

# Registry of Salmon Farming Concessions Located inside Protected Areas

**SALVEMOS LA  
PATAGONIA**

Por la salida de las salmoneras de las  
Áreas Protegidas. **Sin Relocalización.**

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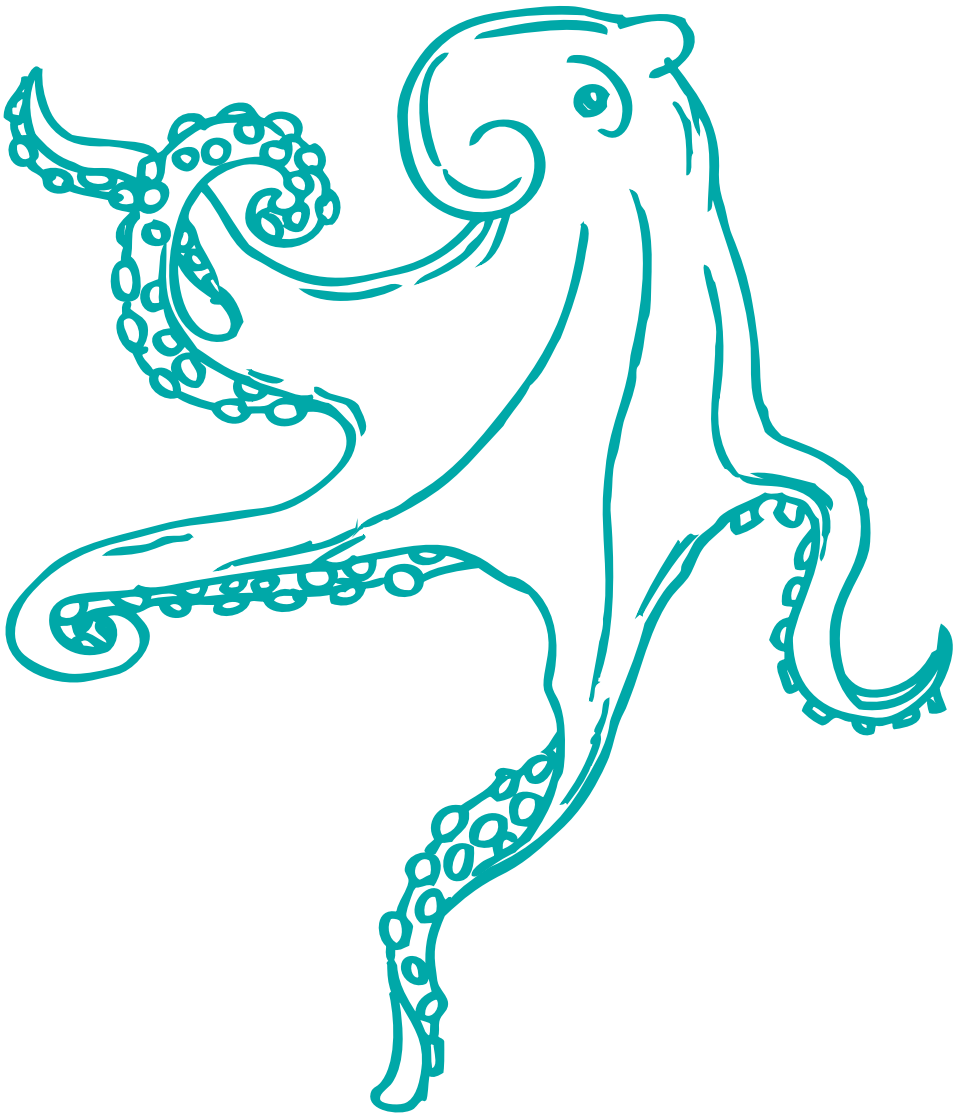
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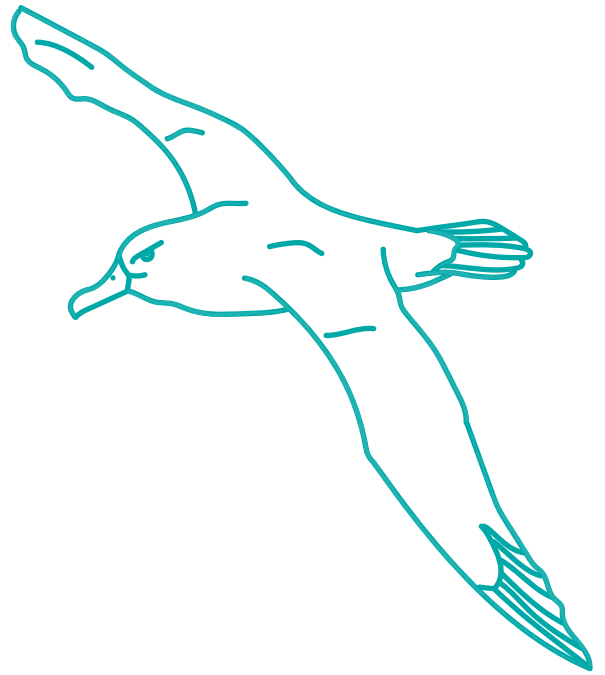


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## **1. Introduction**

The salmon farming industry in Chile has experienced significant growth, from producing just over 28,000 tons in 1990 to more than one million tons in 2023, representing a growth of 3,652% in these years. However, the industry has faced both challenges and controversies. Indeed, as it involves the farming of an exotic, carnivorous species through an intensive production system, it requires the artificial provision of food, therapeutic treatments, the use of disinfectants, infrastructure to create floating cages, and other factors which generate various environmental impacts.

The facilities necessary for salmon farming represent the main asset of companies in this sector, largely concentrated in the regions of Los Lagos, Aysen, and Magallanes. This southernmost part of the country, known as Patagonia, is home to a diversity of marine and terrestrial ecosystems that are primarily protected under different categories, such as National Parks (NP) and National Reserves (NR).

These protected areas play a crucial role in conserving biodiversity and maintaining essential ecosystem services at both national and global levels. However, nearly 30% of the salmon farming concessions which have been granted are located inside these important Chilean reserves, representing a threat to the very objective for which they were created—conservation.

