

Coastal Landscape and Public Use. A Landscape Architecture Proposal for the Los Limites Beach, Chubut, Argentina

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Abstract

Lungo la costa argentina della Patagonia lo sviluppo di un'urbanizzazione di carattere privato interessa diffusamente le aree a spiaggia pubbliche. Questo contributo presenta il caso di Los Limites Beach, un'area situata lungo la costa della Patagonia. Dopo aver analizzato caratteri naturali e sociali dell'area, è stato sviluppato un progetto di paesaggio che ha l'obiettivo di proteggere l'identità paesaggistica della costa della Patagonia preservando le sue componenti naturali e favorendone, al contempo, l'uso pubblico.

Parole chiave

Urbanizzazione e privatizzazione costiera, aree pubbliche, paesaggio costiero.

Abstract

Along the Argentinian Patagonia Coast private urbanization develops over public beach areas. This study presents the case of an area called Los Limites Beach situated along the Patagonian coast. After an analysis, survey and diagnosis of natural and social features, a landscape project was developed having the objective to protect Patagonian coastal landscape identity, preserving its natural components and encouraging its public use.

Keywords

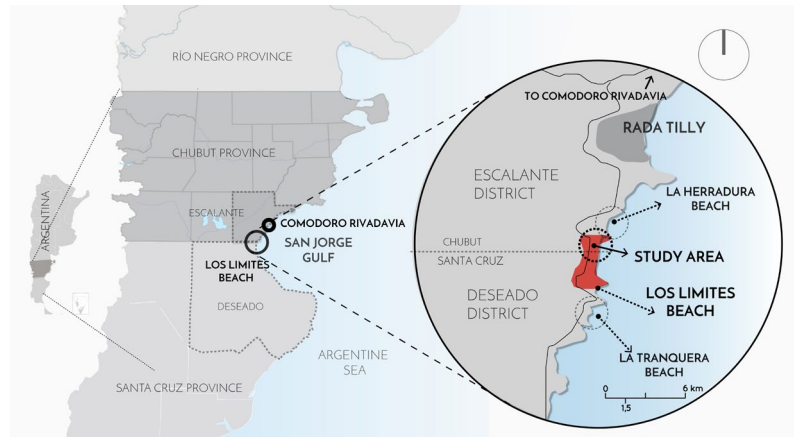
Coastal urbanization, coastal privatization, public areas, coastal landscape.

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Fig. 1 – *Los Límites Beach* location. Source: author's elaboration based on Google Maps 2015.



Introduction

Díaz de Pineda et al. (1973) define landscape as the plurisensorial perception of an ecological relation system; in these terms, the landscape is generated by a sensorial appreciation of the place and the interaction between ecological and cultural features. As postulated by Nogué (2008), the landscape is the cultural effect of society on a given space, recognizable in two related dimensions: one physical, material and objective, and another perceptive, cultural and subjective.

Man acts on the natural landscape by intervening, modifying, and recomposing the place, materializing needs, aspirations, desires, and experiences. The result is a composition of a new appearance, an innovated landscape (Aponte García, 2003). This cultural landscape reflects the society attitude towards the environment, as well as the attempts of man to adapt to the environment in order to improve his life condition. However, the man-landscape relationship is not always harmonious neither balanced.

Svampa (2001) affirms that as a consequence of the application of development models based on economic globalization that have been carried out since the Nineties in Argentina, this country is tackling a deep transformation of socio-spatial patterns that entails significant changes in the urban scene. The

author mentions that this transformation results in consequences like the increase of social inequality and social exclusion. This 'social rupture' phenomenon is materialized in an 'urban fracture' due to the development of 'locked' residential areas, such as gated communities and country clubs.

Perahia and Vidal Koppmann (2010) highlight some common characteristics of these urban developments, namely their isolated features and the related fact of being far away from the major urban centres and thus accessible only by highways, routes, and private transport. These urban developments generate high costs of transportation and promote a higher energy and non-renewable resource consumption. Consequences of this type of urban developments are detrimental to life quality of inhabitants, resulting in an even worse scenario in coastal environments, which are the most sensitive areas to human disturbance (Scalise and Schanck, 2007). Researches on this topic carried out by the University of Buenos Aires show how the new residential areas consisting of 'closed typologies' situated in urban peripheries, such as gated neighborhoods and country clubs, caused a rapid modification of the territorial footprint, generating a substantial change in spatial patterns and landscapes (Vidal Koppmann, 2005).

