Parks in Chile: Progress and Problems

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Abstract

This paper concerns the parks in Chile, their evolution, characteristics, progress and problems. The first national park was established in 1926; there are now 32, and with other protected areas they cover about 19% of the country. Progress has been made in expanding the park system, creating marine parks, protecting land near cities, developing a national trail, and increasing tourism in some parks. Problems include a lack of political and public support for parks which results in inadequate funding and staffing, and therefore threats to parks from inappropriate development and activities. Canadian and Chilean parks have very similar objectives and face many similar problems, though the latter are more severe in Chile. While Canada has heritage river legislation, this is lacking and needed in Chile. Research is conducted in parks in both countries, but there is less in Chile, and unfortunately no organization there equivalent to PRFO.

Introduction

This paper concerns the parks of Chile, their evolution, characteristics, progress, and problems. It is based on research on parks in Chile since 1982, especially field research in Chile from January-March, 2003. This comprised visits to a selection of parks in southern and central Chile and discussions with park staff and administrators. A review was also undertaken of academic and agency information, newspaper reports and Internet sites

Chile is a country in the southern cone of South America, extending 4,300 kms. from the tropical Atacama Desert south to temperate Tierra del Fuego, but never more than 180 kms. wide, between the Andes and the Pacific Ocean (Samagalski, 1987). The population in 2002 was about 15 million, growing at 1.3% per annum, with about 5 million in the capital, Greater Santiago. A considerable proportion of the country, especially in the Andes and the south, is undeveloped, inaccessible and wilderness like. A few areas are highly developed, environmentally degraded and polluted. Mineral resources, agriculture in the Central Valley, forestry in the south and marine resources have been mainstays of the export-oriented economy, which in the 1990s was booming. Efforts to protect the environment go back over 100 years, but, as many people acknowledge, much remains to be done to ensure environmentally sustainable development. The establishment and better management of protected areas, as well as improved watershed management, are crucial elements in this endeavour.

Aims

This paper has three aims: firstly to describe the evolution of national parks in Chile and summarise the characteristics of the system of parks today; secondly, to identify recent progress and some of the problems with these parks; and thirdly, to connect the Chilean park experience to Canada and the watershed management theme of the conference.

The Evolution of National Parks in Chile

The first national park in Chile was established in 1926. It is named after an explorer, Vincente Perez Rosales and is located between Puerto Varas, a resort town in the southern lake region, and the border with Argentina (it lies adjacent to Nahuel Huapi National Park in Argentina, which was the first established in South America in 1903). The park comprises 251,000 ha including Volcan Osorno, Cerro Tronador (3,460 m) and Lago Todos los Santos. It has rainforest including the rare conifer alerce (*Fitzroya cupressoides*), 33 mammals, 117 birds, and fish - both native and introduced trout.

In the 1930s, Professor Werner Gromsch proposed the creation of a natural reserve for tourism, "The South National Park," where in 1959 and 1961 what is now called Torres del Paine National Park was established (Garay and Guineo, 1990: 16). In 1935, Rapa Nui (Easter Island) National Park was established to preserve both the archeological and natural features of the island. By 1950, 10 National Parks had been established. Over two thirds of the National Parks have been created since 1957, with six being created in 1967 alone (See Table 1).

Table 1. *The national parks of Chile and the dates of their establishment.*

YEAR	PARK	YEAR	PARK
1926	Perez Vincente Rosales	1967	Isla Magdalena
1935	Juan Fernandez	1967	Volcan Isluga
1935	Rapa Nui	1967	La Campana
1935	Tolhuaca	1967	Huerquehue
1939	Nahuelbuta	1969	Bernado
1940	Villarica	1970	Lauca
1941	Frey Jorge	1972	Las Palmas
1941	Puyehue	1982	Alerce
1945	Cabo de Hornos	1982	Chiloe
1950	Conguillio	1983	Queulat
1958	Laguna de Laja	1985	Pan de Azcar
1959	San Rafael	1988	Hornopirin
1965	Alberto	1994	Llanos
1967	Rio Simpson	1994	Neviado
1967	Isla Goambalin	1995	Llullaillo

The Corporacion Nacional Forestal (CONAF) was created in 1970 and became responsible for protected areas in the country. Aid in the development and planning of national parks was afforded by the U.N. Food and Agriculture Organisation (FAO) in the 1970s. The first management plans were prepared for parks such as Fray Jorge (CONAF, 1974), Torres del Paine (CONAF, 1975) and Juan Fernandez (CONAF, 1976).

