

## Contradictions and complementarities between nature conservation and economic development in Chilean Patagonia

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Project 1071096 supported by the Chilean Science and Research National Fund

### Summary

Chilean Patagonia is a Southern Hemisphere, high latitude temperate climate landscape, composed by a complex natural, and mostly pristine system, of ice fields, glaciers, mountains, rivers and streams, lakes, fjords, woodlands and grasslands. 90% of the land is considered like public land since it belongs to the State of the Republic of Chile. 50% of the regional land (near 50.000 Km<sup>2</sup>) is under the legal status of nature conservation protected area (national parks, natural reserves, natural monuments and biodiversity protection priority sites). Most of these areas have remained isolated, due to the lack of connectivity either at the continental and archipelagic zones. As a consequence, many pristine landscapes can still be found everywhere. Until recently, regional strategic plans of development defined this area like a *life support system*, and facilitated the creation of many natural protection areas. However, given the accelerated Chilean economic growth, currently many economic investment projects such as hydropower installations, electricity transmission lines, salmon farms, roads construction, and tourist installations, are trying to be located in the region, threatening conservation purposes. It seems to be necessary to propose regional plans and policies aiming sustainable development, and which can harmonize as much as possible economic, social and environmental goals.

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### Keywords

Regional Sustainable Development, Conservation, Hydropower, Patagonia

### Aims and duration of the Project

This research project, supported by the Chilean National Science and Technology Development Fund, has been prepared in the University of Chile to propose knowledge that can support an alternative Strategic Environmental Assessment for Chilean Patagonia. The idea has been to provide scientific information that can be confronted with the official Environmental Impact Assessment prepared by private national and foreign companies which are increasingly interested in the exploitation of regional natural resources. The project has been developed between 2007 and 2009.

### Study area

The study area (fig.1) is one of the Chilean southernmost regions, corresponding to the Western or Pacific Ocean Patagonia. This area is located in the so called Aysen Region, one of the Chilean Administrative territories, situated between latitudes 44 and 49°S, in the South American Southern Cone. The region is a more than 100.000 Km<sup>2</sup> of temperate rainforest distributed in the Western side, and semiarid steppes located in the Eastern side, which are inhabited by less than 100.000 people. Figure 1 shows the actual and proposed installation of several economic investments in the region: mainly salmon farms in the archipelagic and fjords situated at the northwestern section; urban settlements in the center and eastern parts, and hydropower constructions in the southern area. All the proposed economic installations are inserted, or around, currently nature conservation areas.