By appealing to exceptions in the existing zoning

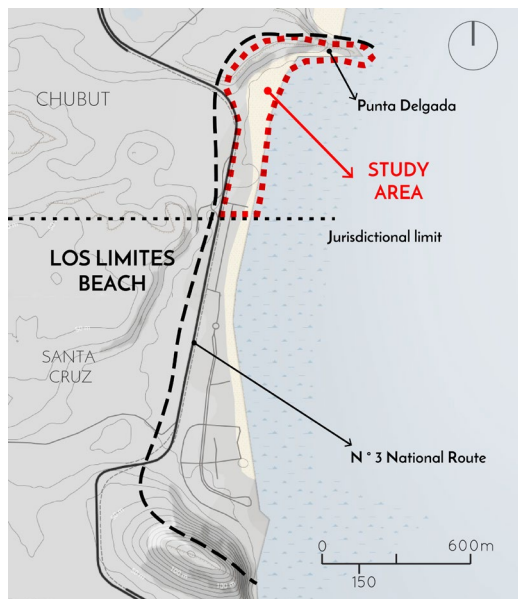


Fig. 2 –The study area. Source: author's elaboration based on Mapbox 2015.

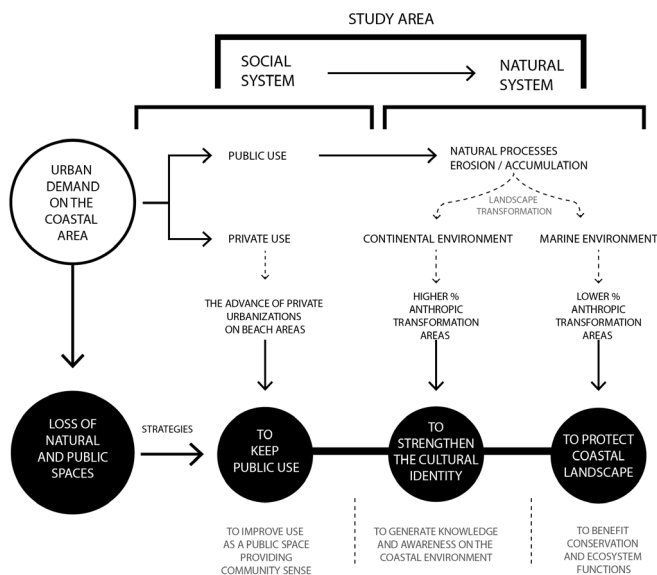
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Fig. 3 – The main beach areas. Source: author's elaboration

regulations, in several coastal cities of the country, gated communities are built inside beaches and natural resource areas, without the consensus of the community. The advance of private actors and their real estate business is not consistent, in most cases, with the strategic plans and zoning by municipalities, demanding the creation of a consensual urbanism to solve these critical situations. This privatization of natural resources to generate suburban low-density and fragmented areas (both a social and spatial fragmentation) is disintegrating the coastal landscape (Vidal Koppmann, 2015). Biodiversity is strongly affected and the public access to the coast is blocked.

As postulated by Codignotto (2000), in the Patagonian coast, territorial policies have paved the way to private urbanization to advance over beach areas, promoting the privatization of public resources and the vulnerability of their landscape. In recent population censuses the number of inhabitants in the town closest to the study area (i.e. *Los Límites Beach*, see hereafter), namely Rada Tilly, has roughly doubled its number. On the *La Herradura Beach*, situated at 9 km from the city of Rada Tilly, near *Los*

Límites Beach, the construction of a gated community (gated neighborhood) known as 'Country Club *La Herradura*', was carried out. This urban development does not take into account the local coastal dynamics and directly affects the functioning of the natural ecosystem. The most visible changes are related to the constructions of buildings and roads that affected the configuration of the coastline by increasing beach's erosion during sea storms. In 2011 several houses in the neighborhood were affected by a storm, however this event did not prevent the sale of land on the next vacant beach, *Los límites Beach*, that is our case study. This is the last untouched beach in the region, an important habitat for several species. Intervening in this area is important not only to preserve a significative biodiversity hotspot, but also in order to rebuild the link between the present-day society with the landscape, a link that is currently lost (Aponte Garcia 2003). A *landscape* project that considers both the natural existing matrix and the socio-cultural features is therefore needed. A landscape proposal in this area grants the possibility to preserve the natural landscape while promoting public use, so its consequent en-



hancement and protection. The specific objectives of the landscape project for the coastline area of *Los Límites Beach* here presented are: (i) to characterize the coastal landscape in the study area, (ii) to identify the admitted public uses, (iii) to strengthen the cultural identity of this coastal landscape.

