

NAMING AND REGULATING: TENSIONS BETWEEN URBAN PLANNING AND PRODUCTION OF NATURE¹

NOMBRAR Y NORMAT: TENSIONES ENTRE LA PLANIFICACIÓN URBANA Y LA PRODUCCIÓN DE NATURALEZA

CLAUDIA CERDA-INOSTROZA ²
FRANCISCO DE-LA-BARRERA-MELGAREJO ³
MAURO FONTANA-FLORES ⁴

¹ Agencia Nacional de Investigación y Desarrollo (ANID) a través de la Beca Doctorado Nacional 2024, N° 21241110, Fondo Nacional de Desarrollo Científico y Tecnológico FONDECYT N°1231859, N°11260874 y Centro de Interés Nacional CEDEUS CIN250009

² Magíster en Procesos Urbanos Sostenibles
Estudiante de Doctorado en Estudios Territoriales del Sur global.
Jefa de carrera de la Facultad de Arquitectura, Urbanismo y Geografía
investigadora del Grupo de estudios Interculturales Urbanos y Territoriales (GRIUT)
Universidad de Concepción, Concepción, Chile
<https://orcid.org/0000-0002-8864-7516>
clcerda@udec.cl

³ Doctor en Geografía, Planificación Territorial y Gestión Ambiental
Docente e Investigador de la Facultad de Ciencias Ambientales.
Centro de Ciencias Ambientales (EULA-Chile) y Centro de Desarrollo Urbano Sustentable (CEDEUS)
Universidad de Concepción, Concepción, Chile
<https://orcid.org/0000-0002-6854-3197>
fdelabarrera@udec.cl

⁴ Doctor en Arquitectura y Estudios Urbanos
Director del Departamento de Urbanismo de la Facultad de Arquitectura, Urbanismo y Geografía.
Grupo de estudios Interculturales Urbanos y Territoriales (GRIUT)
Universidad de Concepción, Concepción, Chile
<https://orcid.org/0000-0002-2818-4863>
maurofontana@udec.cl

Los instrumentos de planificación urbana producen naturaleza a través de procesos de zonificación, que generan tensiones en la forma en que estos espacios son nombrados y normados. Este trabajo busca identificar y comparar los modos de producción de la naturaleza en el Área Metropolitana de Concepción, a partir del análisis de instrumentos de planificación territorial en distintos períodos sociohistóricos. Para ello, se utilizó un enfoque metodológico mixto que combinó el análisis de discurso, la revisión documental y las entrevistas semiestructuradas. Los resultados demuestran la subordinación de la naturaleza a funciones socioeconómicas, pese al incremento de la semántica ambiental en los instrumentos de planeación; ello indica la necesidad de transparentar el lenguaje técnico y reconocer múltiples significados de la naturaleza para su integración efectiva en la planificación de la ciudad.

Palabras clave: planificación urbana, naturaleza urbana, instrumentos de planificación, discursos urbanos

Urban planning instruments produce nature through zoning, creating tensions in how these spaces are named and regulated. This study aims to identify and compare the modes of production of nature in Concepción's Metropolitan Area by analyzing the planning instruments in different socio-historical periods. For this analysis, a mixed-methods approach that combined critical discourse analysis, document review, and semi-structured interviews was used. The results show that nature is subordinated to socio-economic functions, despite the increased emphasis on environmental semantics in planning instruments. This demonstrates the need to make technical language more transparent and to recognize nature's multiple meanings for its effective integration into city planning.

Keywords: urban planning, urban nature, planning instruments, urban discourses

I. INTRODUCTION

From semantic to normative discourse: How planning reconfigures nature with words

In urban planning instruments, the language used to designate areas recognized as nature serves not only as a descriptive technical tool but also as a means of reconfiguring the territory's meaning. The terms used in the definition of natural areas, far from being neutral, play a central role in constructing different visions that guide their relationship with urban processes, which operate as discursive practices that directly affect the production of natural space (Fairclough, 1992; Foucault, 1977).

The nomenclature used to define these zones often does not align with standardized frameworks or formally consolidated categories; rather, it emerges from discretionary decisions by officials or technical entities, programmatic orientations, and/or institutional guidelines. Language guides how the territory is intervened in, simplifying the ecological complexity of the space (Scott, 1998; De la Barrera et al., 2023). This process helps to define which forms of nature are recognized within the planning and which are subordinated or excluded (Van Speybroeck & Targa, 2026).

In critical theory, nature is not conceived as an external entity of society, but as a socially produced category. The notion of "production of nature" helps us understand that natural spaces in the city are not simply preserves of what already existed, but active configurations mediated by economic, technical, and ideological interests, inserted within the circuit of capital (Smith, 2007; Swyngedouw, 2011).

The spaces that contain nature and are the object of urban planning are reconfigured according to various rationalities. Some of these are structured from mercantile logics, linked to real estate valuation processes (Harvey, 1982; Smith, 2007); others are oriented to recreational functions and social cohesion (Gehl, 2011); while others respond to ecological approaches, focused on conservation and restoration (Beatley, 2011). These different logics coexist within urban planning processes, under hierarchies that are not explicit in the instruments (Valencia-Sandoval et al., 2010). Thus, urban planning can be understood as a territorial governance device that not only organizes space but also prioritizes certain modes of production of nature over others (Smith, 2007).

To show how the modes of production of urban nature are configured over time, this article analyzes the relationship between the semantic and regulatory discourses found in the urban planning instruments of

the Metropolitan Area of Concepción (AMC). This territory constitutes a relevant case study for analyzing these tensions, given the convergence of high natural-system diversity and the implementation of intensive urban planning over time.

The study proposes a mixed methodological approach that uses discourse analysis techniques to provide new insights into the structural basis of contemporary socio-environmental conflicts constituted on the territory.

