The debate on whether nature is at the service of man or not has been at the forefront in recent decades. Climate change has revalued the importance of that nature that humankind once sought to tame. Through the case of a hydroelectric power station in southern Chile, this text analyzes the ways in which the vision of nature has changed in our country: as a tourist destination, as a source of energy, as raw material and, recently, as a monument.

Introduction
In recent years, our appreciation of nature has changed, from an object of economic interest only to a subject of rights whose integrity must be protected. The dichotomy of nature’s perception as a commodity is not new, but it has marked the relationships between the human and the natural in modernity. However, the urgency of avoiding an ecological catastrophe – such as the one that anticipates the current climatic emergency – makes the study of history’s environmental dimension imperative. Thus, the understanding of nature as an articulator of aesthetic notions (the beautiful, the sublime, the picturesque, the wonderful, and so on), in counterpoint to its definition as merchandise, becomes of value. This tension is present in the old jumps of the Pilmaiquén river, located in southern Chile, which were transformed.
into the first hydroelectric power plant of the Empresa Nacional de Energía S.A. (Endesa) in the early 40s. The installation of these energy infrastructures dried up the waterfalls and introduced new aesthetic notions referring to the natural and the technological.

In Chile, the legislation on the conservation of nature and forests as natural resources, is approximately 100 years old (Camus, 2006). The creation of the first national parks in Araucanía and the northern part of Patagonia – explored since the mid-19th century –, proposed the preservation of portions of the territory valued by particular scenic qualities, a spiritual hue of the landscape, a *Stimmung*, in Georg Simmel’s words, which motivated a regular observer feeling towards nature’s elements.1 A reform of the national park law in the 1980s, under the Augusto Pinochet civic-military dictatorship, gave certain places the status of ‘natural monument,’ highlighting places that contained an idea of ‘nation’. As with national parks, most of the natural monuments were located in southern Chile.2 Lakes, lagoons, volcanoes, waterfalls, mountains, salt flats, rock formations, caves and forests, in addition to a limited series of endemic plant and animal species, have the legal qualification of a natural monument.

The truth is that opinions about the consideration of nature as a monumental object are divergent. The use of natural force for electricity production is one of the clearest examples of this condition (Nye, 1990). Just as the idea of the natural has been modified, the notion of the sublime has also been transformed into the relationship between the observer and the observed object. Human presence in unexplored nature during the 19th century defined the landscape of Araucanía and the Patagonia through the aesthetic notion of the sublime, that sense of terror and death caused by the observation of a natural object that is threatening and violent in the face of the smallness of human experience, as defined

1 Saltos del río Pilmaiquén, 1927 / Pilmaiquen river falls, 1927. Fuente / Source: Postal / Postcard Ministerio de Fomento, Chile

2 Saltos del río Pilmaiquén, 1940 / Pilmaiquen river falls, 1940. Fuente / Source: Autor desconocido / Unknown author.
by romantic philosophy authors such as Edmund Burke or Immanuel Kant.\textsuperscript{3} The infrastructure installation in these unknown territories modified the sublime perception of nature observation, which was then dominated by the presence of large technologies. These were interpreted by historian David E. Nye as a ‘new technological sublime’ that has been imposed on human experience in relation to landscape (1994), as observed in southern Chile, for example, through the photographic record made by Gustave Verniory of the construction of the Araucanía railway at the end of the 19\textsuperscript{th} century (2012).

A consideration of the aesthetic notions of nature and its transformation into a technological object also requires paying attention to those changing ethical aspects in the relationship between people and natural environments, as observed in recent decades, where nature’s protection has become a significant issue for a contemporary culture that understands the Anthropocene as a geological era and as a sign of the problems of our time. A new environmental ethic arose especially from the ancestral peoples’ link with the land, and the effects of the climate crisis, requiring the contemporary societies to reposition towards nature.\textsuperscript{4}

\textit{Forests, Waters and the Natural Sublime in Pilmaiquén}

Although the category of natural monument was legalized in Chile in the mid-1980s, many tourist attractions that were established in the late 19\textsuperscript{th} and early 20\textsuperscript{th} centuries respond to the generic idea of a natural monument, large
natural elements that impact the viewer because of their size, their sounds or their potential danger. All of them also fit in the category of the natural sublime. Among them, many waterfalls and large rivers stand out. The most important in the 19th century were the Laja river’s falls, located in the province of Biobío, an area that marked the extreme south of the Chilean territory for half a century. This region is currently affected by the overexploitation of water resources caused both by the ultraliberal regulation of water rights that was imposed in Chile in 1981, and by the monoculture of pine forests plantations, which together with the hydric crisis generated by global warming, have contributed to decrease the rivers’ flow and, with it, to reduce the dimensions of the old impressive Laja waterfalls.