Analysing the Study Area: *Los Límites Beach*

Los Límites Beach is located on the interprovincial border of Chubut (Escalante District) and Santa Cruz (Deseado District) in the San Jorge Gulf basin and it is part of a seven beaches system of the Argentine Sea (*Mar Argentino*) in the South Atlantic. It is 20 km North of the city of Comodoro Rivadavia, being its closest town Rada Tilly at 12 km. *Los Límites Beach* borders to its north with *La Herradura Beach* and to its south with *Punta Peligro y Playa La Tranquera*.

The study area consists of the northern area of *Los Límites Beach* that borders to the north with *Punta Delgada*, to the south with the jurisdictional limit between Chubut and Santa Cruz Provinces, to the east with the Argentine Sea, and to the west with the national route N° 3.

The main attractions for visitors of *Los Límites*

Beach are its location and its high visual quality derived from its fine sandy beaches, which give possibilities for recreation in an outdoor public space. In *Los Límites Beach*, the area corresponding to Santa Cruz Province is being affected by several transformations due to the progressive division into lots and the construction of infrastructures for private urbanizations. This ongoing transformation is today already visible because of the outlines of roads that cause land fragmentation.

It should be noticed that these landscape changes are being carried out in areas that possess a legal environmental framework. Specifically, Law 2658 of Santa Cruz Province aims at preventing short, medium and long effects that activities, projects, programs, public or private undertakings could cause to the ecological balance. The law considers those activities capable of modifying the environment, those which contaminate directly or indirectly the soil, water, air, flora, fauna, landscape and other components, both natural and cultural. The environmental legislation of Chubut Province too (Law 4563) is aimed at the preservation, conservation and support of landscape resources for its inhabitants.

However, in spite of these legislative frameworks by both Provinces that encourage the conservation of landscape and the rational use of resources, works on beach areas are currently being developed.

This situation put the landscape and its features at risk due to the elimination of the coastal sage scrub and the levelling of land for roads and buildings. These actions significantly affect the natural dynamics of the landscape and its visual quality.

The Natural System

Los Límites Beach is part of the area of the basin of the San Jorge Gulf. The Gulf Coast has cliffs of varied altitude, formed by marine sediments of the upper tertiary (Patagonia formation). It has yellowish greenish to yellowish-gray sandstone where fragments of oysters and fossils from the Quaternary period are abundant (Isla et al. 2002). It is the most ancient basin and prolific producer of hydrocarbons from Argentina. In addition to its oil reserves, San Jorge Gulf basin has a high fossil content, both of invertebrates, vertebrates, and plants (Sylwan, 2001).

The study area covers 109 ha of which 47.3 are made up of fine sandy beach. The beach (3 km) is situated in a low area and it is preserved thanks to the recycling of fine sand dune by the west winds.