II. THEORETICAL FRAMEWORK

Human-nature power relations

Historically, the concept of nature has been the subject of epistemological disputes, which not only reflect conceptual differences but also tensions over which forms of life and relationships are recognized or excluded within urban systems (Van Speybroeck & Targa, 2026). Nature cannot be understood from a static perspective but as an epistemological horizon in which multiple cultural, geographical, political, and temporal conceptions converge (Swyngedouw, 2011).

From this perspective, the human being occupies a dual position: on the one hand, they are part of the ecosystem; on the other, they act as a transformative agent of history, culture, and territory (Von Mentz, 2012; Santos, 1978). Under this logic, Reclus (1875) uses "second nature" to refer to this permanent intervention, through which human beings modify the environment to survive and expand.

The contemporary environmental crisis shows an intensification of this relationship, which evidences a significant ecological imbalance (Merchant, 2023). In Latin America, colonization established a territorial ordering based on a functional and limited relationship with nature (Walsh, 2007), which consolidates a dualistic vision that separates and subordinates the natural to the human domain (Merchant, 2023). This problem has been exacerbated by a capitalist model that has prioritized urban expansion at the expense of natural systems (Mignolo, 2012).

In Chile, this process has intensified since the 1980s, with the consolidation of the neoliberal model. This has significantly transformed natural landscapes and, together with weak urban planning, has contributed to territorial conflicts and environmental degradation (Hidalgo et al., 2022; Villagra Islas, 2011; Nicolás-Artero et al., 2021).

In this scenario, urban planning is understood as a field in which these tensions manifest, particularly through regulatory instruments that classify and govern the presence and fate of nature in the city from different positions of power.

Nature production and urban planning

From the critical theory, Henri Lefebvre (2014) suggests that the “conceived space”, represented through maps or plans, is not neutral but socially produced. Nowadays, this process is shaped by a capitalist logic in which economic and technical interests predominate, justifying certain forms of spatial organization that shape everyday life.

In this line, the production of nature allows us to understand how the natural is organized and re-signified according to social rationalities (Smith, 2020); in the urban context, this production is mainly expressed in three interrelated modes.

- Economic, where nature is fragmented and re-signified according to land valorization and the accumulation of capital (Harvey, 1982; Smith, 2020).
- Social, focused on the creation of public spaces that favor well-being, interaction, and social cohesion (Gehl, 2011; Jacobs, 2014).
- Environmental, addressing ecological protection and the integration of natural processes in territorial planning (McHarg, 1969; Waldheim, 2016).

These do not operate in isolation but coexist, stressing how urban nature is conceived and regulated. Urban planning instruments not only organize the space but also define the values and functions assigned to each territory. This coexistence has been widely documented in planning processes that seek to balance development, conservation, and social demands, although not always in a symmetrical way (Valencia-Sandoval et al., 2010).

Discourses and regulation in urban planning

Naming and regulating the territory constitute an exercise of power, since they not only define possible uses but also which forms of nature are legitimized or rendered invisible within urban space (Van Speybroeck & Targa, 2026), thereby validating or imposing certain modes of nature production (Smith, 2020).

Discourse analysis has become a key tool in urban studies, as it enables the analysis of how institutional language, regulations, diagnostics, or cartographic representations shape space, guide forms of intervention, and ultimately define what is valid and what is possible (González Redondo, 2024; Shirazi, 2023). Language not only describes space but also classifies and organizes

it by producing different realities, becoming a tool of domination when it is in the hands of those who possess symbolic authority (Bourdieu, 1991; Foucault, 1977).

States simplify territory through legible categories that facilitate its management, but reduce its ecological and social complexity (Scott, 1998). This simplification is not neutral, as it can conceal processes of exclusion in which certain forms of nature are marginalized for not belonging to dominant categories (Harvey, 1996; Van Speybroeck & Targa, 2026). An example of this is urban agriculture, which has yet to secure regulatory status despite its social and environmental potential (Zazo-Moratalla et al., 2023). These discursive practices are usually presented as technical and objective truths, when in fact they respond to specific ideological interests and visions (Fairclough, 1992).

On the other hand, the regulatory dimension translates these representations into concrete regulations, in which nature is frequently instrumentalized for urban development (Lefebvre, 2014). This tends to reinforce reductionist visions that commodify nature under the logic of capital, by making its cultural and ecological dimensions invisible (Leff, 2004; Escobar, 2010). Consequently, urban planning instruments simplify nature through generic categories such as “green areas” instead of recognizing it by its characteristics, such as wetlands or hills (De la Barrera et al., 2023).

Thus, semantics and regulations operate together as instruments of power that determine the fate of urban nature (Harvey, 1982; Lefebvre, 2014). This research examines how the two dimensions are related and together generate modes of production, contrasting with studies of discourse analysis in planning that have focused on language or regulations in isolation.

III. CASE STUDY

The Metropolitan Area of Concepción (AMC), comprising eleven communes, is located in the Biobío region, in the south-central area of Chile (Figure 1). It has a population of 1,012,490 inhabitants in an area characterized by high natural diversity, marked by the Biobío River basin, which encompasses valleys, lagoons, and wetlands, as well as the low-altitude ridges of the Cordillera de la Costa.