Further south, in the Araucanía / Wallmapu and in the Chilean Patagonia, rainfall conditions favor the concentration of a large part of the freshwater reserves outside the polar circles. That is why it is not uncommon to observe large rivers that cross areas of steep slopes allowing the formation of waterfalls of different sizes. These were landscapes where a wild and unknown nature prevailed, until it began to be controlled by the Chilean government in the second half of the 19th century. The exploration of the territory allowed these spaces, once unknown, to become part of a sequence of territory images: volcanoes, rivers, lakes or forests that were later joined by recognizable ideas of the national (Booth and Valdés, 2016).

In this area, a large portion of the Chilean indigenous population is still concentrated. The Mapuche people consider nature as part of their worldview (Foerster, 1993; Villagrán and Videla, 2018). For example, the Villarrica volcano is known by the Mapuche as the Ruka-Pillán, that is, the house of Pillán, the main spirit of the Mapuche pantheon. In this cultural context, rivers are interpreted as a source of life and waterfalls as a connection point between the inhabited world on earth and the spirits that rule in the sky. This interpretation becomes especially relevant when keeping in mind how the torrential rivers have been threatened by the installation of large infrastructures, such as the Ralco and Pargue plants, developed by Endesa on the high Biobío river since the 1990s.
From a Chilean national perspective, the Pilmaiquén river falls, located in the province of Osorno, near Puyehue lake, were highlighted in all Chilean travel guides of the 20s and 30s as a place that should be visited by every tourist interested in knowing the natural wonders of a still-wild Chile (Booth, 2008). The guide entitled *Turismo en las provincias australes de Chile*, published in 1920, describes this place as follows:

It is an indescribable sensation that of the hiker when, after crossing thick forests, is suddenly faced with a panorama that has no parallel in beauty and magnificence in the whole republic: the mighty Pilmaiquén that slips through virgin forests, falls from a thirty-meter height to an abyss whose walls are adorned with the exquisite foliage of innumerable ferns. This imposing waterfall is one of the favorites for summer excursions (Gerike, Manríquez and Thies, 1920: 130).

The Pilmaiquén falls were found in the middle of a private property until the mid-1930s. Since the end of the previous decade, the government had been advocating a tourism promotion policy that focused especially on the southern part of the country, on the former border with the Mapuche people, as part of a process of annexation of this region and of nationalism that valued the southern landscape conditions. In 1930, the publication of the Law 4,868 authorized the Chilean government to expropriate land to promote tourism and build hotels in Todos los Santos, Llanquihue and Villarrica lakes, and in the Pilmaiquén falls. Five years later, president Arturo Alessandri proposed to the National Congress a bill aimed at expropriating the site where the Pilmaiquén river falls were located in favor of tourism. In his message to the congress, the president of the republic pointed out that among the attributions of the National Tourism Service was “to ensure the conservation of the country’s natural beauties [and] among these, unquestionably, one of the most worthy of that care and protection are the falls of Pilmaiquén” (National Congress, 1935: 725).

The law to expropriate the falls was passed quickly, becoming a public interest area administered by the government. This action was in sync with a national policy that favored hotel construction and tourism promotion in the southern regions of Chile, in the area known today as the Araucanía/Wallmapu and the Los Lagos Region, which, after being known as “La Frontera,” was informally called the “Chilean Switzerland,” given its scenic qualities. Tourism promotion was organized by the State Railways Company as a way of reorienting the freight transport business, severely weakened due to the decline in trade that followed the 1929 crisis. In that sense, tourism promotion in Chile is an indirect consequence of the Great Depression. In the “Chilean Switzerland,” there were a lot of lakes of glacial origin, humid forests, numerous volcanoes and the snowy profile of the Andes mountain range, visible in numerous images of the tourist publicity of the Pilmaiquén falls. Some circulated as postcards edited by the Tourism Section of the Ministry of Development or edited by private companies, such as Foto Mora.
The Technological Sublime at the Pilmaiquén Hydroelectric Plant

It is paradoxical that the economic transformation that the 1929 international crisis meant for Chile, promoted the conservation of some natural scenarios to develop tourism – and thus maintain the rail business and, at the same time, implied a profound transformation of nature to allow the generation of electric power. Indeed, the dramatic reduction of the Producto Interno Bruto (PIB) after the fall of the New York Stock Exchange generated the worst economic crisis that Chile remembers. When the country’s economy returned to the pre-crisis indicators, in January 1939, a major earthquake affected the most productive region of Chile: the Chillán earthquake killed about 30,000 people and destroyed much of the economic capacity of the center of the country. In response to this socionatural catastrophe, the government created the Corporación de Fomento a la Producción (Corfo) and the Corporación de Reconstrucción y Auxilio, organizations that had the purpose of organizing productive development and rebuilding areas damaged by the earthquake. Industrial production required the provision of electrical power that until then the Chilean government was not able to produce. Therefore, the first “Plan for the Promotion of Electricity Production”, published in 1939 by the engineer Raúl Simón and endorsed by the national authorities, considered the strength of the river currents of the Chilean south to supply energy for the new industries (Simón, 1939). Industrial modernization
modified the view of the rivers and waterfalls: soon after being considered wonderful objects to be preserved, the Pilmaiquén falls became a source of new energy that had to be exploited. This situation led to an ethical transformation in just five years that supported the destruction of a natural monument to make way for a hydroelectric power station.