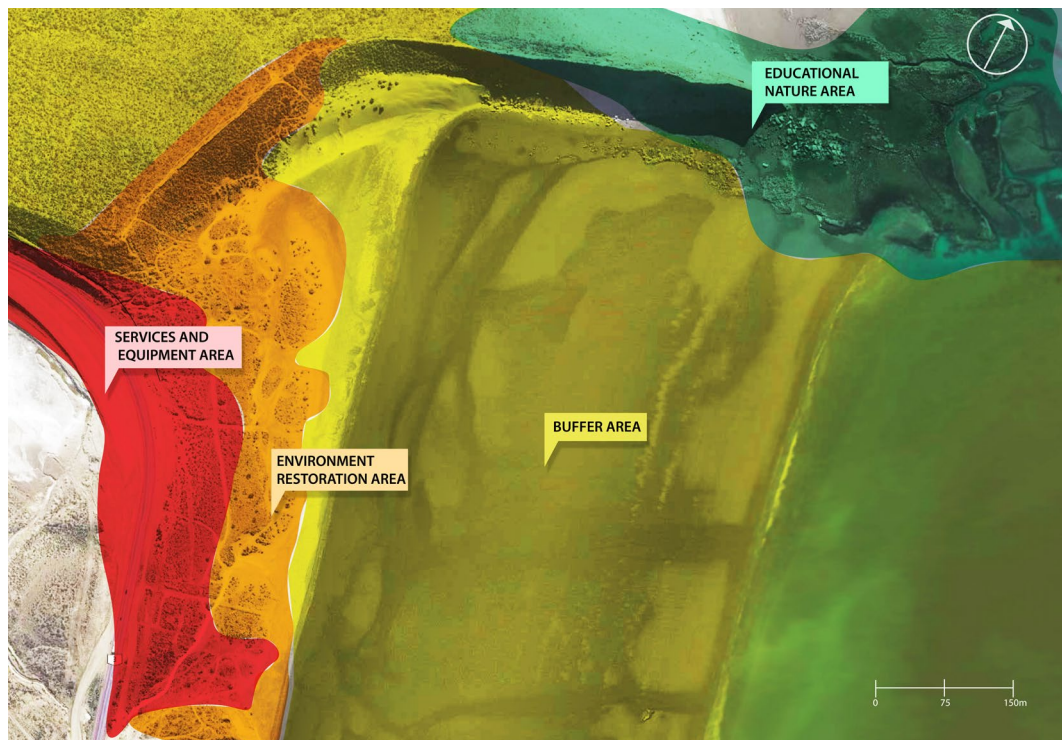
Vegetation grows in different sites because of

the contrasts of the topography. In throats, dense thickets of shrubs mount type grow, while the wettest areas are suitable for shrub vegetation. *Festuca* and *Mulinum* are also present. The degree of coverage of this steppe varies between 60% and 80%. In areas without possibilities of drainage, there is halophytic vegetation.

Compared with other regions of Argentina the steppe has few species of mammals. However, they are of great ecological importance. The coastal area of the Gulf is crucial for the survival of species and works as a biological corridor for marine fauna. The *Otaria flavescens* is considered a species of special value for the sector of San Jorge Gulf.

As a result of the analysis of the physical aspects (geology, geomorphology, soils, climate etc.) and biological aspects (vegetation and wildlife) and the photo interpretation of satellite images, it is possible to identify five landscape units according to the performance of its components:

- Plateau: flat formations that have a great plain area high above the sea level.
- Aeolian ramp: in this unit the vegetation plays an important role since it slows down the wind, traps and stabilizes lightweight sediments that the wind carries.
- Cliff: during low tide, the rocks that make up the cliffs are exposed and have fossil materials of



marine animals from the Miocene (between 5 and 23 million years ago).

- Wave cut platform: a coastal bench which is exposed during the downspouts of the sea, characterized by its stone wells, where a variety of mollusks and bivalves are found that serve as food for birds and villagers.
- Beach: this landscape is affected by the incessant action of the sea. In this unit, the vegetation is an ecosystem regulating factor, that acts as a buffer from waves erosion and regulates the replenishment of sand. The “next beach” subunit occupies the highest percentage of this unit’s surface; it has no vegetation since it is completely covered by the sea.