Considering the role of Protected Areas (PA) and the environmental impact generated by salmon farming within these spaces, the objective of this research is to identify the distribution and characteristics of aquaculture concessions for salmon farming within PA in the aforementioned regions, particularly in National Parks and National Reserves in the National System of Protected Wildlife Areas of the State (SNASPE), as well as Marine Parks and Reserves. This report has four sections: the presentation of research objectives, a description of the methodology used to collect and analyze the data, the presentation of results, detailing the distribution of the concessions and their characteristics, and finally, the most relevant findings are discussed, and conclusions and recommendations are proposed based on the research results.

This registry aims to provide a detailed overview of the current situation of aquaculture concessions for salmon farming within Protected Areas of SNASPE and Marine Parks and Reserves in Chile. This information may serve as a starting point for future research on the impact of this industrial activity on protected ecosystems in southern Chile's region of Patagonia.



Photograph: Daniel Casado



## 2. Objectives

### General Objective

- To analyze the distribution and characteristics of aquaculture concessions for salmon farming within Protected Areas (PA) in the categories of National Park, Marine Park, National Reserve, and Marine Reserve in the regions of Los Lagos, Aysen, and Magallanes, Chile.

### Specific Objectives

- To identify the Protected Areas w salmon farming concessions have been granted.
- To establish the ownership (holders) and characteristics of the concessions granted for salmon farming in Protected Areas.
- To analyze the temporal evolution of the granted concessions, considering the creation date of the Protected Areas and the legislation applicable to the duration of the concessions.

### 3. Data

This research utilized two primary sources of information, outlined as follows:

1. National Assets Registry System: Spatial data of the Protected Areas (PA) in the National System of Protected Wildlife Areas of the State (SNASPE). This data was downloaded in shapefile format, updated as of February, 2024. This data includes the categories of National Parks and National Reserves.
2. Undersecretariat of Fisheries and Aquaculture (Subpesca) Map Viewer<sup>1</sup>: Spatial data of aquaculture concessions for salmon farming and spatial data of Marine Protected Areas (MPA). The databases were downloaded in shapefile format on May 23, 2024, using the layer “Aquaculture Concessions by Application Status” and filtered by the species group “salmon.” For MPA, the filter was applied to Marine Parks and Marine Reserves.

The complete list of Protected Areas considered according to the general objective of this research is shown in Table 1. A total of 35 units of the SNASPE were reviewed. Regarding strictly marine categories, a total of 5 units were considered.

It is important to note that, for an initial assessment of the Protected Areas, particularly those within SNASPE that hold aquaculture concessions, reference was made to the reports prepared by the Austral Patagonia Program (ProAP) at the Austral University of Chile (UACH). These reports provide information on the marine coverage of Protected Wild Areas in Chilean Patagonia (Farías et al., 2020) and on the aquaculture concessions located within the marine portion of these same Protected Wildlife Areas (Farías et al., 2022).

<sup>1</sup> Available at: <http://mapas.subpesca.cl/ideviewer/>.

**Table 1.** Details of Protected Areas in the regions of Los Lagos, Aysen, and Magallanes

SYSTEM	CATEGORY	UNITS TOTAL
SNASPE	National Park	21
SNASPE	National Reserve	14
AMP	Marine Park	3
AMP	Marine Reserve	2
<b>Total</b>		<b>40</b>

Source: Compiled using data from the Subpesca Map Viewer (2024) and the National Assets Registry (MBN, 2024).

In total, there are 1,380 aquaculture concessions granted for salmon farming in the regions of Los Lagos, Aysen, and Magallanes, covering a total of 15,324.81 hectares (ha).

Additionally, there are 160 concessions in the process of approval, covering 2,228.6 ha, of which 25 (462.39 ha) have an Approved Technical Project<sup>2</sup>. The list of all aquaculture concessions for salmon farming considered in the research is shown in Table 2.

**Table 2.** Total number of concessions granted and pending by region in Los Lagos, Aysen, and Magallanes.

REGION	GRANTED		IN PROCESS	
	NUMBER	SURFACE (HECTAREAS)	NUMBER	SURFACE (HECTAREAS)
Los Lagos	532	7,363.51	28	893.77
Aysén	716	5,843.43	49	337.35
Magallanes	132	2,117.8	83	997.48
<b>Total</b>	<b>1380</b>	<b>15,324.81</b>	<b>160</b>	<b>2,228.60</b>

Source: Prepared by the author using data from the Subpesca Map Viewer (2024), accessed on May 23, 2024.

<sup>2</sup> The Regulation on Concessions and Authorizations for Aquaculture (Decree No. 290), in its Article No. 20, establishes that the Technical Project must be approved by a resolution from the Undersecretariat of Fisheries and Aquaculture (Subpesca), and must include the number and dimensions of the structures to be installed and a production program.

## 4. Methodology

The methodology to achieve the research objective followed the steps outlined below:

1. Establish the geographical area: As mentioned previously, the study focuses on the regions of Los Lagos, Aysen, and Magallanes, as the granting of aquaculture concessions for salmon farming is concentrated in these three regions.
2. Identify the Protected Areas: After establishing the regions of interest, the Protected Areas (PA) in these regions were identified, and those that protect marine surface areas, either partially or fully, were selected for analysis. This includes terrestrial areas that also protect a marine portion (SNASPE) and strictly marine areas (MPA). Thereview incorporated the PA categories established in the general objective of this research, namely: National Park, Marine Park, National Reserve, and Marine Reserve. For the SNASPE units, official information of the marine portion was used.
3. Data pairing: With the above information, the concessions located partially or fully inside a PA were identified.
4. Data processing: After matching the data, the information was processed according to the specific objectives outlined. The concessions were identified based on their management category (park or reserve) and ownership (holder). Subsequently, the concessions were detailed according to their duration.





Photograph: José Tomás Yakasovic



## 5. Results

By matching the data of the Protected Areas (PA) and aquaculture concessions for salmon farming, the following results were obtained.

The PA categories identified with the presence of aquaculture concessions for salmon farming are National Park (NP) and National Reserve (NR); no concessions for salmon farming were found in the other categories. In the categories with granted and pending concessions, there are six PA units, as detailed in Table 3. Together, these units cover a total protected area of over 10.7 million hectares (ha), of which approximately 45% corresponds to marine areas, considering units with official marine area data (see Table 3).