The Characteristics of the Parks System

The Corporacion Nacional Forestal (CONAF), or National Forestry Corporation, is the main agency responsible for protected areas in Chile. It is part of the Ministry of Agriculture and has the following mission: *"to guarantee society the sustainable use of the forest ecosystems and an efficient administration of the National System of Protected Wildlife Areas of the State, with the objective of contributing to the improvement of the quality of life of current and future generations."* (CONAF, 2003) It has four objectives:

1. to contribute to the increase and sustainable use of the forest resources;
2. to conserve natural ecosystems representative of the biological diversity of Chile;
3. to contribute first and foremost to the improvement of the quality of life of the rural population by means of forest actions; and,
4. to protect the forest ecosystems from the actions of harmful agents. (CONAF, 2003)

The second objective is to be achieved by the Sistema Nacional de Areas Silvestres Protegidas, or National Protected Areas System. It comprises three main categories of protected area: parques nacionales (national parks); monumentos naturales (natural monuments); and, reservas nacionales (national reserves). The government also permits the establishment of reservas naturales privadas (private nature reserves). A national park is defined as *"a generally extensive area where there exists either unique or biologically representative environments not significantly affected by human intervention and capable of self-sustainability, whose flora and fauna or geological formations are of special educational, scientific or recreational interest" (CONAF, 2003). A natural monument is defined as a smaller area "characterized by the presence of native flora and fauna, or the existence of geologically relevant sites of scenic, cultural or scientific interest" (CONAF, 2003). A national reserve is defined as an area "whose natural resources require special attention because of their susceptibility to degradation or importance to the welfare of nearby communities."* (CONAF, 2003)

There are now 32 national parks, 47 national reserves, and 13 natural monuments, as well as some private nature reserves. Together they comprise over 14 million ha or 19% of Chile. The system is said to *"include a great variety of biological, physical, and cultural resources."* (CONAF, 2003)

Probably the most internationally renowned of Chile's national parks is 181,414 ha Torres del Paine, an area of spectacular Andean peaks, glaciers and lakes near Punta Arenas, in the far south of the country. Easter Island is also highly renowned though primarily as an

archeological site, rather than as a 7,130 ha national park. The 9,571 ha national park on the Juan Fernandez Islands is well known amongst scientists as a "botanical Galapagos." Laguna San Rafael Park, near Coyhaique, famous for having a glacier that flows into the sea that can be observed from cruise boats is also an international attraction. The largest national park, covering 3,525,901 ha is Parque Nacional Bernado O'Higgins, in Regions 11 and 12 in the far south of Chile. It is a wilderness of mountains, glaciers, coast and islands, presently only accessed by a four-hour boat trip, and having no facilities. Examples of national reserves include: Reserva Nacional Las Chinchillas, a 4 229 ha area near Illapel that serves to protect the Chinchilla rodent that was nearly exterminated, and the 73,896 ha Reserva Nacional Los Flamencos, near the village of San Pedro de Atacama that preserves habitat for these birds and other species. Examples of natural monuments include: Monumento Natural La Portada, a 31 ha site near Antofagasta, which is an impressive sea stack with a natural arch, and the 97 ha Monumento Natural Los Pinguinos, a penguin colony on an island in the Strait of Magellan.

Recent Progress with Parks in Chile

Chile has always looked to the sea and depended considerably on its resources. So, as long ago as 1975, the need to designate marine parks in Chile was recognized (Castilla, 1975). However, only in 2003 were the first three marine parks in the country designated. They are: Caldera in Region 3, Bahia Mansa in Region 10, and Isla Carlos 3 in Region 12.