The Built and Land Use System

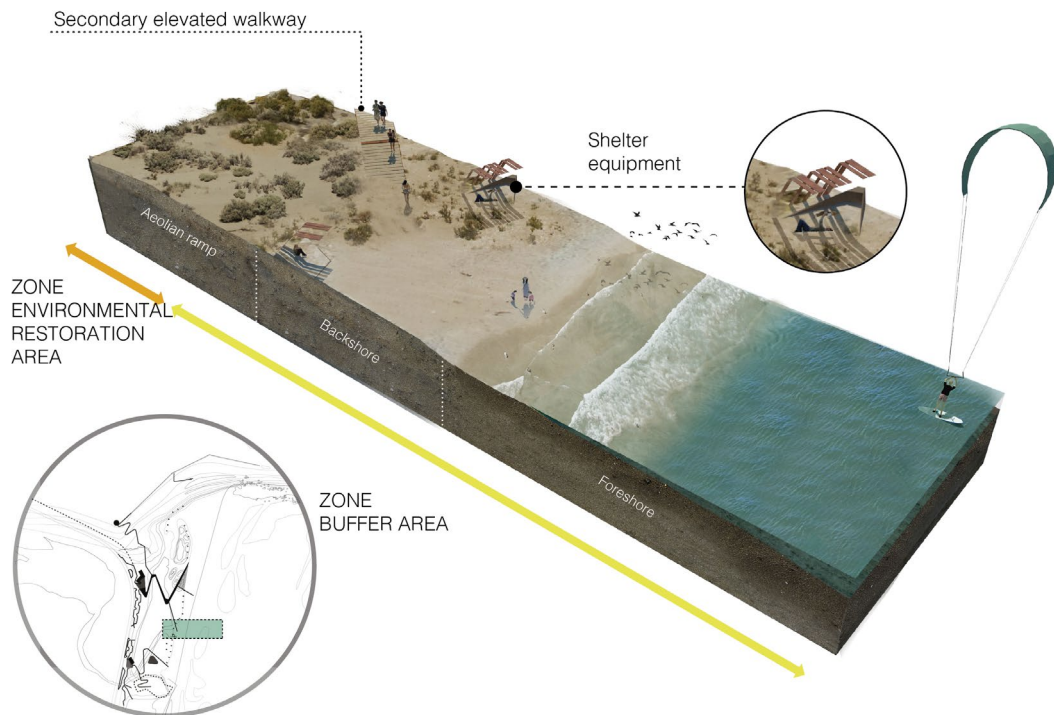
The study area’s equipment consists of a series of car roads made of river stones, poor signage, and makeshift bins. Access to the beach is in poor con-

dition. The area has no regulated parking zones and users move in this space according to their convenience and possibility of entering.

On the Plateau’s slopes, people use motorized quadricycles, resting and camping outdoor and in the lower areas of the slopes. These are the most frequently used areas, together with some places of the Wave cut platform where people fish and harvest mollusks.

In the sector of the “next beach”, when sea level goes down, the surface is transformed into a large esplanade where people practice sand yachting activities, as well as over flights on the coast with ultra-light gliders. In the marine sector, people display activities such as windsurfing, kitesurfing and board surfing.

The productive matrix of the study area is directly related to oil. The town of Rada Tilly was inhabited by higher economic level residents who collaborated in the creation of a seaside villa. Closely related



to Comodoro Rivadavia, Rada Tilly is today characterized by a high urban growth, along affecting the nearby beaches. As mentioned above, some new settlements in the Rada Tilly surrounding area appeared, such as the gated neighborhood of *La Heradura* Country Club and *Los Límites Beach*'s lots. In recent years, the economy has changed: fishing activities, services, and alternative energy have acquired greater importance.

The Social System

Labour force from all over the country, that was established together with descendants of The Mapuches and The Tehuelches, created a particular melting pot, a specific cultural ensemble (Lafont, 2009). However, since the area has always been a transit place, labourers have not been able to generate a sense of belonging to this landscape.

In the last population censuses, Rada Tilly, the closest town to the study area, showed a significant

increase in the number of inhabitants. According to data from the National Institute of statistics and censuses, the number of inhabitants in Rada Tilly raised from 6,208 in 2001 to 9,100 in the year 2010 (Dirección General de Estadística y Censos, 2015). This population growth led to the saturation of some public services and to an increasing deficiency in the population basic needs (housing, health services, basic education and minimum income).

For a comprehensive social analysis of the area, two opinion interviews and a survey were carried out (Duverger, 1996). In the selection of interviewees, the knowledge about the local natural environment and its conservation were taken into account.