Since 1948, the AMC has been the subject of urban planning processes. With 35 regulatory plans passed, the AMC has an extensive track record when compared to Latin American standards, which have marked the reconfiguration of its natural spaces. In the 1960s, industrial growth was accompanied by planning

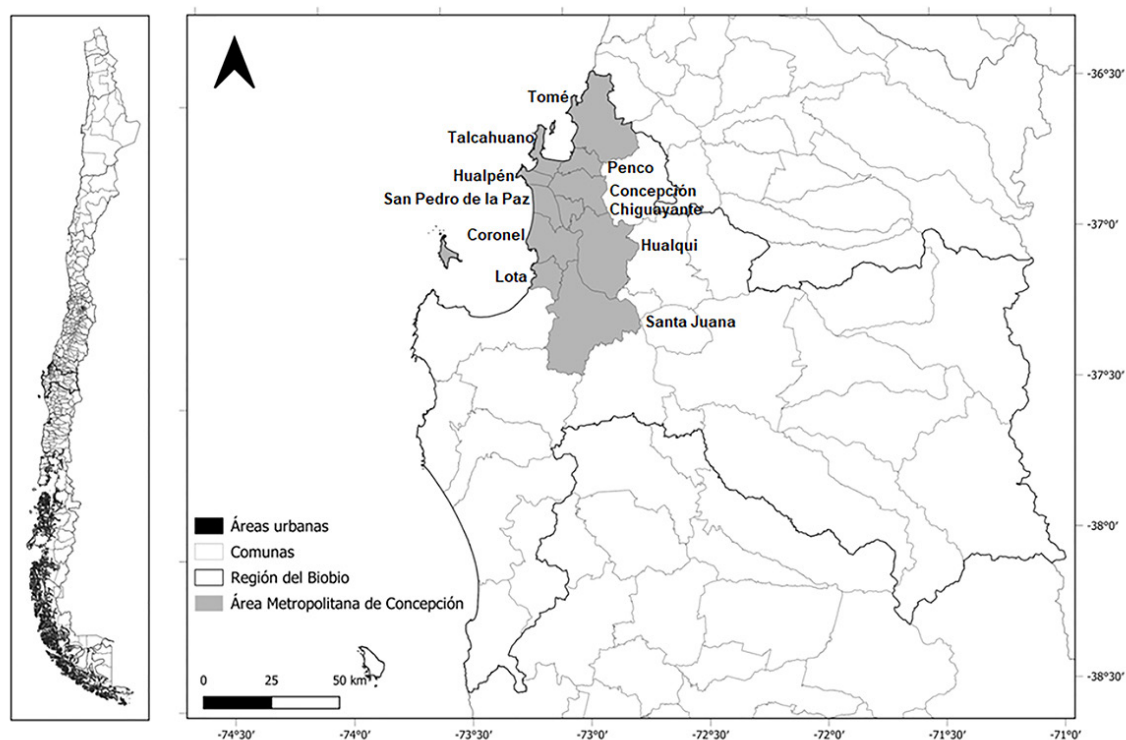


Figure 1. Location of the Metropolitan Area of Concepción. Source: Prepared by the authors.

Years community regulatory plans were passed					
Concepción	1948 [n/a]	1962-64	1982	2004	
Coronel		1963	1983		2013
Talcahuano		n1964 [n/a]	1982	2006	
Hualpén		n1964 [n/a]	1982		2023
San Pedro de la Paz		1966	1982		2011
Penco		1968 [n/a]	1982	2007	
Lota		1969	1983		
Chiguayante			1982	2003	
Santa Juana				2006	
Tomé		1968 [n/a]	1982	2008	
Hualqui		1964	1982		2017
Years metropolitan regulatory plans were passed					
Intercommunal	1949 [n/a]	1963			
Metropolitan			1980	2003	
Note: [n/a]: No background information available in the regulatory plans file.					

Table 1. Passing of the AMC's communal, intercommunal, and metropolitan regulatory plans. Source: Prepared by the authors.



Figure 2. Methodological outline. Source: Prepared by the Authors.

that unified a group of communes through large infrastructure. This led to the Zoning of the Greater Concepción area and, later, to the Intercommunal Plan of Concepción of 1963. In parallel, the different communes consolidated their own planning processes (Table 1).

IV. METHODOLOGY

In keeping with the adopted theoretical approach, which understands nature as a socio-spatial production, a mixed-methods approach is proposed. This combines qualitative techniques for discourse analysis, mainly used to address the symbolic dimension of urban space and to identify how linguistic categories and institutional representations configure meanings that affect the territory's material production (González Redondo, 2024), with quantitative techniques for systematization through a comparative analysis matrix (Figure 2). This methodological approach has been used in territorial planning studies that combine qualitative analysis, local data collection, and spatial evaluation to address complex development problems (Valencia-Sandoval et al., 2010). The study analyzed how urban nature has been produced in the AMC, based on the zoning proposed by the communal and metropolitan regulatory plans for natural spaces.

Firstly, a documentary review of the regulatory plans passed by the AMC from 1960 onwards was conducted, and their explanatory reports and the context of their preparation were analyzed. In addition, semi-structured interviews were conducted with key urban planning actors, including consultants and public officials. All this is to identify the distinct socio-historical periods that planning has undergone regarding urban nature.

Secondly, the 24 communal and metropolitan regulatory plans that include natural areas within the urban territory were listed. Thirdly, an analysis matrix was built using this to address the semantic and normative dimensions of natural areas, with the semantic dimension understood as the language used to designate the polygons, and the regulatory dimension as the permitted land uses in each area.

For the comparative evaluation, both dimensions were addressed using an approved set of analytical categories that contrast discursive patterns and recurrent categories to analyze the degree of coherence between what is named and what is regulated in the polygons. For this purpose, both the semantic and regulatory discourses were examined using the value (environmental, social, economic, and generic) and function (conservation, recreation, restriction, functional, productive, equipped, and urbanized) categories (Table 2). This methodological decision makes it possible to operationalize the notion of production of nature by making discursive representations and their regulatory materialization comparable.

