

## COMMENTARY

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## Key Points:

- Mining activity in protected areas threatens conservation strategies
- Private protected areas (PPAs) may add unreliable protection
- Chilean law would poorly balance mining and conservation

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## Conservation easements and mining: The case of Chile

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**Abstract** Private protected areas (PPAs) are important designations with the potential to complement and improve public protected area (PA) networks in many countries. PPAs come in many forms and offer a wide variety of incentives, rights, responsibilities, and protections. One popular model, now being considered for adoption in Chile, is the conservation easement. In this article, we examine how well conservation easements would perform as PPA designations in countries such as Chile that have strong mining industries. Mining, and other concessions, in PAs is emerging as an important point of contention between conservation and development. PPA designations should be carefully designed to offer protections that conform to standards that will complement PA networks, that are perpetual, and that require a publically accountable and transparent process to overturn or modify.

## 1. Introduction

Conflicts between the exploitation of natural resources and reliable conservation of nature are at the heart of the struggle for sustainability in the Anthropocene. Protected areas, whether public or private, are an established approach to resolving this conflict. Private protected areas (PPAs) have a long history; one of their contemporary uses is to help complement efforts by states that lack capacity for systematic protection. As such, PPAs are a growing trend in South American conservation policy [Crouzeilles *et al.*, 2013; Ladle *et al.*, 2013] (J. Cope, The conventional wisdom on conservation easements in Latin America. Phase 1-Improving and expanding use of conservation easements in Latin America: A learning portfolio, 2005. Downloaded from <http://www.ibcperu.org/doc/isis/8380.pdf> on 10 June 2013, hereinafter referred to as Cope, online report, 2005).

Public protected areas (PAs) are state-designated, often state-owned and state-managed sites, which may have a range of management goals and levels of conservation protection, as systematized by the IUCN (International Union for Conservation of Nature and Natural Resources, Morges, Switzerland) Protected Areas Categories System ([www.iucn.org](http://www.iucn.org), accessed July 2013). PPAs are less well-defined. They can take a variety of legal forms, offering different rights, responsibilities, and protections, as well as a range of practical or monetary incentives and benefits [Brockington *et al.*, 2008; Korngold, 2011] (Cope, online report, 2005). In the best case scenario, PPAs would complement or extend coverage by public PAs, while the State facilitates and supports private conservation initiatives. Nevertheless, setting private land aside for ecosystem services, recreation, and research is fraught with ethical, technical, and legal challenges.

Conservation easement is a legal tool for creating PPAs, which has generally been successful in the United States [Brewer, 2011; Korngold, 2011; but see Rissmann *et al.*, 2007] (Cope, online report, 2005). An easement restricts the usage rights of a property, and sets up a legally binding agreement on land uses and management between the owner and a title holder, which in the US context is usually a conservation trust or government organism [Brewer, 2011]. The easement follows the property, rather than its owner, i.e., it can persist after the death of the landowner, although in practice this may be contested (Cope, online report, 2005). In the United States, a conservation easement reduces the value of the land for tax and inheritance purposes, and the price of an easement represents the opportunity cost to the landowner of not developing the land [Korngold, 2011].

Although conservation organizations in several Latin American countries have implemented contracts and other legal instruments modeled on conservation easements since 1992 (Cope, online report, 2005), a contractual obligation (easement) that follows a property is a concept unavailable in South American law

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[Calderón Rojas, 2010]. Chile prides itself as being the first South American country to consider introducing conservation easements into its legal code, a step that it believes other South American countries are watching with interest. To assess the potential benefits or weaknesses of the proposed easement law as a means for developing a legal framework for PPAs, we examine the case of mining activity on a private research station in Chile. This case study draws attention to conflicts between the delivery of conservation policy on PPAs and Chilean mining law. We use this case study to illustrate the challenges of PPA policy development in countries with a strong mining industry. Duran *et al.* [2013] have recently shown that globally 27% of metal-mining activities are within 10 km of a PA; overlap with PPAs is unknown. More broadly, we consider how policy tools can preserve or fail to preserve the balance between conservation and natural resource exploitation when outsourcing these decisions from state actors to private individuals.