In the interview to Maria Sol Coetsee, archivist of the regional Museum of Rada Tilly, information regarding the use of the study area were obtained thanks to her extensive knowledge about the history of the beaches and her experience based on them. The second interview was carried out with

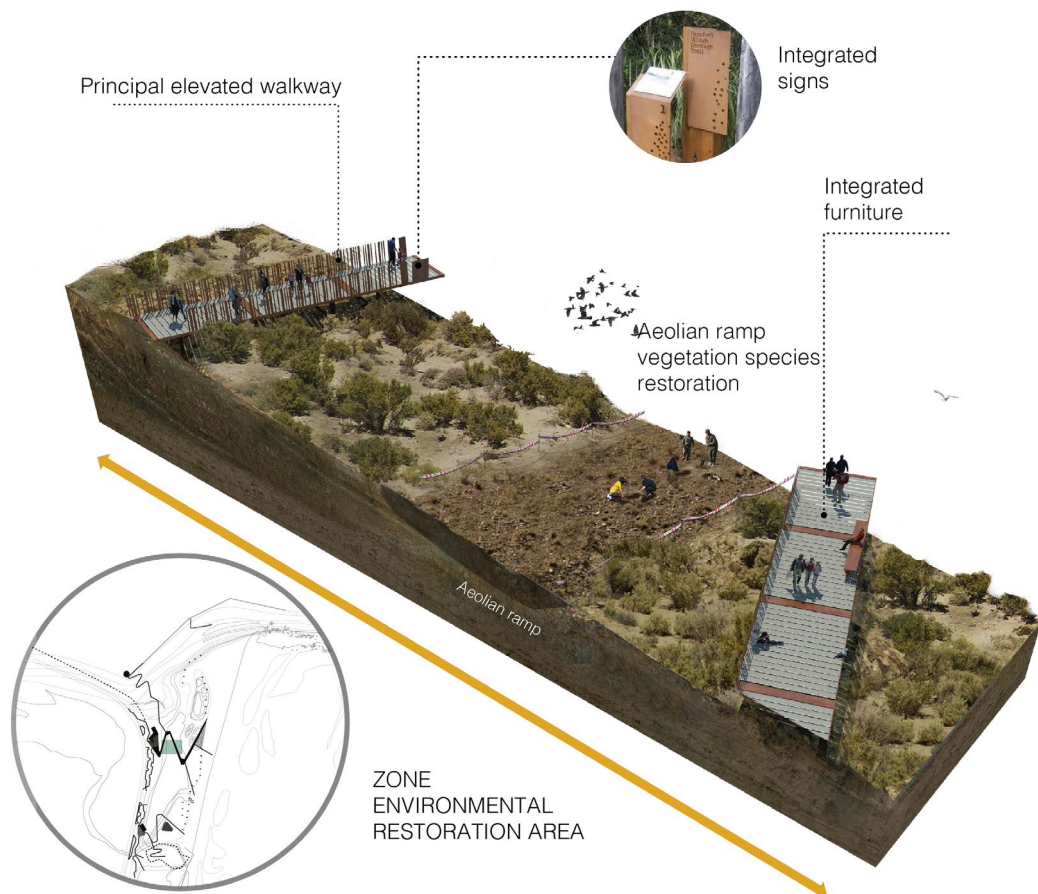


Fig. 6 – Principal elevated walkway detail (restoration area). Source: author's elaboration.

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Fig. 5 – Secondary elevated walkway and shelter equipment detail (buffer area). Source: author's elaboration.

María Elena Arce, Dr. in Biological Sciences; in this case, she brought interesting data concerning biodiversity conservation and public use of the beach. She focused on the lack of environmental education and consciousness of inhabitants regarding the landscape that surrounds them and the inappropriate use of landscape that destroyed flora and fauna. Both interviewees suggested organizing spaces to simplify the access, to take security measures- especially against tide changes and to add amenities like bathrooms and recreational spaces. They both

highlighted the importance of natural heritage and landscape conservation. This would prevent that the public use of the space jeopardizes the pre-existing natural system.

Surveys were carried out in order to recognize the type of users that visit the beach, their opinions regarding its conditions and their desires for the future. The overall analysis of the study area can be summed up into these results: on the one hand, the population growth and the advance of private urbanizations hamper the free access to the beach, on the