ANALYTICAL CATEGORIES TO MEASURE THE SEMANTIC AND REGULATORY DIMENSIONS			
VALUE		FUNCTION	
ANALYTICAL CATEGORIES	DESCRIPTION	ANALYTICAL CATEGORIES	DESCRIPTION
Environmental	To maintain the ecological qualities and biodiversity of the spaces, promoting their conservation and ecosystem regulation through land uses compatible with environmental protection.	Conservation	Areas intended to conserve natural spaces and maintain ecological balance, allowing limited human use (E.g., Ecological conservation areas, natural parks).
		Recreation	Areas intended for rest, recreation, and well-being in natural environments (urban green areas, recreational parks, seaside resorts).
Social	To promote recreational spaces that balance natural conservation with accessibility and collective well-being, through uses oriented to leisure and recreation.	Restriction	Areas intended to limit the use of land to protect security, the area, or critical infrastructure (Restriction, natural or anthropogenic hazards).
		Functional	Areas intended to separate incompatible urban uses and mitigate the impacts of high-impact infrastructures (Natural areas or parks).
Economic	To promote productive uses of land reserves for future developments, subordinating ecological and social values to the logic of the market.	Productive	Areas intended for economic activities that transform the area for productive purposes (Agriculture, forestry, mining, productive infrastructure).
		Equipped	Areas with an environmental and recreational function that allow cultural, religious, or commercial facilities (facilities for different uses).
Generic	Category applied to areas identified with letters, symbols, or general names, as well as those that do not define land uses.	Urbanization	Areas intended to integrate housing and equipment where green is relevant, but fragmented (housing and equipment).

Table 2. Analytical categories for the semantic and regulatory dimensions of natural areas of urban planning instruments. Source: Prepared by the authors.

Finally, the results were synthesized into graphs and cartographic representations, enabling a contrast between the semantic and regulatory discourses and showing the different modes of nature production that emerge from the case study.

V. RESULTS

Identification of socio-historical periods of nature recognition in the AMC's urban planning

Based on the analysis of the metropolitan and communal regulatory plans from the mid-20th century onwards, the context in which they were developed, and interviews with experts, four socio-historical periods in which the recognition and production of nature within the AMC evolved were identified and characterized (Table 3).

1. The first period (1960-1979) was characterized by the AMC's industrial expansion, in which natural areas were recognized and regulated mainly with a functional and productive character, regarding the coexistence of industrial and housing areas, under a logic of buffer and green areas.
2. The second period (1980-1999) is characterized by the highest number of the AMC's communal regulatory plans coming into force, in which nature is named and regulated by figures that respond to a mercantile logic, serving the State-led liberalization of the land market.
3. The third period (2000-2010) is characterized by the highest number of zoning designs that recognized natural areas, despite fewer regulatory plans being passed than in the previous period. This is in line with an environmental perspective that permeates institutions and public policies, which seek to ensure greater protection of natural areas within the urban boundary.

	Socio-Historical Periods							
	1960-1979 Industrial poles		1980-1999 Neoliberalization of the land		2000-2009 Common good		2010-2025 Fragmentation of environmental protection	
Number of regulatory plans enacted since 1960	11 (4 N/A)*		11		7		4	
Number of plans that consider natural areas	7		6		7		4	
Identified areas	Urbanized Areas	Natural areas	Urbanized Areas	Natural areas	Urbanized Areas	Natural areas	Urbanized Areas	Natural areas
Total areas	51	12	58	13	160	53	95	26
Percentage of natural areas versus urbanized areas	24%		22%		33%		27%	
Technical-political understanding of nature by period	Nature acquires a functional character limited to complementing industrial areas or to establishing itself as a productive space.		Nature is oriented towards the logic of the land market becoming a tradable good subject to demand.		Nature is beginning to be protected and is destined for public spaces for recreation and to mitigate natural threats.		The protection of nature is transferred to other political entities, fragmenting decision-making in this matter.	

Table 3. Definition of socio-historical periods. Source: Prepared by the authors.

- A shift in the regulatory recognition of natural areas from regulatory plans to other legal bodies, such as Sanctuaries or the Urban Wetlands Law, marks the fourth period (2011-2025). This is reflected in a decrease in the areas that recognize natural areas.

This path shows a trend towards fewer regulatory plans passed and an increase in the number and specificity of designations assigned to recognized natural areas. The historical average of natural areas relative to urbanized areas does not exceed the 30% reached in 2000. This shows that the designations and regulations assigned to natural areas do not follow a homogeneous pattern but rather reflect a combination of historical, regulatory, and socio-political factors that evolve towards protection figures external to regulatory plans (Table 3).

Contrasts between semantic and regulatory discourse

From a critical reading of socio-historical periods, it is evident how the language of planning can operate as a symbolic device that does not always translate into a

coherent action on the territory. In accordance with the methodological strategy, the analysis is organized around a comparison of the semantic and normative discourses of natural areas, which consider the assigned values and functions that form the basis for identifying nature's modes of production.

Contrasts between the semantic and regulatory discourses of nature production in metropolitan planning instruments

Eleven areas associated with nature were identified in the metropolitan planning, which evolved from a functional and reductionist language, whose names do not recognize the geomorphological particularities of the place (e.g., forest parks, recreation areas or ecological protection areas), towards an increasing semantic technification that incorporates environmental valorization, in which denominations such as "cliffs", "beach" and "drains" emerge. This change not only implies greater descriptive precision but also a reconfiguration of the way nature is valued, with an apparently greater centrality of the environment.

In general terms, the semantics with which urban nature is recognized over time are associated with social and environmental values. However, this configuration is altered in its regulatory translation, in which the economic, social, and environmental value emerges equally. This evidences a process of concealment about the final meaning that is given to the territory, where areas with environmental value, such as cliffs or beaches, in practice, end up transforming into spaces with an economic destination that promotes cultural, commercial, and tourist uses, which strain their original meaning (Figure 3).