**Table 3.** Details of Protected Areas that hold salmon farming concessions

PA NAME	REGION	SURFACE TOTAL (HA)	MARINE SURFACE (HA)	CREATION DATE (PROMULGATION)
Alberto de Agostini National Park	Magallanes	1,460,000.00	1,117,521.04	22-01-1965
Bernardo O'Higgins National Park	Aysén-Magallanes	3,525,901.20	753,076.86	22-07-1969
Isla Magdalena National Park	Aysén	249,712.06	official information n/a	25-05-1983
Laguna San Rafael National Park	Aysén	1,742,000.00	346,570.52	17-06-1959
Kawésqar National Reserve	Magallanes	2,628,429.20	2,628,429.00	26-01-2018
Las Guaitecas National Reserve	Aysén	1,097,975.00	official information n/a	28-10-1938
<b>Total</b>		<b>10,704,017.46</b>	<b>4,845,597.42</b>	

Source: Prepared by the author based on data from SIMBIO (MMA, 2024) and the National Assets Registry (MBN, 2024).

Note: The marine area of the parks and reserves corresponds to the information reported by the National Assets Registry in shapefile format (MBN, 2024).

The identified concessions are located in the marine portion of the SNASPE. Specifically, a total of 408 granted concessions were identified inside the different PA categories, covering 3,703.09 ha. Of these, 399 concessions (3,514.21 ha) are fully within the PA, while 9 (188.88 ha) have only part of their area within the PA. This suggests that approximately 30% of the total number of granted concessions (1,380) are partially or fully within a PA. Additionally, 68 concessions (700.03 ha) were identified as pending (43% of the total pending concessions). Of these, 60 concessions (679.08 ha) and 8 concessions (20.95 ha) are fully and partially within the PAs, respectively (see Table 4).

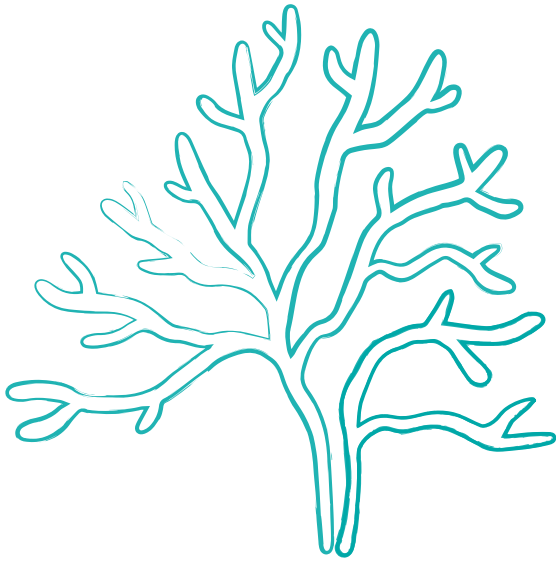
**Table 4.** Protected Areas with granted and pending salmon farming concessions

PA NAME	REGION	FULLY INSIDE				PARTIALLY INSIDE			
		GRANTED		IN PROCESS		GRANTED		IN PROCESS	
		N°	SURF. (HA)	N°	SURF. (HA)	N°	SURF. (HA)	N°	SURF. (HA)
Alberto de Agostini National Park	Magallanes	19	97,91	-	-	-	-	-	-
Isla Magdalena National Park	Aysén	4	38,48	-	-	4	26.35*	3	7.13
Laguna San Rafael National Park	Aysén	2	3	-	-	-	-	-	-
Bernardo O'Higgins National Park	Aysén-Magallanes	-	-	1	19.99	-	-	-	-
Kawésqar National Reserve	Magallanes	62	1,215.69	49	593.00	4	155.76*	5	13.82
Las Guaitecas National Reserve	Aysén	312	2,159.13	10	66.09	1	6.77*	-	-
<b>Total</b>		<b>399</b>	<b>3,514.21</b>	<b>60</b>	<b>679.08</b>	<b>9</b>	<b>188.88*</b>	<b>8</b>	<b>20.95</b>

Source: Prepared by the author based on information from the Map Viewer (Subpesca, 2024) and the National Assets Registry (MBN, 2024).

\* The concessions with a portion in the Protected Area include the total area of the concession, not just the portion located within the Protected Area.

Since the main objective of this research is to analyze the aquaculture concessions available for the farming and harvesting of salmonids within PAs, the focus hereafter will be on the concessions that have been granted (for a complete list, see Appendix 1).



## ***5.1 Granted concessions inside National Parks***

A detailed analysis by management category shows that there are 3 National Parks (NP) with a total of 29 concessions for salmon farming (see Table 5). Of these, 25 concessions (139.39 ha) are fully within these parks, while the remaining 4 concessions, covering an additional 26.35 ha, are partially located within the parks.

The company Nova Austral S.A., with Norwegian and U.S. capital, stands out with 19 concessions within the Alberto de Agostini National Park representing 67% of the total 28 concessions held by this company in the Magallanes Region. Nova Austral is the company with the highest number of concessions within the National Parks category, both in terms of number and area, and is the only one with productive activity inside Alberto de Agostini National Park. Another relevant holder in terms of the number of concessions within parks is AquaChile and its subsidiaries, including AquaChile SpA, Empresas AquaChile, and Exportadora Los Fiordos Ltda. This conglomerate holds a total of 4 concessions, equivalent to 38.48 ha, and is the only one operating entirely within the Isla Magdalena National Park, while another 4 companies are partially operating within this PA. It is worth noting that AquaChile is controlled by the Chilean capital holding company Agrosuper. Finally, the Canadian company Cooke Aquaculture Chile operates within Laguna San Rafael National Park, with two concessions fully located within the PA.



