a new challenge for NRM
- UNEQUAL: mining impacts are unequally socio-spatially distributed
- LAKEIMPORTANT: Lake Junín is crucial to Peru
- MINEIMPORTANT: mining is crucial to Peru
- DAMDISCHARGE: the damming and discharging of water is a major NRM issue
- ELECMINE: ElectroPeru and hydroelectricity production is connected to the issue of mining
- SUSDEV: conservation and mining are both important and need to/should be reconciled
- CULTURE the RNJ and its surrounding landscape have cultural importance
- UNKNOWN: there is a lack of knowledge about the RNJ
- RANA: identified the *rana gigante* as an iconic and threatened species
- ZAMBULLIDOR: identified the *zambullidor* as an iconic and threatened species
- BOFEDALES: identified the wetlands as a crucial ecological and NRM factor
- COMUSE: communities use and access RNJ space and resources
- AGREE: generally, there is agreement on how to manage the RNJ
- DISAGREE: generally, there is disagreement on how to manage the RNJ
- TOURISM: there is tourism potential for the RNJ/tourism is being or should be promoted
- SANJUAN: the Río San Juan mentioned as the indicative site of mining impacts
- LIMITATIONS: referred to NRM and conservation limitations and challenges
- RAILROAD: discussed the Central Andean Railway in the context of NRM
- SCALES: issues regarding the RNJ and Lake Junín are interscalar
- LACKRESOURCE: indicated that a given institution or group lacks resources in the service of better management
- SHARED: the RNJ and Lake Junín are a shared space