## 2. Existing Legal Frameworks for PPAs in Chile

Chile has 36 National Parks (IUCN category II), 49 National Reserves (IUCN category IV), and 15 Natural Monuments (IUCN category III), 9 Biosphere Reserves (effectively IUCN category V), 1 site of cultural patrimony (Easter Island, IUCN category VI), and 9 Ramsar Sites (IUCN category IV), covering 19% of its territory, and mainly concentrated in the scenic south of Chile (CONAF, [www.conaf.cl](http://www.conaf.cl), accessed 2013) [Calderón Rojas, 2010]. Chile is far from reaching the target of 10% of its “ecological regions effectively conserved” and “areas of particular importance to biodiversity protected,” as stated in the 2010 targets adopted at the seventh meeting of the conference of the parties to the Convention on Biological Diversity, to which Chile is signatory (Annex II COP7 Decision VII/30, UNEP/CBD/COP/7/21, Decisions adopted by the conference of the parties to the Convention on Biological Diversity at its seventh meeting, 2004. Downloaded from [www.cbd.int/decisions/cop/](http://www.cbd.int/decisions/cop/), 19 Dec. 2012) [Calderón Rojas, 2010]. Since 1994 the state has recognized the need to “develop and incentivize the creation of protected forest areas on private land” [Law 19300, 1994; Armesto *et al.*, 1998; Pauchard and Villarroel, 2002]. Notably, central Chile, although the only Mediterranean climate region in South America and the area of Chile with highest endemism of flora and richness of fauna, also has the lowest PA coverage [Pauchard and Villarroel, 2002].

The organism currently in charge of the PA network (CONAF), with funding from the Global Environment Facility (GEF), has collaborated with private groups to support the creation of PPAs [Sepúlveda Luque, no date]. There are an estimated 500 PPAs in Chile today [Sepúlveda Luque, no date]. There is no PPA law in Chile. Private owners with an interest in conservation on their lands can choose from a confusing range of policy tools and designations, such as becoming a Nature Sanctuary (Comité Nacional Pro Defensa de la Fauna y Flora (CODEFF), *Las áreas silvestres protegidas privadas en Chile, Una herramienta para la conservación*, 1999. Downloaded from [www.asiseconservachile.org](http://www.asiseconservachile.org), 14 Dec. 2012, hereinafter referred to as CODEFF, online report, 1999). Various private organizations exist to advise and provide support for PPAs, such as Parques Para Chile and Así Conserva Chile. In response to the lack of a legal framework, a new conservation easement law was proposed in 2008 and is being considered by the government. Parques Para Chile, Así Conserva Chile, and The Nature Conservancy, the only international conservation NGO active in central Chile, have expressed support for this legal project ([www.parquesparachile.cl](http://www.parquesparachile.cl), [www.asiconservachile.org](http://www.asiconservachile.org), <http://espanol.tnc.org/dondetrabajamos/chile>, all accessed 2012).

## 3. Chile's Proposed Conservation Easement Law

The conservation easement law under consideration, which passed the Chamber of Deputies (the lower house) in August 2012 and was sent by the Senate for further consideration by various committees (“Proyectos de Ley en tramitación,” [www.camera.cl](http://www.camera.cl), accessed 19 September 2013), would permit the creation of conservation easements (derecho real de conservación) that would allow lands to be set aside as PPAs for conservation for defined periods (15–40 years). The conservation easement concept is considered an innovative legal development within the South American property rights legal tradition [Calderón Rojas, 2010]. As there is no current law governing PPA creation or management in Chile, conservation easements, if passed, would provide a legal tool with which to create PPAs. On the face of it, this is an important and useful development that can address Chile's shortfalls in compliance with the CBD [Calderón Rojas, 2010].