**Table 5.** Granted concessions by holder inside National Parks

PA NAME	HOLDER	FULLY INSIDE		PARTIALLY INSIDE	
		NUMBER	SURFACE (HA)	NUMBER	SURFACE (HA)
Alberto de Agostini National Park	Nova Austral S.A	19	97.91	-	-
Isla Magdalena National Park	AquaChile SpA	2	25.73	-	-
	Empresas AquaChile SpA	1	8.75	-	-
	Exportadora Los Fjordos Ltda.	1	4	-	-
	Australis Mar S.A.	-	-	1	10.81
	Inversiones de desarrollo Inmobiliario S.A.	-	-	1	5.14
	Salmonconcesiones XI Región S.A.	-	-	1	5.9
	Salmones Blumar S.A.	-	-	1	4.5
Laguna San Rafael National Park	Cooke Aquaculture Chile S.A.	2	3	-	-
<b>Total</b>		<b>25</b>	<b>139.39</b>	<b>4</b>	<b>26.35</b>

Source: Prepared by the author based on information from the Subpesca Map Viewer (2024) and the National Assets Registry (MBN, 2024).

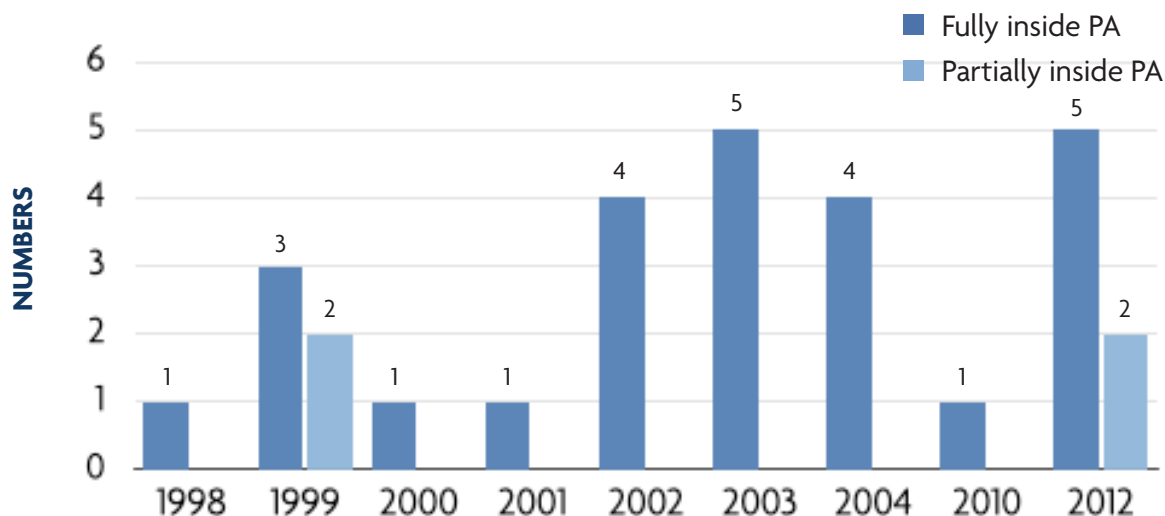
## ***5.2 Evolution of granted concessions in National Parks***

When observing the annual evolution of granted concessions (see Graphs 1 and 2), according to the resolution date from the Undersecretariat for the Armed Forces (SSFFAA), it is evident that concessions began to be granted in 1998, i.e., after the creation of these National Parks (see Table 3). Furthermore, most concessions were granted starting from 2001, with significant years being 2003 and 2012, due to the large number and area granted in comparison to other years.

It is important to note that National Parks, as a strict conservation category (Dudley, 2008), and according to the provisions of the Convention for the Protection of Flora, Fauna, and Natural Scenic Beauty of America (commonly known as the “Washington Convention”), approved by Chile through Decree No. 531 on October 4, 1967, establish that the resources in these categories cannot be exploited for commercial purposes (Fundacion Terram, 2018). Moreover, Article 58 of the recently approved Law No. 21.600<sup>3</sup> prohibits the exploitation of natural resources for commercial purposes in National Parks. It also states that in National Parks formed exclusively by marine ecosystems, no activities shall be allowed, except for those authorized for scientific research, education, or small-scale tourism. Therefore, the operation of these concessions would be in direct contradiction to the current legislation.

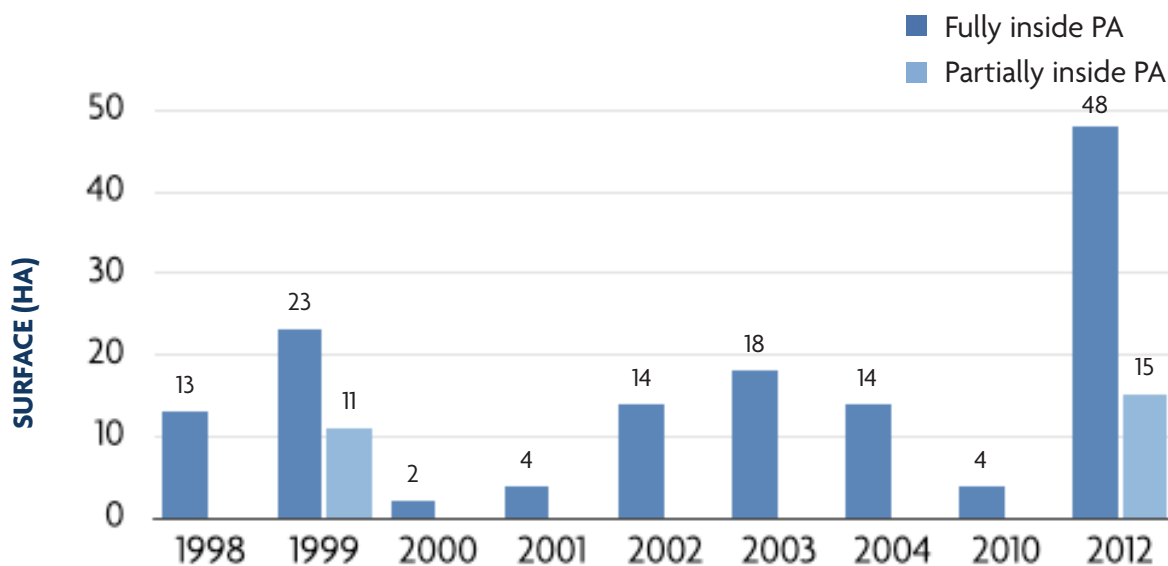
<sup>3</sup> Law that creates the Biodiversity and Protected Areas Service (SBAP) and the National System of Protected Areas (SNAP).