The Pilmaiquén falls were the first waterfalls in southern Chile that were considered in that plan. The state property of the falls – established only four years before to "ensure the conservation of natural beauties," – was used to start an electrification plan that would benefit the local industry. Chile lacked carbon resources and practically all the oil used in the country was imported, so water resources were considered appropriate for energy production. In 1940, Endesa was created, as a Corfo subsidiary, implementing the plan for the construction of hydroelectric plants in the Araucanía/Wallmapu and in the northern part of the Chilean Patagonia. That same year began the construction of a central passage in the falls of the Pilmaiquén River, which implied building a small dam and an artificial reservoir, diverting the water and directing it to the turbines that would be fed with the hydraulic force of the slope. This meant the desiccation of waterfalls, eliminating one of the main tourist attractions in the Chilean south. The Pilmaiquén Hydroelectric Power Plant began operations in 1944.

It is interesting to note that much of the information produced around the construction of this hydroelectric plant highlighted its installation as a manifestation of national progress. Zig-Zag magazine, for example, continuously expressed its enthusiasm for the works carried out in the middle of the forest, which marked the electrification as a sign of the nation's development (Zig-Zag, July 1941). Such was the importance attached to the construction of this public work that this magazine spared no effort to frame the operations to transform the territory like a true modern propaganda, establishing, for example, that the construction of the hydroelectric plant would imply only a brief interruption in the water flow of the Pilmaiquén river while the construction of the work lasted (Zig-Zag, August 1941). Although the continuity of the river and, therefore, the survival of the falls was only a circumstantial situation that was reduced to ephemeral episodes, allowed by the flooding of the Puyehue lake,
the publications of the period on the construction of the power station do not hide that the transformation of the landscape was the cost that had to be paid to bring Chile closer to the modern world (Zig-Zag, July 1943).

In a promotional brochure published in 1944 as part of the inaugural activities of the Pilmaiquén Hydroelectric Power Plant, it is clearly stated how human action transformed nature into a new technological monument. Together with engineering drawings, the infographics on the circulation of electricity in the south and photographs of the progress of construction, the electricity company highlighted that

[...] in the middle of a forest the machine house was raised. It has been a true symbol. The vegetation supports the work of man. This is what electricity is for Chile: a virgin wealth that is beginning to be discovered. The trees disappear and you are in the machine house. That steel and those men will deliver the electricity (Endesa, 1944).

Since the 30s – when the national electricity policy was implemented –, and for approximately 50 years, productivity and industrial development were put before any argument that sought to preserve natural monuments – such as rivers and waterfalls – that could be used for electricity production. The celebratory record of the Chilean government’s ability to produce electricity using the wonders of nature, was a transversal consensus throughout the second half of the 20th century. For all those governments, the country’s productivity required the hydraulic power of the rivers and they did not question the transformation of the natural sublime into a technological sublime, promoted by images developed by both Endesa...
and by parliamentarians from all the political spectrum, written press and visual records associated with the construction of these infrastructures. The Pilmaiquén case is paradigmatic because it is the first of its kind, but the truth is that several hydroelectric plants built in the Araucanía/Wallmapu and Patagonia followed a similar path: the paradox of considering natural beauties as tourist heritage and the value given to the natural sublime linked to the wild character of this region, failed to contain the impetus of industrialization and the objective of technological development as the only way to achieve a modernity intended in an always precarious material environment like Chile. In this context, hydroelectric power plants built in the south were considered a national pride, although this implied devastating the pre-existing nature.

This continued in the same manner until the early 90s, when two elements came together to re-articulate a new program to defend nature and ancestral spaces occupied by the Mapuche natives. On the one hand, the end of the dictatorship of Augusto Pinochet allowed a new process of civil society organization that disputed the authoritarian decisions taken by various governments, critically considering the damage inflicted on the nature of southern Chile; on the other hand, the organization of the indigenous movements, and particularly of the Mapuche movement,
demanded that, in the case of the installation of large infrastructures that affected ancestral territories, the Chilean government comply with the international commitments that forced to consult the communities. This was first seen in the proposals for the construction of two mega hydroelectric power plants in the upper Biobío river, the Pangue and Ralco plants (put into service between 1996 and 2004), monumental infrastructures that would flood a Pehuenche cemetery and territories inhabited by indigenous people. The debates about the productive or symbolic uses of nature also inaugurated a new conflictive relationship between the Chilean government and the Mapuche social movements.