In the first period, the few recognized natural areas have broad designations such as “parks and separations” and “forest parks”, which are interpreted semantically as socially functional and productive. However, in its regulatory translation, land uses move from an environmental language to a generic one. This regulatory irregularity facilitated practices such as forest monoculture, which evidences an instrumentalization of nature.

In the second period, categories such as “ecological protection areas” are incorporated, explicitly introducing an environmental value of “conservation” into the semantic discourse, while others, such as “recreation areas,” consolidate the social-recreational character of the previous period. However, this differentiation is diluted in the regulatory discourse, where environmental zones admit a variety of uses such as tourism, housing, and equipment, which prevent conservation, making what is semantically regulated as environmental more flexible.

In the third period, there is a significant increase in both the number of natural areas and the specificity of their designations (“cliffs”, “beaches”, or “drains”), reflecting a greater technical recognition of urban nature. Nevertheless, this semantic expansion does not translate into more effective protection, since areas with environmental value continue to be oriented towards economic uses linked to urban development. In contrast, the areas with a social character maintain coherence between the two dimensions, which evidence an asymmetry in the translation of values (Table 4).

In summary, metropolitan planning makes a persistent gap between semantic and regulatory discourse evident. The natural areas of an environmental character in the semantic discourse are largely transformed into areas of economic exploitation. However, those areas recognized as social value remain constant across both discourses. These results suggest that, despite the rise of environmental and social discourse, there are still natural areas available to support productive activities associated with ports, infrastructure, and the installation of different

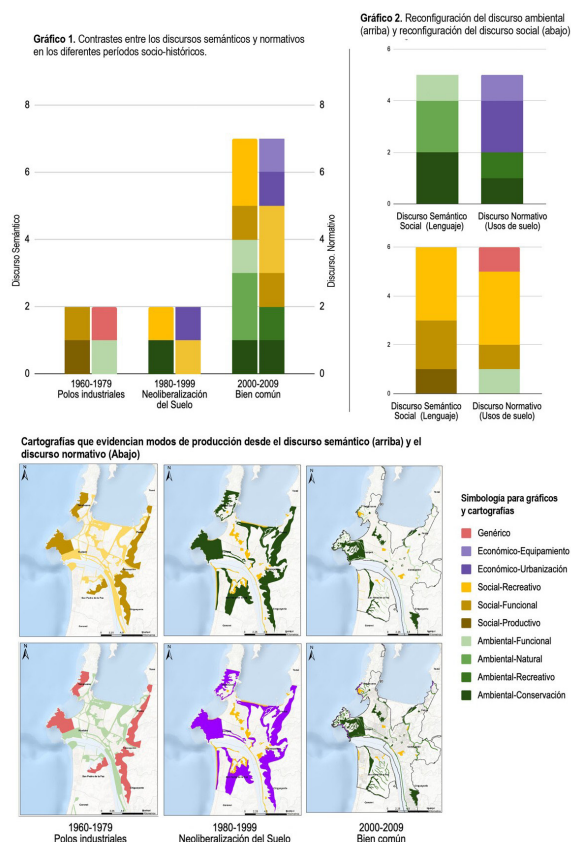


Figure 3. Graphs and cartographies of contrasts between semantic and regulatory discourses in different socio-historical periods at the metropolitan scale. Source: Prepared by the authors.

equipment. Urban development on natural spaces validates metropolitan expansion processes through designations and regulatory categories that attenuate and make invisible the territorial impacts associated with such transformations.

Contrasts between the semantic and regulatory discourses of nature production in the communal planning instruments

At the communal planning level, across different periods, 93 areas associated with nature were identified. In general terms, there are discrepancies between semantic and regulatory discourses. While the former tends to name these areas primarily in terms of environmental values, the latter regulates them primarily through social and, in some cases, economic functions (Figure 4).

In the first period, natural areas are recognized under categories such as “green areas”, “free areas”, or

Modes of production	1960-1979		1980-1999		2000-2009	
	Semantic	Regulatory	Semantic	Regulatory	Semantic	Regulatory
Generic	-	50%	-	-	-	-
Economic-Recreational	-	-	-	-	-	-
Economic-Equipment	-	-	-	-	-	14%
Economic-Urbanization	-	-	-	50%	-	14%
Economic-Productive	-	-	-	-	-	-
Social-Productive	50%	-	-	-	-	-
Social-Equipment	-	-	-	-	-	-
Social-Functional	50%	-	-	-	14%	14%
Social-Recreational	-	-	50%	50%	29%	29%
Environmental-Restriction	-	-	-	-	-	-
Environmental-Functional	-	50%	-	-	14%	-
Environmental-Natural	-	-	-	-	29%	-
Environmental-Recreational	-	-	-	-	-	14%
Environmental-Conservation	-	-	50%	-	14%	14%

Table 4. Percentages of modes of nature production in the different historical periods on a metropolitan scale. Source: Prepared by the authors.

“afforestation”, which configure a semantics associated with an environmental-conservation and environmental-recreational character. However, this orientation loses force in its regulatory translation, since the admitted uses acquire a social-recreational or even generic character, as evidenced by a weak correspondence between the declared environmental valuation and its regulatory materialization.

During the second period, the use of generic designations to identify natural areas predominates, such as “sector 5” or “sector 6”. This semantics evidences an invisibilization of nature as an explicit category of planning. However, in regulatory discourse, these areas acquire an environmental character oriented towards conservation, indicating that the environmental dimension is not only constructed through language but also emerges from regulation.