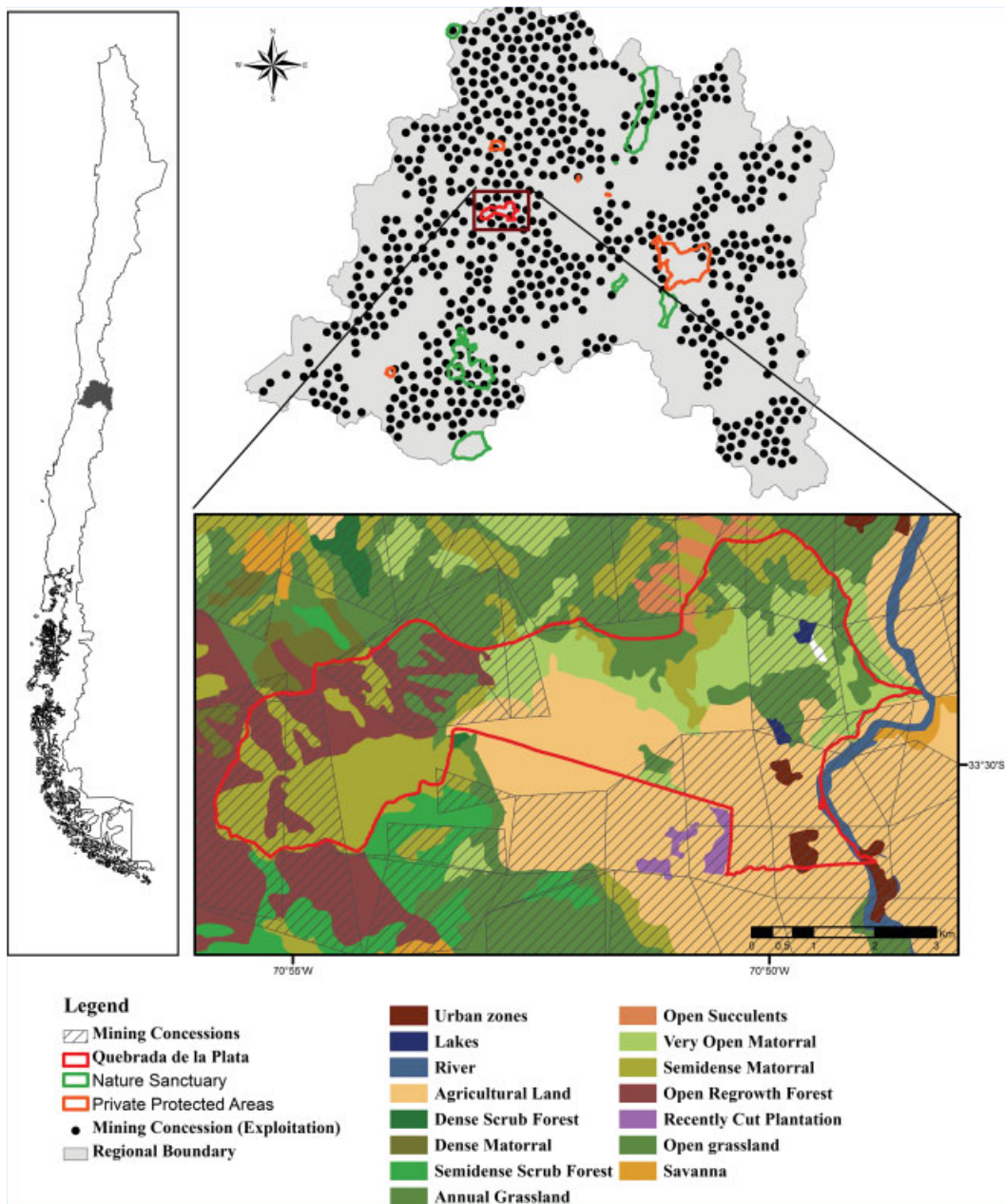
The Chilean conservation easement would differ in some ways from the US model. No tax incentives, compensation for opportunity cost, or monetary support for management are considered in the law. Unlike in the United States, easements cannot be granted in perpetuity. The Commission on Natural Resources, National Properties and the Environment in their report on the law [Calderón Rojas, 2012] are vague about the definition of dedicating a property to conservation, noting that landowners have many different visions, corresponding to many different management goals. The latest available version of the law [Calderón Rojas, 2012] states that the easement contract must include at least one of the following: a restriction on property uses, an obligation to maintain the property, and/or an obligation to execute a sustainable use management plan. A use that cannot be restricted is mining (see below) [Calderón Rojas, 2012]. The law does not restrict other concessionary rights either. It weights the state's need to promote investment in infrastructure over private conservation initiatives, as indicated in the comment by member of the Chamber of Deputies Sr. Vallespín that "a landowner should not be able to attempt to block an electrical project through the constitution of a conservation easement" [Calderón Rojas, 2010]. Unfortunately, this situation is likely to lead to a long-term failure to comply with CBD targets.