**Graph 1.** Evolution of the number of granted concessions per year inside National Parks <sup>4</sup>



Source: Prepared by the author based on information from the Subpesca Map Viewer (2024) and the National Assets Registry (MBN, 2024).

**Graph 2.** Evolution of the area (ha) of granted concessions per year inside National Parks



Source: Prepared by the author based on information from the Subpesca Map Viewer (2024) and the National Assets Registry (MBN, 2024).

<sup>4</sup> For the cutoff dates of graphs 1 to 4, it should be noted that in 2010, Law No. 20.434 in 2010 became effective, which amended the General Fisheries and Aquaculture Law regarding salmon farming, establishing a moratorium on the granting of concessions. This means the temporary suspension of new applications and the granting of fish farming concessions in Areas Suitable for Aquaculture (AAA), valid as of April 8, 2010, in the regions of Los Lagos, Aysen, and Magallanes.

In Los Lagos, the moratorium, which by law was to last until April 2015, was extended until April 2020, and then the authority declared the AAA as unavailable through Res. Ex. No. 903 in 2020, preventing the granting of salmonid concessions.

In Aysen, the moratorium was supposed to last until April 2012, was extended to April 2015, and later, in April 2020, through Res. Ex. No. 902, the AAA were declared unavailable, which means new concessions cannot be granted.

Magallanes does not have a moratorium; it is governed by Res. Ex. No. 3.264 of 2016, by which Subpesca declared all the AAA in the region unavailable for new salmonid concessions.

### ***5.3 Granted Concessions inside National Reserves***

There are two National Reserves with salmon farming concessions: the Kawésqar National Reserve (Magallanes) and the Las Guaitecas National Reserve (Aysén) (see Table 6). These two PA, individually and collectively, have the highest number of granted concessions for salmon farming, both in terms of units and surface area, compared to the other units analyzed.

Las Guaitecas National Reserve holds a total of 312 concessions, covering 2,159.13 ha, making it the most affected PA in terms of the number of granted concessions operating fully within it, accounting for 78% of the total number of concessions in the entire SNASPE categories. Adding one more concession that is partially within this reserve brings the total to 313 concessions in Las Guaitecas. The Kawésqar National Reserve ranks second, with 16% of the concessions fully within the SNASPE.

Among the holders, the company AquaChile and its subsidiaries are present in both Kawésqar and Las Guaitecas. Considering all the companies that make up this conglomerate, it holds a total of 96 concessions, covering 912.6 ha, which represents 26% of the total surface area of concessions fully within these two Reserves.

Other holders with a significant number of concessions in the National Reserves category are Multi X S.A. and Australis Mar S.A., with 47 and 46 concessions, respectively, in the Las Guaitecas National Reserve. Although these companies have a similar number of concessions, the granted surface areas are significantly lower, as Multi X holds 425.33 ha while Australis Mar has 144.5 ha of granted concessions.

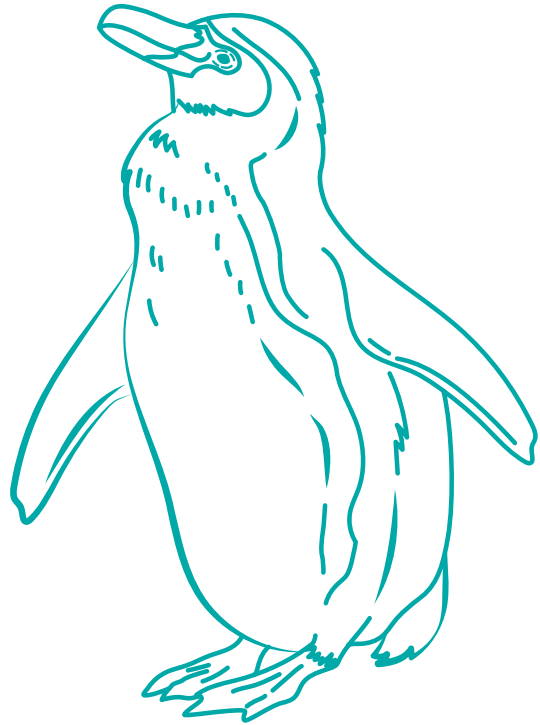
<sup>5</sup> En la RN Kawésqar: AquaChile Magallanes SpA y Empresas AquaChile S.A y en RF Las Guaitecas: AquaChile Maullín, AquaChile SpA, Aqualnovo SpA, Empresas AquaChile S.A, Exportadora Los Fiordos Ltda, Procesadora Cailín SpA y Procesadora Calbuco SpA.



**Table 6.** Granted concessions by holder inside National Reserves

PA NAME	HOLDER	FULLY INSIDE		PARTIALLY INSIDE	
		NUMBER	SURFACE (HA)	NUMBER	SURFACE (HA)
Kawésqar National Reserve	AquaChile Magallanes SpA	16	460.26	3	148.56
	Acuícola Cordillera Ltda.	9	146	-	-
	Salmones Islas del Sur Ltda.	8	76	-	-
	Multiexport Patagonia S.A.	7	69.95	-	-
	Salmones Blumar Magallanes SpA	6	290.98	-	-
	Cermaq Chile S.A.	6	73	1	7.2
	Australis Mar S.A.	4	36	-	-
	Procesadora de Alimentos Asf SpA	2	16.25	-	-
	Trusal S.A.	2	32	-	-
	Salmones Alpen Ltda.	1	10	-	-
	Empresas Aquachile S.A.	1	5.25	-	-
<b>Kawésqar National Reserve Total</b>		<b>62</b>	<b>1,215.69</b>	<b>4</b>	<b>155.76</b>
Las Guaitecas National Reserve	Multi X S.A.	47	425.33	-	-
	Australis Mar S.A.	46	144.5	-	-
	Exportadora Los Fiordos Ltda.	42	238.68	-	-
	Mowi Chile S.A.	35	358.36	-	-
	Cultivos Yadrán S.A.	27	162.16	-	-
	Salmones Blumar S.A.	27	181.43	-	-
	Empresas AquaChile S.A.	22	122.04	-	-
	Sociedad de Inversiones Isla Victoria Ltda	15	57.21	-	-
	Salmones Camanchaca S.A.	12	163.2	-	-
	Fiordo Azul S.A.	6	100.12	-	-
	AquaChile SpA	5	27.41	1	6.77
	Cermaq Chile S.A.	5	30.58	-	-
	Nueva Cermaq Chile S.A.	5	26	-	-
	Aquainnovo SpA	3	17	-	-
	Invermar S.A.	3	31.4	-	-
	Procesadora Cailin SpA	3	24.5	-	-
	Procesadora Calbuco SpA	3	13.5	-	-
	Pacific Seafood S.A.	2	21.07	-	-
	AquaChile Maullin Ltda.	1	3.96	-	-
	Primar S.A.	1	1.48	-	-
Trusal S.A.	1	3.2	-	-	
Yadrán Cisnes S.A.	1	6	-	-	
<b>Las Guaitecas National Reserve Total</b>		<b>312</b>	<b>2,159.13</b>	<b>1</b>	<b>6.77</b>
<b>General Total</b>		<b>374</b>	<b>3,374.82</b>	<b>5</b>	<b>162.53</b>