In the third period, the greatest number and diversity of natural areas are concentrated, which accounts for greater specificity in recognizing the natural. However, this greater semantic specificity associated with environmental values, at the regulatory level, is oriented towards other urban functions. In the fourth period, a semantic discourse associated with environmental conservation and restriction is consolidated and interpreted as the result of the institutionalization of sustainability in urban planning. However, the inconsistency mentioned in the previous periods persists (Figure 4 and Table 5).

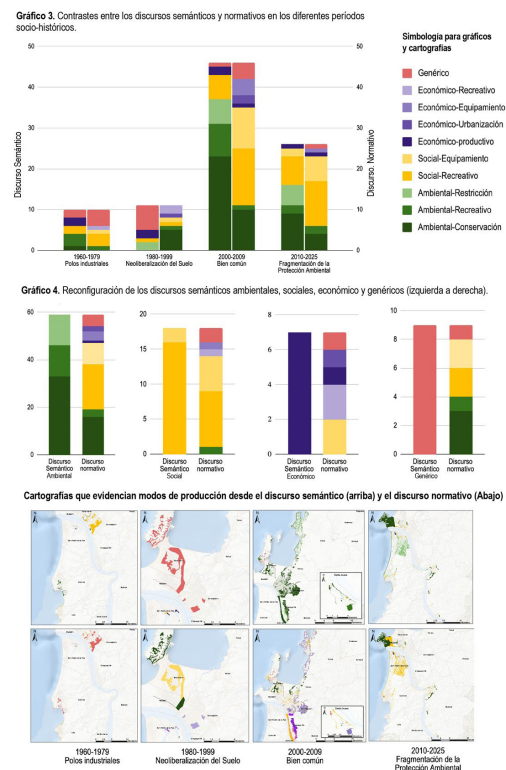


Figure 4. Graphs and cartographies of contrasts between semantic and regulatory discourses in different socio-historical periods at the communal scale. Source: Prepared by the authors.

Modes of production	1960-1979		1980-1999		2000-2009		2010-2025	
	Semantic	Regulatory	Semantic	Regulatory	Semantic	Regulatory	Semantic	Regulatory
Generic	20.0%	40.0%	54.5%	-	2.2%	8.7%	-	3.8%
Economic-Recreational	-	10.0%	-	18.2%	-	-	-	-
Economic-Equipment	-	-	-	-	-	8.7%	-	3.8%
Economic-Urbanization	-	-	-	9.1%	-	4.3%	-	-
Economic-Productive	20.0%	-	18.2%	-	4.3%	2.2%	3.8%	3.8%
Social-Productive	-	-	-	-	-	-	-	-
Social-Equipment	-	10.0%	-	9.1%	-	21.7%	7.7%	23.1%
Social-Functional	-	-	-	-	-	-	-	-
Social-Recreational	20.0%	30.0%	9.1%	9.1%	13.0%	30.4%	26.9%	42.3%
Environmental-Restriction	-	-	18.2%	-	13.0%	-	19.2%	-
Environmental-Functional	-	-	-	-	-	-	-	-
Environmental-Natural	-	-	-	-	-	-	-	-
Environmental-Recreational	30.0%	10.0%	-	9.1%	17.4%	2.2%	7.7%	7.7%
Environmental-Conservation	10.0%	-	-	45.5%	50.0%	21.7%	34.6%	15.4%

Table 5. Percentages of modes of nature production in the different historical periods on a communal scale. Source: Prepared by the authors.

The areas called “landscape protection”, “special protection of slopes”, “protection of natural value resources of cliffs” and “landslide restriction” have categories associated with environmental protection or territorial restriction; however, they allow land uses linked to housing, hotels, and equipment. This shows a divergence between the semantic discourse of protection and the effective regulation of the territory, creating a recurring pattern in which the semantic discourse emphasizes ecological or protective values. In contrast, the regulations permit urbanization and the installation of infrastructure and equipment.

Dominant modes of production

The analytical categories of value and function show that the modes of production of nature in the urban planning of the Metropolitan Area of Concepción do not operate in isolation, but are shaped by the overlap and tension among environmental, social, economic, and generic values. Although an environmental and social assessment of nature predominates at the semantic level, associated with conservation and recreation functions, its regulatory

translation implements a mode of producing a social character that reorients these spaces towards logics of well-being and social cohesion, thereby weakening their conservation. On the other hand, the persistence of generic categories over time reflects a tactical ambiguity in urban planning that facilitates the flexibility and adaptation of nature to other rationalities of land use, thereby reducing its meaning. This systematic mismatch suggests that nature is discursively recognized in order to reconfigure it materially for other purposes.

VI. DISCUSSION

The results obtained allow us to interpret that urban planning is not only a technical regulatory instrument but also a discursive device that orients the production and transformation of nature. The systematic gap between semantic and regulatory discourse shows that the production of nature is mediated by power relations, as proposed by Shirazi (2023) and Bourdieu (1991). This divergence, far from being a technical inconsistency, demonstrates a structural

logic in which the discursive recognition of nature does not necessarily translate into its effective protection. This shows how environmental representations of nature not only seek to protect but also conceal urban transformation logics oriented towards economic interests (Smith, 2020; Swyngedouw, 2011).

The modes of production also reveal a hidden hierarchy of values. Although planning is usually considered a space for balanced articulation among environmental, social, and economic dimensions (Valencia-Sandoval et al., 2010), these results show that this integration does not materialize symmetrically in territorial regulation. Instead, a hierarchy of values is established that favors certain productive and recreational logics, generating processes of exclusion in which forms of nature that do not conform to these rationalities are rendered invisible or subordinated (Van Speybroeck & Targa, 2026). In contrast, generic categories introduce ambiguity in regulation, facilitating the installation of institutional discourses and technical and legal regulations that can lead to unforeseen spatial practices (Blomley, 2023).