#### 4. Case Study: Mining at the Quebrada de la Plata Research Station

Here we examine the case of current mining activity at a research station also used as a community recreation site in central Chile, considering what protections it has under current law and how the proposed conservation easement law would change the situation. The Quebrada de la Plata, a section of the Germán Greve Silva Agronomical Research Station, a ~3000 ha silvopastoral habitat also known as La Rinconada (henceforth: Quebrada de la Plata Research Station), privately owned by the Faculty of Agronomy of the University of Chile since 1933, is being explored by various mining companies without the permission of the Faculty [Fariás, 2012] (C. Araneda and C. Ehijos, personal communication, 2012; Figure 1). There are currently 11 concessions being explored, with 16 more under consideration [Fariás, 2012]. This mining activity is perfectly legal. The right to mine is enshrined in the Chilean constitution. Since the 1983 mining law, mining concessions are defined as property "distinct and independent from the ownership of the superficial property" [Law 18248, 1983, article 2], and thus may be purchased and exploited by owners other than the owners of the topsoil without their permission. The mining law states that "Anyone may explore or excavate, freely, in open or uncultivated terrain, whomsoever the owner may be" [Law 18248, article 15]. The superficial property owner's permission is required only for mining in orchards, vineyards, or in areas with buildings.

Eight million hectares north of Chile are already under mining concessions held by fewer than 20 large companies [Ramos, 2011]. To increase competition and development of the mining sector, CORFO (the governmental agency Corporation for Development and Production) has a program subsidizing small- and medium-sized mining companies wishing to undertake exploration and prospection ("Fondo de Exploración Minera Fénix," [www.corfo.cl](http://www.corfo.cl), accessed 15 January 2013). Owing to the benefits of better infrastructure, easier access to water, and cheaper labor, and the presence of smaller mineral deposits not attractive to large mining companies, it is likely that small- and medium-sized mining companies will increasingly seek concessions in central Chile in the near future. Given the large number of mining concessions already covering the Metropolitan Region alone, this could represent an upcoming threat to conservation (see Figure 1).

The Research Station is classed within a Priority Site under the state's Strategy for the Conservation of Biodiversity in the Metropolitan Region ([www.mma.gob.cl/biodiversidad/1313/w3-article-49498.html](http://www.mma.gob.cl/biodiversidad/1313/w3-article-49498.html), accessed 19 September 2013), and as a Zone of Ecological Preservation and a Zone of Ecological Protection with Controlled Development in the Regulatory Plan for the Santiago Metropolitan Area ([http://www.seremi13minvu.cl/opensite\\_20080710120043.aspx](http://www.seremi13minvu.cl/opensite_20080710120043.aspx), accessed 19 September 2013), but mining is not restricted by zoning laws [Law 18248, 1983]. There appear to be two avenues to end mining activity at the research station (CODEFF, online report, 1999). One is to apply for an exception from the Mining Ministry from mining activity on the basis that the site is of scientific interest. The other is to apply for status as a Nature Sanctuary, which is officially a type of National Monument (IUCN category III), to which large changes (such as mining activity) would have to be approved by a national council. In both cases, the station must prove that it is of special scientific value. In the case of a Nature Sanctuary, the Faculty would take on the cost of management appropriate to this designation. A third option, which