Source: Prepared by the author based on information from the Subpesca Map Viewer (2024) and the National Assets Registry (MBN, 2024).



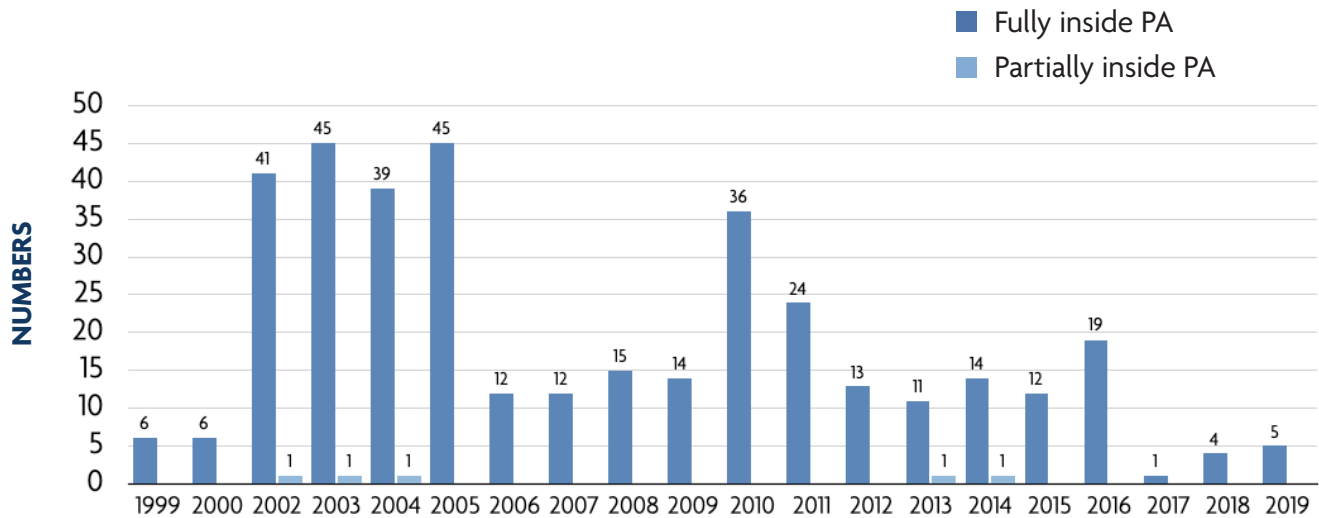
## ***5.4 Evolution of granted concessions inside National Reserves***

The annual evolution of granted concessions in the National Reserves (see Graphs 3 and 4) shows that the largest number of concessions were granted during the period of 2002-2005, with a total of 170 concessions covering an area of 1,212 ha.

It is worth noting that in the Las Guaitecas National Reserve, created in 1938, all concessions were granted after the creation of this PA, while in the Kawésqar National Reserve, the majority of the concessions were granted before the creation of the PA in 2018.

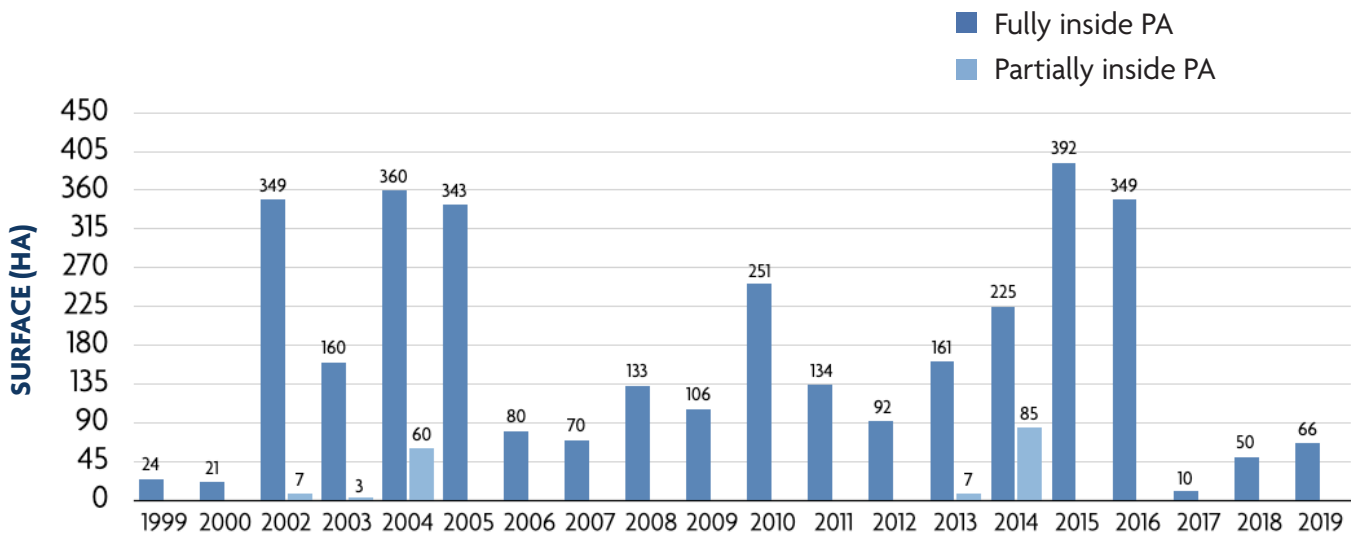
Although National Reserves can also be considered a category of strict protection (Dudley, 2008), the Washington Convention states that they are established for the conservation and use, under official supervision, of natural resources, in which flora and fauna will be given all protection compatible with the purposes for which the reserves were created. More specifically, Law No. 21.600 (Article 60) establishes that sustainable use activities may be developed in these areas, provided they do not threaten the ecosystem services that the area provides.