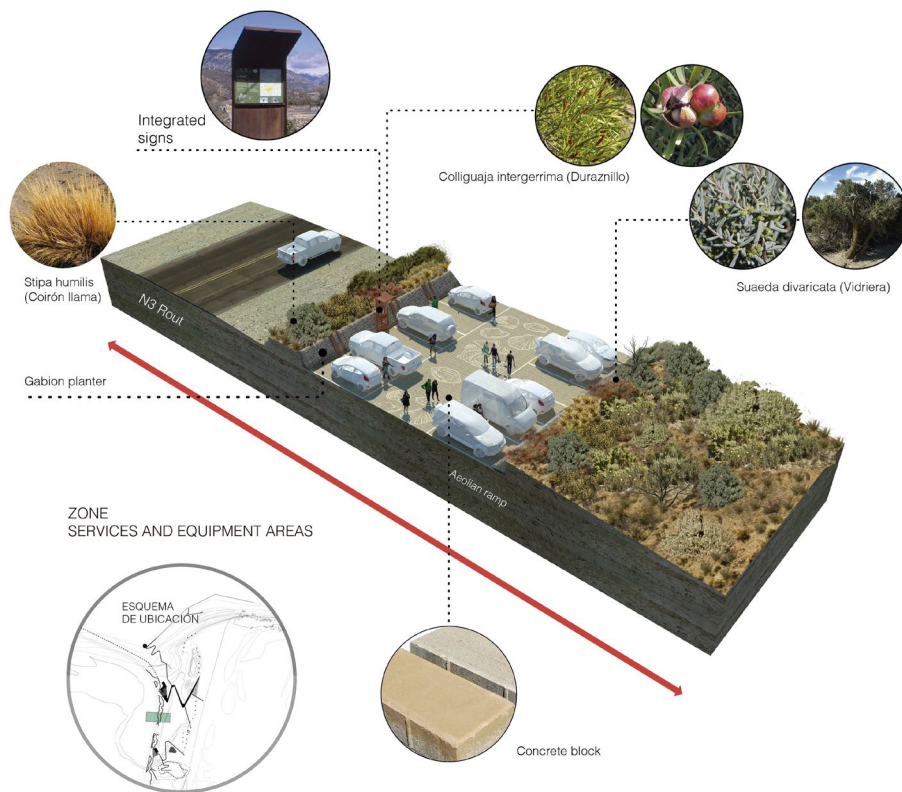


Fig. 7 – Vehicle parking with detail of gabion planter (services and equipment area). Source: author's elaboration.

other hand, the current lack of services and equipment together with the frequency and types of usage have an impact on the coastal natural dynamics such as transformations in marine environment values and its environmental and landscape qualities. These results of the study reveal that strategies to protect some beach areas should be developed in order to reduce the anthropogenic transformation degree and strengthen the identity of the coastal landscape, generating spaces for public use and environmental knowledge.

The Design Proposal

All situations detected in the study area have shown the need for a proposal that improves current services preventing disturbing on the landscape. This project promotes users' awareness of the coastal ecosystem values and helps to consolidate a coastal landscape image where the plateau, the sandy beach, the wind and the sea are protagonists. The proposal aims at preserving the natural features of the place by applying a project that respects natural dynamics. The following guidelines shall be taken into account in the landscape proposal:

- **Vegetation:** The proposal ensures the use of natural vegetation taking care of the distribution of native species according to the different landscape units. In places that are deteriorated by