**Figure 1.** Mining concessions, private and public protected areas, and habitat types in the Metropolitan Region administrative district of central Chile. At left, the shaded area shows the Metropolitan Region, in the center of central Chile. Top right, the Metropolitan Region in more detail. We obtained the locations of mining concessions under exploitation from the publically accessible online platform <http://catastro.sernageomin.cl>. We requested a shape file of the concession areas but got no response, so we show only the approximate center of each concession. Inset, details of the Quebrada de la Plata Research Station, showing its extent, habitat types, and the estimated extents of the mining concessions in the area. The area of the research station was derived from an image obtained courtesy of Cristián Araneda.

would protect the remainder of the site, would be for the Faculty of Agronomy to buy the remaining mining concessions, without exploiting them. This is recommended by CODEFF (online report, 1999) and indeed is standard practice for any property developer [Ramos, 2011]. A fee of about \$8 per hectare must be paid every year to maintain the concessions [Law 18248, 1983]. This would imply a yearly and perpetual cost on the order of \$7000. In fact, efforts to protect the Research Station are being led by a local citizens' group, who are using legal challenges to permits and compliance in order to temporarily halt mining activities and increase costs to the company (P. Lazo, personal communication, 2013).

If the Research Station were a conservation easement under Chilean law, would this provide it with improved protection against land conversion? The answer appears to be no. If the easement agreement specifically prohibited cutting down native trees, or building infrastructure, this restriction is on the easement title holder, not on the owner of the mining concession. This is different from a conservation easement in many states in the United States, in which mining and related activities could take place only if the easement owner was a government entity and the terms of the easement were changed or revoked by a legislative body [Brewer, 2011; Korngold, 2011]. Consequently, the proposed law would do nothing new to prevent the continuous conversion of currently existing habitats of ecological value to developed or restored states. However, we see at least one possible benefit to landowners in similar situations. If applying for an exemption as a site of scientific interest from the Mining Ministry, any monitoring or research activities specified in the conservation easement contract might help to substantiate that there is scientific interest in the site.

### 5. Strengths and Weaknesses of the Proposed Conservation Easement Law in the Context of Mining and Other Concessions

The proposed Chilean conservation easement law is widely regarded as a good example of adapting an American legal concept (the conservation easement) to the local legal context [Korngold, 2011], and an advance for PPA recognition in South America. Conservation easements are not the only method for creating PPAs, and other models exist [e.g., Crouzeilles *et al.*, 2013]. We feel that the proposed conservation easement law does not offer a good balance between mining and conservation, and cannot guarantee that PPAs will contribute to Chile's obligations under the CBD to "effectively conserve" 10% of each habitat type and "protect" important biodiversity areas.

The possibility to control land use and management in perpetuity is one of the main attractions of the original US easement concept. The Chilean conservation easement law does not accord this possibility to landowners wishing to create a PPA for conservation. Strong and reliable protections against development of a landholding are still only available through the three currently possible strategies discussed above for the case of the Quebrada de la Plata Research Station. That holders of concessions can develop on conservation easements without a publically accountable and transparent decision-making process represents a failure to fully consider the value of nature preservation to the public.