**Graph 3.** Evolution of the number of granted concessions per year inside National Reserves



Source: Prepared by the author based on information from the Subpesca Map Viewer (2024) and the National Assets Registry (MBN, 2024).

**Graph 4.** Evolution of the area (ha) of granted concessions per year inside National Reserves



Source: Prepared by the author based on information from the Subpesca Map Viewer (2024) and the National Assets Registry (MBN, 2024).

## ***5.5 Duration of granted concessions in Protected Areas***

Although currently concessions granted have a duration of 25 years with the possibility of renewal for an equal term<sup>6</sup>, these time limits only began to apply on April 8, 2010, with the publication of Law No. 20.434<sup>7</sup>. All concessions granted before that date do not expire. Tables 7 and 8 show the concessions granted within different categories of Protected Areas (PA), categorized as indefinite and with a 25-year term, respectively, based on the resolution date provided by the SSFFAA<sup>8</sup>.

In Table 7, we can observe the concessions granted with no expiration date within the PAs. In this category, 67% of the total number of concessions completely within any PA category are concentrated. Notably, the Las Guaitecas National Reserve (RN) holds 240 out of a total of 312 concessions granted indefinitely and completely within this PA, meaning that 77% of the concessions have no expiration date.

<sup>6</sup> Unless half of the environmental reports have been negative or the grounds for cancellation have been verified.

<sup>7</sup> Law amending the General Fisheries and Aquaculture Law (LGPA) in Aquaculture Matters.

<sup>8</sup> With this sole criterion, concessions were grouped into indefinite and 25-year terms. Concessions that have undergone a relocation process, which could affect the duration of the same concession, were not considered for this analysis.

**Table 7.** Concessions granted indefinitely

PA NAME	COMPLETELY INSIDE		PARTIALLY INSIDE	
	NUMBER	SURFACE(HA)	NUMBER	SURFACE (HA)
Alberto de Agostini National Park	14	50.4	-	-
Isla Magdalena National Park	3	34.48	2	11.04
Laguna San Rafael National Park	2	3	-	-
Kawésqar National Reserve	8	31.25	2	63.56
Las Guaitecas National Reserve	240	1,676.36	1	6.77
<b>Total</b>	<b>267</b>	<b>1,795.49</b>	<b>5</b>	<b>81.37</b>

Source: Prepared by the author based on information from the Subpesca Map Viewer (2024) and the National Assets Registry (MBN, 2024).

As for the concessions granted with a 25-year term (with the possibility of renewal), a smaller number of granted concessions are included (see Table 8), representing 33% of those fully within a PA. However, when examining the surface area (ha), this percentage increases, reaching 49% of the total surface area of concessions inside a PA (completely inside).

**Table 8.** Concessions granted for a 25-year period

PA NAME	COMPLETELY INSIDE		PARTIALLY INSIDE	
	NUMBER	SURFACE (HA)	NUMBER	SURFACE (HA)
Alberto de Agostini National Park	5	47.51	-	-
Isla Magdalena National Park	1	4	2	15.31
Kawésqar National Reserve	54	1,184.44	2	92.2
Las Guaitecas National Reserve	72	482.77	-	-
<b>General Total</b>	<b>132</b>	<b>1,718.72</b>	<b>4</b>	<b>107.51</b>

Source: Prepared by the author based on information from the Subpesca Map Viewer (2024) and the National Assets Registry (MBN, 2024).





## 6. Conclusions and Recommendations

The research conducted has provided a detailed overview of the current situation of aquaculture concessions for salmonid farming within Protected Areas (PA) in the regions of Los Lagos, Aysen, and Magallanes.

In summary, the results indicate that of the 1,380 concessions granted in these regions, 408 (30%) are located within Protected Areas, of which 399 are fully within and 9 are partly within these regions.

The categories of PA with granted concessions include 3 National Parks and 2 National Reserves. The highest concentration of concessions is found in the Las Guaitecas National Reserve in the Aysen Region, with 312 concessions fully within and 1 partially within, all of which were granted after the creation of this reserve. The Kawésqar National Reserve follows, with 62 concessions fully within and 4 partially within.

Among the prominent holders, Nova Austral is the only company operating within the Alberto de Agostini National Park (Magallanes), with 19 concessions covering a total of 97.91 hectares, all granted after the creation of this park.

Another significant holder is AquaChile and its subsidiaries, which have the largest number of concessions within the PAs, totaling 100 fully within, covering 951.08 hectares, distributed across three of the five PA units identified in this study (Isla Magdalena National Park, Las Guaitecas National Reserve, and Kawésqar National Reserve).

Regarding the duration of these concessions, it is evident that of the 408 concessions fully or partially within PA, 272 (67%) have no expiration date, and 138 (33%) have a 25-year term, with the possibility of renewal.

The information obtained from this study provides a solid foundation for future management decisions and public policies aimed at ensuring the preservation of protected ecosystems in the various categories identified with the presence of the salmon farming industry.

It is imperative that future research and governmental actions focus on determining the impacts this industry is having on areas that, by definition, contribute to the objectives of natural heritage conservation, which are essential and a fundamental pillar in most of the conservation strategies developed by countries (Dudley, 2008).