Conclusions: Nature as a Monument?
The construction of the Pilmaiquén Hydroelectric Power Plant in the mid-20th century is a good example of how the perspective towards the pristine nature of southern Chile changed, which, since the late 19th century was treated not only as a receptacle of natural beauties or aesthetic notions as the sublime, but also as a source of resources for industrialization. This ambivalent condition continues until today, when the human transformations of the landscape have caused an environmental crisis with frightening effects. The concern of environmentalism and the current indigenous movements has led to questioning the installation of new hydropower plants in the Pilmaiquén river, where the first Endesa infrastructure was installed.

This type of conflict exceeds the specific scope of the transformations of old waterfalls in engineering works for the production of electricity and we can see it in a large number of examples in which the relations between the human and the natural have been strained, modifying perceptions sensitive to landscape. Another of these cases could correspond to the destruction of one of the western monuments: the fire of the Notre Dame Cathedral in Paris, which not only shook international public opinion, bought the precariousness of conservation at the center of global attention, and generated a huge tide of millionaire donations, but also established an intense debate about the use of wood in the construction of historic buildings, something that was offered almost immediately in Chile, where former chancellor and ex-senator Ignacio Walker was one of the first to react, wondering on Twitter why this country did not offer wood for the reconstruction of the cathedral of Paris. On the same day of that comment, the president of the republic Sebastián Piñera offered his French counterpart Emmanuel Macron all the copper and wood that was necessary for the reconstruction of Notre Dame. This offer, without any practical effect, can be considered a strategy to position Chile, a mining-based country, as a collaborator in the face of the emergency suffered by French architectural heritage.

The debate generated over the Chilean offer of timber to reconstruct Notre Dame is interesting, since it revealed tensions in the meaning of historical monuments, as well as the monumental condition that natural objects may acquire in certain circumstances. In fact, the felling of trees to be donated to France provoked rejection in Chilean public opinion, which considered that the donation
was a mistake. In the architectural field, a series of misunderstandings of public knowledge allow us to explain that there is still no consensus about the value of nature. In a letter published by the newspaper *El Mercurio* on April 18, the architect and professor of the School of Architecture of Universidad de Chile, Juan Lund, proposed that the donation of wood offered by the Chilean government could be obtained from native trees, perhaps the same that were going to be cut down to give way to the Pilmaiquén hydroelectric plant. Lund’s statement indicated, according to the opinion of a French expert circulating in the Chilean press, that France no longer had forests with appropriate timber to elaborate the pieces required for the reconstruction of Notre Dame’s roof. Lund then proposed the donation of *coigu**es* that have “a straight trunk that reaches up to four meters in diameter, which can perfectly replace the original holm oak of the cathedral” (Lund, 2019).

This comment, presented in a mass media such as *El Mercurio*, generated a wide rejection on Facebook and Twitter, especially among those who considered that cutting down endemic trees, protected by Chilean legislation, was a crime against local nature. A few days later, the professor of the Faculty of Agronomic Sciences of the University of Chile, Álvaro Gutiérrez, published a reply to the previous letter entitled “Cut Monuments?” In which he critically referred to Lund’s proposal, explaining that after measuring more than 650,000 native trees in Chile, only about 50 specimens exceeded 2.5 meters in diameter and that only one known live specimen was close to 4 meters. From agronomic science, Gutiérrez said, these species are called “monumental trees” and constitute “a living natural heritage, of global relevance” (Gutiérrez, 2019). The scientist’s letter closed the debate stating that “in Chile we don’t have architectural monuments like Notre Dame, but we have natural monuments that we should be taking care of (Gutiérrez: 2019).” With this, he pointed out the importance that endemic nature conservation has in a context where accelerated social and technological changes have put the planet in a situation of fragile ecological sustainability. In the present times, we could infer, it is no longer possible to ignore the importance that nature has, and we cannot subject it to the advances of technology or the conservation of material heritage. The same nature has acquired a new patrimonial status that is worth protecting. ARQ

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Notas / Notes

1. On the Stimmung idea, see Simmel (2013: 185).
2. As for the concentration of scenic places of interest in southern Chile see Booth (2010).
3. On the romantic ideas of the sublime developed during the 18th century, see Burke (2005) and Kant (1990), among others.
6. See “Law No. 4,868 of July 30, 1930. Authorizes the president of the republic to build hotels and similar establishments in the regions close to the Todos los Santos, Llanquihue, Villarrica lakes and the Pilmaiquén river falls.”


7. “Law No. 1754 of December 7, 1935. Allocates funds to expropriate the tourism site called ‘The falls of the Pilmaiquén,’ and the surrounding land.”

April 18, 2019 <https://twitter.com/ignaciowalker/status/118870332626598759>.


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