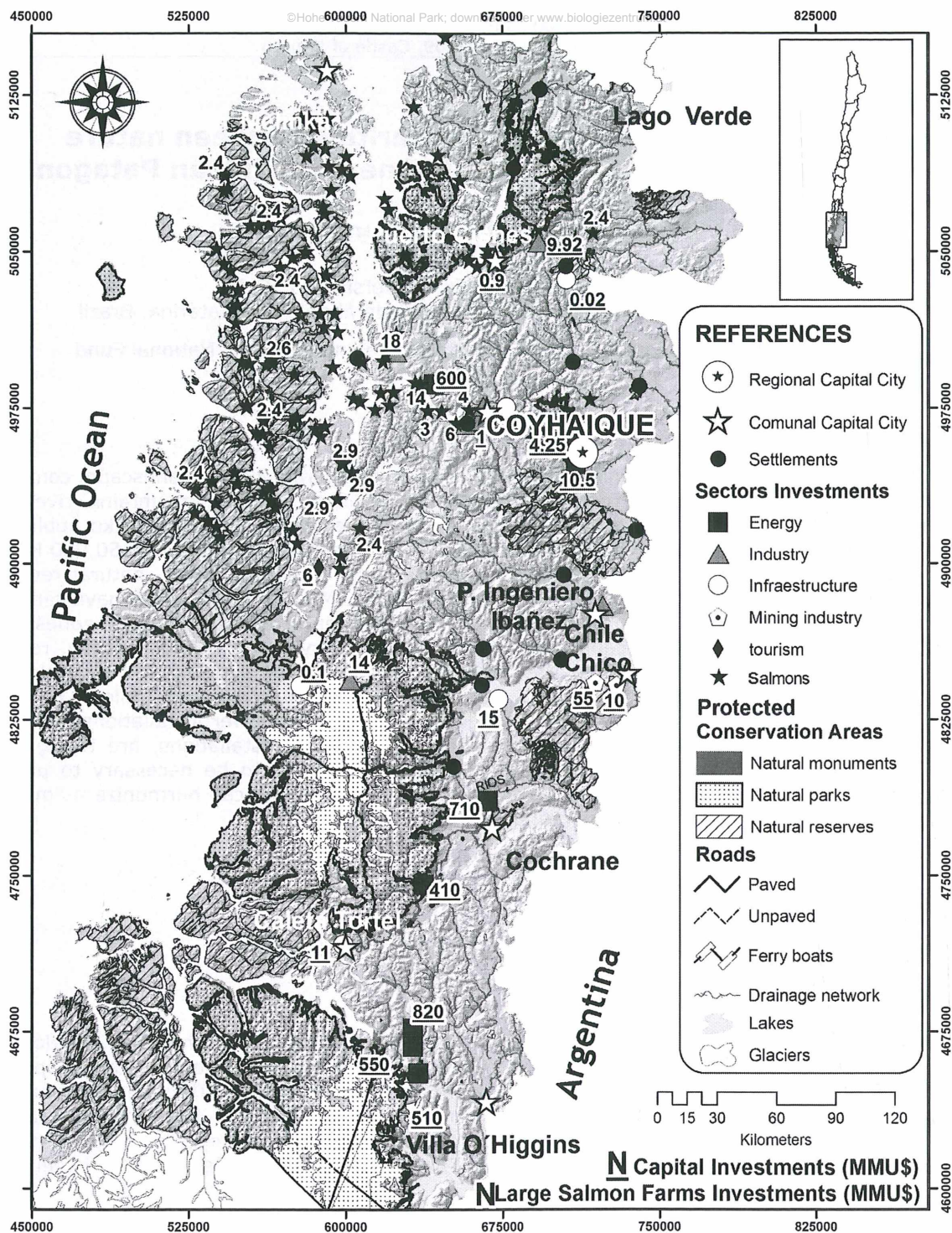


Figure 1: Nature Conservation Protected Areas and Economic Investments in Chilean Patagonia in year 2009

## Methods

An inventory of economic investment projects, based on public information contained in Environmental Impact Assessments and information about economic development at regional scale, has been mapped. Land use and land cover maps have been prepared using remote sensing (satellite images and air photographs), and visiting the area for ground truth and interviews with local actors. Regional and watershed maps containing information about pristine environments and environmental sensible areas have been related with isolation, accessibility, and economic, social and cultural complementarities among human settlements. Surveys of public services capacities to attend nature protection areas and about conflict institutional maps have been drawn.

Aquaculture, mining, touristic, infrastructure, and mainly hydropower installations are planned to be located in, or around natural conservancy areas, in Chilean Patagonia. New roads, urban developments, and decertification of national parks and nature reserves are taking place without a real participation of regional public authorities and local communities. Severe socio political conflicts are emerging everywhere, and a lack of environmental concern could be observed at national and regional scales.

**Discussion**

Much more scientific research, especially about ecological relations and models, environmental assessment of pristine areas, evaluation of natural landscape carrying capacities, local land uses and covers changes, and human settlements structure and functions, are needed to support decision making under an scenario of increasing pressures coming from foreign and national private companies which seems to be only interested on short-term and extractive economic growth.

**Benefits of the research for the management of Past and/or further research**

An increasing gap between available scientific knowledge and the demand of information for current and future decision making could be observed in Chilean Patagonia. An integrated scientific research about physical and socioeconomic environmental systems is necessary to support a Strategic Environmental Assessment process that could contribute to protect nature conservancy areas in front of many economic initiatives

**Are the results of the research related to the stats of protection**

Only in a partial way, since most of the protected areas –especially those located in isolated places and archipelagos-, are still inaccessible, and there is only few information about their environmental situation and the real state of their protection level.

The remarkable scientific achievements of the respective protected areas successfully anchor in the minds of the general public. The general public seems to be more interested in economic growth and availability of jobs, rather than environmental protection of nature conservation areas. One of the reasons is that, conservation areas have been exclusively established for preservation purposes, and are located far away from the places where local people live. As a result, local communities have not participated in their conservation and have been almost completely marginalized of any real benefit. However, most of the local and regional population wish to maintain as much as possible protected areas and to maintain the regional definition that Aysen region (Chilean Patagonia) is a real life support system.

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Jahr/Year: 2009

Band/Volume: [4](#)

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