Language plays a key role in this process. Categories such as "green areas" reduce the ecological complexity of the territory by omitting specific qualities and facilitating their reinterpretation in different regulatory contexts (Reyes-Paecke & De la Barrera Malgarejo, 2019; De la Barrera et al., 2023). This limits the possibility of recognizing the complexities of the human-nature relationship within the urban environment (Van Speybroeck & Targa, 2026), where planning can be understood as a simplification technique that makes the territory legible, reduces its diversity and enables its transformation.

The results are consistent with other cases in Latin America, where urban planning operates under tensions between sustainability discourses and practices oriented to exclusive economic development (Escobar, 2015). The institutionalization of environmental discourse on natural areas does not guarantee their protection, as they remain exposed to intense urbanization. This reinforces the idea that language not only describes space but also classifies and organizes it by producing hegemonies over it (Foucault, 1977).

This observation is deepened between the different scales of planning. While at the metropolitan scale, there is a tendency to construct a more abstract and environmentally oriented discourse, at the communal scale, this translates into regulations that intensify the urbanization of natural areas. This suggests that the production of nature depends not only on the values attributed, but also on the level at which they operate.

Although recent literature highlights the role of citizenship in generating urban knowledge by proposing alternative ways

of understanding and producing nature that have not yet been incorporated into planning instruments (Bonhoure et al., 2026), the results indicate that institutional instruments mediate the production of urban nature.

The findings presented allow us to argue that urban planning not only organizes the relationship between the city and nature but also redefines its meaning and function by producing a nature that is simultaneously recognized as an environmental value and as a resource for urban development. This proposes that planning fixes certain representations of nature while omitting others present among territorial actors. One of the limitations of the research lies in focusing on the institutional discourses contained in the planning instruments, without incorporating socio-economic variables or delving into the perceptions and disputes of other territorial actors. However, the results suggest that regulatory transformations could be associated with differentiated processes of territorial valorization, opening future lines of research that incorporate community and private perspectives on nature production and analyze the relationship between urban planning and socio-spatial inequality across different modes of nature production.

VII. CONCLUSIONS

The AMC exhibits a changing socio-historical trajectory in the recognition of nature, marked by increasing sophistication in the language used and in the environmental and social values it entails. However, its recognition is limited to the discursive plane, since it is not transformed into specific regulations. In practice, the regulation of nature primarily focuses on social and economic functions.

This inconsistency confirms that the naming of areas in urban planning not only serves a descriptive role but also reconfigures nature. The categories used to name it not only reflect certain visions but also enable or restrict specific forms of intervention. Language operates as a mechanism that obscures urban transformation processes, in which the environment functions as a discursive layer that does not necessarily translate into the effective protection of nature. Through language, urban planning produces nature under different rationalities in which the economic and social are hierarchized, overlapping with the environmental.

This way of producing nature is expressed differently across planning scales. While at the metropolitan level, the definition of zoning is dominated by an abstract, environmental semantic language that recognizes nature, at the communal level, regulatory languages predominate, privileging social and economic functions to define land

uses. This denotes a strategic adaptability between what is named and the norm.

From a methodological perspective, the contrast between semantic and normative discourse enables the systematic and replicable visibility of the consistencies and discrepancies that arise in urban planning between what is declared and what is regulated. This can contribute to improving understanding of the legal structure on which the current socio-environmental conflicts that emerge in Chilean cities arise and develop, opening the possibility of looking more closely at the role of discourses in disputes over the meaning and use of nature in urban contexts.

Finally, the findings underscore the need to move towards urban planning instruments that are more consistent with the recognition and protection of nature, and that question the use of generic categories or "environmental makeup" that mask territorial decisions that do not aim at its protection.

VIII. CONTRIBUTION OF AUTHORS CRediT:

Conceptualization, C.C.; Data curation, C.C.; Formal analysis, C.C.; Acquisition of financing, F.D.B.; C.C.; M.F.; Research, C.C.; Methodology, C.C.; F.D.B.; M.F.; Project management, X.X.; Resources, X.X.; Software, X.X.; Supervision, F.D.B.; Validation, X.X.; Visualization, C.C.; Writing - original draft, C.C.; M.F.; F.D.B.; Writing - revision and editing, C.C.; M.F.; F.D.B.

IX. BIBLIOGRAPHIC REFERENCES

Beatley, T. (2011). *Biophilic cities: Integrating nature into urban design and planning*. Island Press.

Blomley, N. (2023). *Territory: New trajectories in law*. Routledge.

Bonhoure, I., Guba, B., Peer, C., Labastida, I., & Perelló, J. (2026). Citizen science contributions to sustainable urban transformation, urban sustainability and urban planning: A systematic literature review. *Cities*, 174, 107056. <https://doi.org/10.1016/j.cities.2026.107056>

Bourdieu, P. (1991). *Language and symbolic power*. Polity Press. https://monoskop.org/images/4/43/Bourdieu_Pierre_Language_and_Symbolic_Power_1991.pdf

De La Barrera, F., Reyes-Paecke, S., Truffello, R., De La Fuente, H., Salinas, V., Villegas, R., & Steiniger, S. (2023). Comparing green spaces provision and accessibility indicators over a latitudinal gradient and multiple climate zones. *Urban Forestry & Urban Greening*, 79, 127791. <https://doi.org/10.1016/j.ufug.2022.127791>

Reyes-Paecke, S., & De La Barrera Melgarejo, F. (2019). Monitoreo de los avances en desarrollo urbano: análisis de los catastros de áreas verdes urbanas en el Área Metropolitana de Santiago, Chile. *Revista INVI*, 34(96), 129-150. <http://dx.doi.org/10.4067/S0718-83582019000200129>

Escobar, A. (2010). *Territorios de diferencia: Lugar, movimientos, vida, redes*. Envió Editores.