The proposed conservation easements law is also expected to complement the existing PA network and contribute to conservation in Chile, but here again it falls short. What profile of private owner or private foundation will create easements and where, is not completely clear. The Nature Conservancy reports that private landowners in Chile have many different ideas and motivations for how to accomplish conservation on their properties [Calderón Rojas, 2012]. According to the organization Parques Para Chile, current owners of PPAs are philanthropically motivated; the lack of monetary incentives for PPAs is justified as maintaining the altruistic moral character of Chilean conservation [Sepúlveda Luque, no date]. In general, potential incentives for uptake of PPAs include facilitating ecotourism, a reputational or publicity advantage for companies, or the ability to protect land from control by individuals seen to lack a land ethic, e.g., heirs or buyers [Kabii and Horwitz, 2006; Crouzeilles *et al.*, 2013]. The proposed conservation easement law neither adds new incentives nor significantly strengthens incentives for ecotourism or reputational advantage. Furthermore, the currently proposed 40 year limit on easements is less attractive than existing perpetual designations such as Nature Sanctuaries.

Relative to creating a Nature Sanctuary, setting up a conservation easement may be easier and can be tailored to the interests and means of the landowner. The flip side of this is the lack of real protection and conservation standards: privately affordable conservation management may be inadequate to meet Chile's broader conservation goals. The lack of institutional oversight of mining activity on PPAs means that the real contributions of conservation easements to conservation in the long term will be variable, unpredictable, and unreliable.

### 6. Alternative Approaches to PPAs

An alternative approach to PPAs could work within the existing legislation by providing financial incentives allowing private landowners to fund the management, protection, and possibly scientific research

necessary to convert their lands into Nature Sanctuaries. Another type of improvement would be to put PPAs under the management of the new Service for Biodiversity and Protected Wildlife Areas, in order to guarantee an adequate level of protection and management, and to facilitate the integration of PPAs into the PA network. To appropriately counterbalance the right to mine, the formation of Nature Sanctuaries could be restricted to landholdings of a certain size, or with certain ecological characteristics, or the government could put a cap on the total area that can eventually be converted to PPAs. Existing areas under conservation management, and ecological and silvopastoral research sites, such as the Quebrada de la Plata Research Station, should be given protection priority.

Other countries in South America may be taking a better approach to PPA creation. The Brazilian law creating Private Natural Patrimony Reserves (RPPNs), for example, prohibits activities other than tourism and scientific research on RPPNs, decrees that the RPPNs be managed in perpetuity by the Brazilian Institute of the Environment and Renewable Natural Resources, and provides small monetary incentives for their creation [Crouzeilles *et al.*, 2013; Ladle *et al.*, 2013] (Decreto 5746, [http://www.planalto.gov.br/ccivil\\_03/\\_Ato2004-2006/2006/Decreto/D5746.htm](http://www.planalto.gov.br/ccivil_03/_Ato2004-2006/2006/Decreto/D5746.htm). Downloaded 2013). The law exempts RPPNs from the costs associated with setting up the park under the law, and exempts the land from the rural territory property (ITR) tax. The Brazilian law further prohibits any economic activity that results in the razing of the natural vegetation. By harmonizing RPPNs with existing public PA institutions and laws, the Brazilian version of PPAs may ultimately provide more continuity of protection over time, and reduces the scope for private economic incentives to undermine the value of the PPA to the national conservation strategy.

Mining and other concessions in PAs are likely to be an increasingly common area of contention as countries attempt to meet their obligations under the CBD while also maintaining economic growth. If Chile does not take strong action to facilitate the protection of PPAs from mining exploitation, it will become an international example of poor conservation policy, in which legal innovations provide a smoke screen for an unacceptable conservation status quo. More broadly, this case study raises the question of how legal frameworks should be designed to provide an equitable balance of power between extractive industries with associated infrastructure development, and nature protection. Particularly in the case where states have outsourced to private individuals the fulfillment of some obligations under the CBD, ensuring the ability of private individuals to effectively carry out conservation and nature protection is an important challenge.

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