Photograph: Eduardo Sorensen



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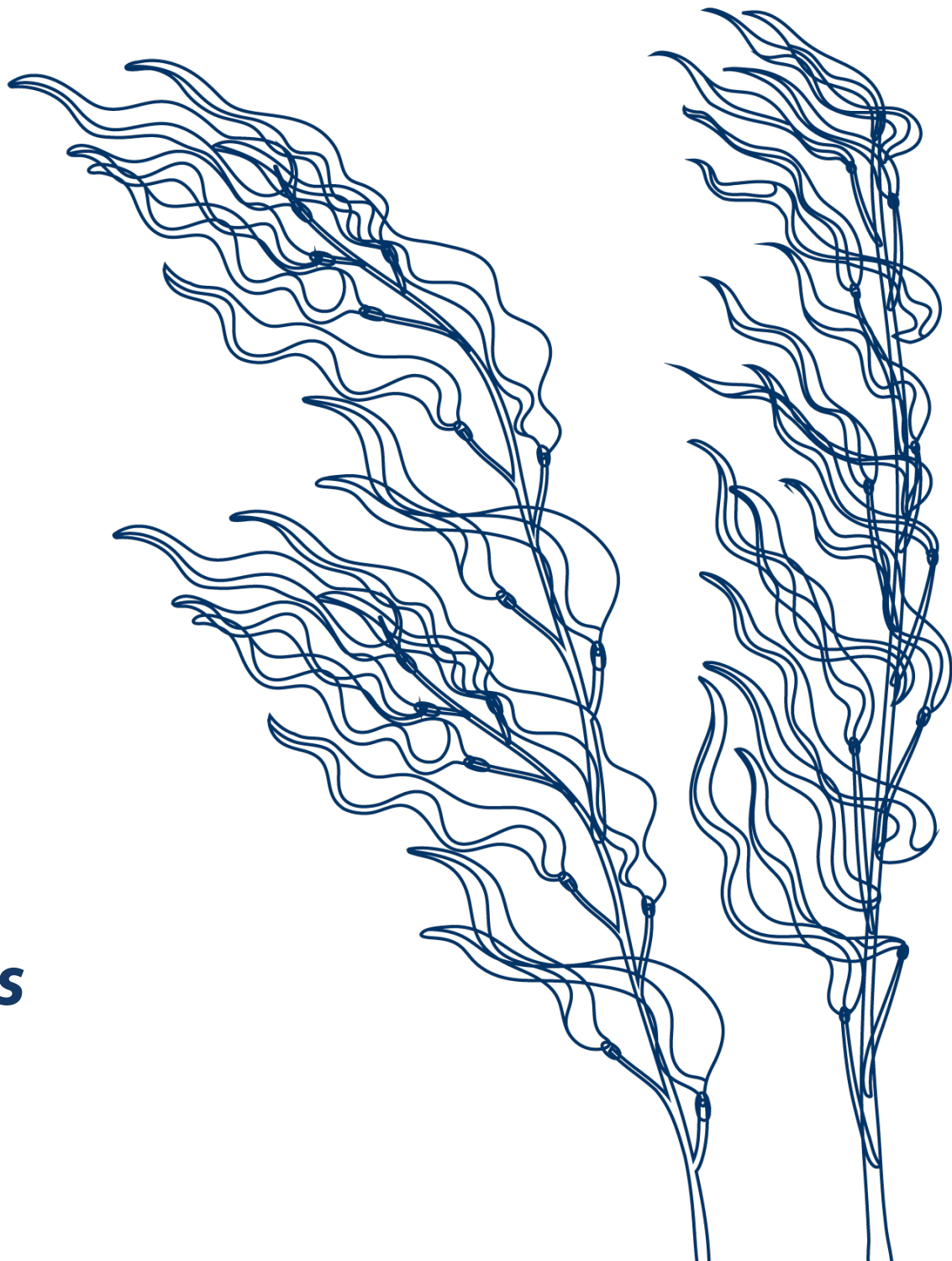
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# ***Annexes***



## Annex 1. List of granted concessions inside Protected Areas by holder

HOLDER	FULLY INSIDE		PARTIALLY INSIDE	
	NUMBER	SURFACE (HA)	NUMBER	SURFACE (HA)
AquaChile Magallanes SpA	16	460.3	3	148.56
Multi X S.A.	47	425.38	0	0
Mowi Chile S.A.	35	358.4	0	0
Salmones Blumar Magallanes SpA	6	291	0	0
Exportadora Los Fiordos Ltda.	43	242.7	0	0
Salmones Blumar S.A.	27	181.4	1	4.5
Australis Mar S.A.	50	180.5	1	10.81
Salmones Camanchaca S.A.	12	163.2	0	0
Cultivos Yadrán S.A.	27	162.2	0	0
Empresas AquaChile S.A.	24	136.08	0	0
Acuícola Cordillera Ltda.	9	146	0	0
Cermaq Chile S.A.	11	103.6	1	7.2
Fiordo Azul S.A.	6	100.1	0	0
Nova Austral S.A.	19	97.9	0	0
Salmones Islas del Sur Ltda.	8	76	0	0
Multiexport Patagonia S.A.	7	70	0	0
Sociedad de Inversiones Isla Victoria Ltda	15	57.2	0	0
AquaChile SpA	7	53.1	1	6.77
Trusal S.A.	3	35.25	0	0
Invermar S.A.	3	31.42	0	0
Nueva Cermaq Chile S.A.	5	26	0	0
Procesadora Cailin SpA	3	24.5	0	0
Pacific Seafood S.A.	2	21.1	0	0
Aquainnovo SpA	3	17	0	0
Procesadora de Alimentos Asf SpA	2	16.3	0	0
Procesadora Calbuco SpA	3	13.5	0	0
Salmones Alpen Ltda.	1	10	0	0
Yadrán Cisnes S.A.	1	6	0	0
AquaChile Maullín Ltda.	1	4	0	0
Cooke Aquaculture Chile S.A.	2	3	0	0
Primar S.A.	1	1.5	0	0
Inversiones de Desarrollo Inmobiliario S.A.	0	0	1	5.14
Salmoconcesiones XI Región S.A.	0	0	1	5,9
<b>Total</b>	<b>399</b>	<b>3,514.21</b>	<b>9</b>	<b>188.88</b>

Source: Prepared by the author based on information from the Subpesca Map Viewer (2024) and the National Assets Registry (MBN, 2024).



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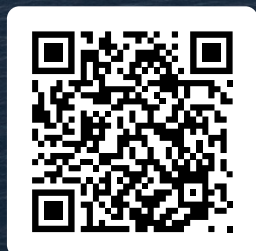
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