Escobar, A. (2015). Territorios de diferencia: La ontología política de los "derechos al territorio". *Cuadernos de Antropología Social*, (41), 25-38. <https://revistascientificas.filo.uba.ar/index.php/CAS/article/view/1594>

Fairclough, N. (1992). *Discurso y cambio social*. Cambridge, Polity Press.

Foucault, M. (1977). *Vigilar y castigar: Nacimiento de la prisión* (trad. A. Fontana). Siglo XXI Editores.

Gehl, J. (2011). *Life between buildings: Using public space* (6th ed.). Island Press.

González Redondo, C. (2024). El análisis del discurso para abordar la dimensión simbólica del espacio urbano. *Cuaderno Urbano. Espacio, Cultura y Sociedad*, 39(39), 33-52. <https://doi.org/10.30972/crn.39397892>

Harvey, D. (1982). *The limits to capital*. Basil Blackwell.

Harvey, D. (1996). *Justicia, naturaleza y la geografía de la diferencia*. Blackwell Publishers.

Hidalgo, R., Vergara-Constela, C., & González-Rodríguez, M. (2022). Las condiciones de la urbanización y la producción de naturaleza en ciudades litorales chilenas. Los casos de Valparaíso y Coquimbo. *Revista EURE-Revista de Estudios Urbano Regionales*, 48(145), 1-24. <https://dx.doi.org/10.7764/eure.48.145.03>

Jacobs, J. (2014). *Muerte y vida de las grandes ciudades*. Praxis

Leff, E. (2004). *Racionalidad ambiental: La reapropiación social de la naturaleza*. Siglo XXI editores.

Lefebvre, H. (2014). *La producción del espacio*. Praxis.

McHarg, I. (1969). *Proyectar con la naturaleza*. Gustavo Gili.

Merchant, C. (2023). *La muerte de la naturaleza: Mujeres, ecología y revolución científica*. Siglo XXI editores.

Mignolo, W. (2012). Decolonizing Western epistemology / building decolonial epistemologies in A. M. Isasi-Díaz & E. Mendieta, *Decolonizing epistemologies: Latina/o theology and philosophy*. Fordham University Press. <https://doi.org/10.5422/fordham/9780823241354.003.0002>

Nicolás-Artero, C., Fuster-Farfán, X., & Velut, S. (2021). Introducción. Disputada, apropiada y desposeída: la naturaleza en las ciudades latinoamericanas. *Cahiers des Amériques latines*, 97. <https://doi.org/10.4000/cal.13089>

Reclus, E. (1875). La tierra y los hombres. *Revista Europea*, 4(70), 663-664. <http://www.filosofia.org/rev/reu/1875/n070p663.htm>

Santos, M. (1978). *Por uma Geografia Nova: Da Crítica da Geografia a uma Geografia Crítica*. Editorial Edusp.

Scott, J. C. (1998). *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. Yale University Press.

Shirazi, M. R. (2023). Discourse studies and urban research: Methodological challenges, achievements, and future prospects. *Urban Science*, 7(2), 42. <https://doi.org/10.3390/urbansci7020042>

Smith, N. (2007). Nature as accumulation strategy. *Socialist Register*, 43, 16-36. <https://socialistregister.com/index.php/srv/article/view/5856>

Smith, N. (2020). *Desarrollo desigual, naturaleza, capital y la producción del espacio*. Traficantes de sueños.

Swyngedouw, E. (2011). ¡La naturaleza no existe! La sostenibilidad como síntoma de una planificación despolitizada / Nature does not exist! Sustainability as Symptom of a Depoliticized Planning. *Urban*, (01), 41–66. <https://polired.upm.es/index.php/urban/article/view/410>

Valencia-Sandoval, C., Flanders, D. N., & Kozak, R. A. (2010). Participatory landscape planning and sustainable community development: Methodological observations from a case study in rural Mexico. *Landscape and Urban Planning*, 94(1), 63–70. <https://doi.org/10.1016/j.landurbplan.2009.07.018>

Van Speybroeck, K., & Targa, J. (2026). Contested natures in the city: rewilding, othering and more-than-human perspectives. *Urban Geography*, 1–23. <https://doi.org/10.1080/02723638.2026.2622654>

Villagra Islas, P. (2011). Leonel Pérez y Rodrigo Hidalgo (eds.). Concepción metropolitana: evolución y desafíos. *Revista de Geografía Norte Grande*, (48), 179-182. <https://dx.doi.org/10.4067/S0718-34022011000100010>

Von Mentz, B. (Coord.). (2012). *La relación hombre - naturaleza. Reflexiones desde distintas perspectivas disciplinarias*. Siglo XXI Editorial.

Waldheim, C. (2016). *Landscape as Urbanism. A general theory*. Princeton University.

Walsh, C. (2007). Interculturalidad y Colonialidad del Poder. Un pensamiento y posicionamiento "otro" desde la diferencia colonial en S. Castro-Gómez y R. Grosfoguel (Eds.), *El giro decolonial. Reflexiones para una diversidad epistémica más allá del capitalismo global* (pp.47-62). Siglo del Hombre Editores.

Zazo-Moratalla, A., Orellana-Mcbride, A., & Cerda-Inostroza, C. (2023). Agricultura urbana en barbecho. Concepciones en la planificación urbana chilena. *Revista EURE - Revista de Estudios Urbano Regionales*, 49(147), 1-25. <https://dx.doi.org/10.7764/eure.49.147.06>

X. ACKNOWLEDGMENTS

We thank all the participants in this research for their time, willingness, and valuable collaboration, which made this study possible.