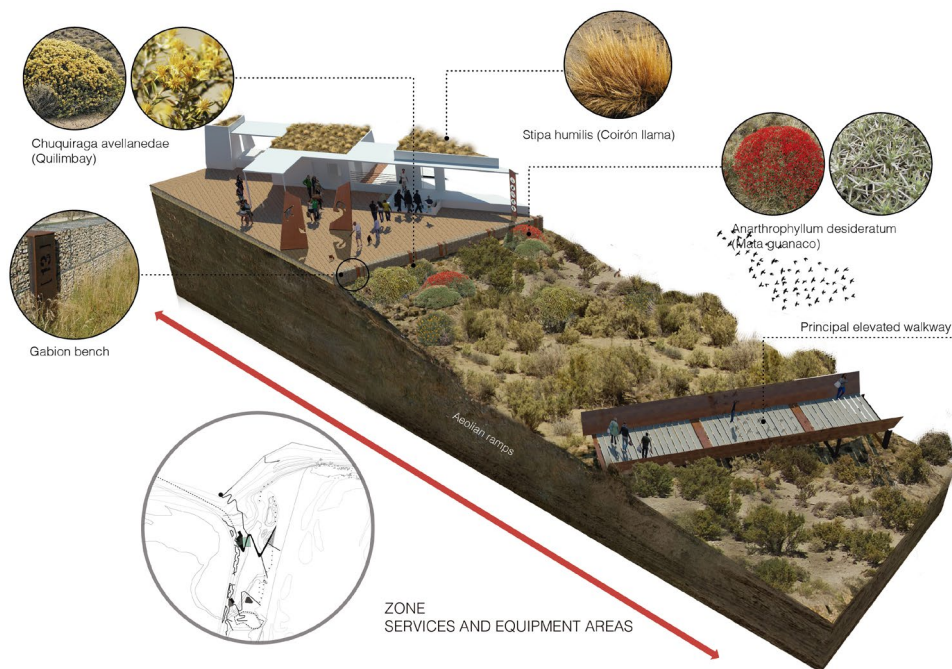


Fig. 8 – Interpretation center and principal elevated walkway detail (services and equipment area). Source: author's elaboration.

anthropogenic transformations, new vegetation will be planted according to its natural distribution and characteristics such as texture, smell, and color. In transit spaces and walkways, a minor number of species will be planted.

- **Land uses:** Current existing land uses are reorganized, such as access areas, circulation areas, and resting areas. At the same time, new land uses are proposed and incorporated according to users' demands and the potentialities of the place.
- **Roads, walkways, and floors:** the proposal outlines new roads. Their current design allows the access of some vehicles, but emergency vehicles, namely ambulances, police, and fire vehicles, are unable to enter. The footpaths are designed for the accessibility of people with reduced mobility.
- **Infrastructure:** In order to enjoy the sea, the proposal implements in transit sector baskets, banks, and lights.

- **Materials:** Due to the natural conditions of the place, the intensity of the wind and water erosion, materials were selected according to their abrasion resistance, to their adaptive conditions and easy replacement.

The proposal focuses on maximizing the detected potentialities in *four main sectors*. Thanks to the impact value map, sectors were detected where human intervention should be controlled and where the conservation option should be a priority.

- **Services and equipment area:** here the project envisages equipment for intensive use like bus stops, interpretation centers, bathrooms and playgrounds, roads and parking areas. The planted vegetation is mostly shrubs in high flowerbeds that helps to delimit the access and provides shelter areas against the wind.
- **Environment restoration area:** this area is the most affected by the anthropic use and it has the op-

portunity to be restored. Therefore, native vegetation could be planted here. The environmental restoration focuses its efforts on the restoration of species composition and communities.

- *Educational nature area*: this area is characterized by a fragile coastal landscape. That is why it is delimited as an educational nature area which offer special opportunities for environmental education and nature interpretation. Here there are self-guided walkways with a lookout point and informative signs.
- *Buffer area*: this area is adjacent to the educational nature area. There can be found elevated walkways (principal and secondary), shelter equipment, lifeguards and informative signs.

As it is established in the general guidelines, the proposal design equipment occupies a relatively small area in proportion to the total beach area. The project proposes a combination of elevated walkways that facilitate pedestrian circulation and the arrival to the beach. Intensive land use areas have informative design and furniture integrated into the architecture. The structural elements and the elevated walkways are made of corten steel, concrete, and gabions.

Conclusions

The expansion of the city towards the sea and the current territorial policies do not guarantee free access to the Patagonian coast. Disturbs on natural environment and biodiversity have a significant impact on the landscape. This work responds to the attempt to revert this tendency.

Human beings set variable degrees of 'cultural appropriation' and attitudes towards their natural and built environments. Landscape projects based on place phenomenological perception can contribute to influence people 'cultural appropriation' processes. The key strategy here suggested is preserving landscape at risks by creating potential usable areas where people can interact with nature and reconsider its value. In *Los Limites Beach* it will be possible to protect the coastal landscape and allowing free access and public use. People will have the possibility to reach the coast and the sea, but also to take care of the landscape. This project therefore aims at strengthening landscape identity and protecting its natural components through promoting public uses. It allows enjoying the coast as a comfortable public space, creating areas where landscape knowledge and care are promoted.

"The seashore is a scenic, cultural and ecological unit that makes sense in itself, beyond its administrative boundaries. It is an essential part of our col-

lective heritage, an important value to be preserved. If we do not so, we will feel as 'uncompleted people'; we will look at the past with nostalgia and we will be ashamed of not being able to defend the future, not even the present" (Rivera and Rivera, 2007:57).

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