The continuing and problematic expansion of cities, especially Santiago, is increasing concern for environmental protection, and the provision of more outdoor recreation activities near them. Recently, the World Bank, recognizing the significance of the endangered "Mediterranean" ecosystem around Santiago has provided funds to prepare a conservation management plan for the precordillera of Santiago (Laborde, 2003). Trails to increase recreational opportunities are also being developed in the area.

There have been some unusual and controversial private initiatives to protect relatively natural areas in southern Chile. A rich Californian, Douglas Tompkins, founder of Esprit clothing, acquired 360,000 ha on Fiordo Renihue in continental Chiloe in order to protect the endangered temperate rain forest. To facilitate this "Proyecto Pumalin" a trust fund was set up with a Chilean Board of Directors. Environmentalists supported the initiative, but others opposed it fearing loss of logging potential, sovereignty, or because of a traditional dislike of large land owners (Gandara, 2000). The main objective is to protect the temperate rainforest, and associated species such as puma. However, some facilities have been developed, including trails, campgrounds, cabins, a restaurant and visitor centers. So, the park also attracts some tourists and generates jobs for local people, as well as serving as something of a model of how parks and ecotourism can be operated. Recently, Oscar Santelices, the chief of Sernatur, the government's tourism promotion agency, stated that *"the park is just the beginning of what could be a world-class reserve thanks to the considerable funds invested. In all honesty, this could be the gateway to success for Chilean eco-tourism."* (Quoted in Bernhardson, 2002: 495)

A National Trail is being developed that will *"traverse through the main natural ecosys-*

tems of the country, whilst also revealing the productive aspects as well as the historical and cultural assets of each region." It is also intended that the route *"consider optimum closeness, access and transit through National Parks, National Reserves and Natural Monuments within the System of State Wildlife Protected Areas (SNASPE), as well as other privately protected areas."* (Trail of Chile, 2003) It is being coordinated by the National Commission for the Environment but will rely on various public institutions to implement it. To some extent it has been modeled on the Trans Canada Trail and the Appalachian Trail. The trail is proceeding slowly, but sections are already open near Santiago, and in Parque Nacional Conguillio in Region 9.

Chile has regularly received foreign aid to develop, plan, and protect parks. An example is a UNDP-GEF funded project initiated in 2000 *"to establish the Cantillana Highlands as a nature sanctuary."* (UNDP-GEF, 2003) A more recent example is that of a Dutch funded project for the *"Conservation, Restoration and Development of the Juan Fernandez Islands, Chile."* (Van Leersum, 2003)

Research is conducted in parks by CONAF, university faculty and students, consultants, as well as by foreign scientists. Some projects are primarily academic, but others are intended to help protect and manage the parks.

Some parks in Chile are receiving increased domestic and foreign tourist use. In the year 2000, Torres del Paine National Park received 71,000 visitors, many of them from other countries. Laguna San Rafael National Park, where visitors travel by boat to see a glacier calving icebergs into the sea, is increasingly popular (Anon., 2002).

There has been international recognition of some protected areas in Chile. Easter Island National Park has been accorded World Heritage status, though mainly because of its archeological significance. Juan Fernandez National Park is a UNESCO World Biosphere Reserve, as is Lauca National Park in the northern Andes. So is Parque Nacional Conguillio, a 60,833 ha area, near Temuco, that protects one of the best examples of the endangered Araucaria (Monkey Puzzle Tree) forest, as well as volcanic features, alpine lakes and canyons.

Problems with Parks in Chile

The main problem for parks in Chile is the lack of sustained support for them. There is inadequate political support and limited public/NGO support, hence various other problems.

There is a lack of funding to develop and maintain parks, and deal with visitors. This partly stems from an inadequate system for collecting entrance fees, or very low fees at many parks. This is exemplified by Perez Rosales National Park. I was not charged anything to drive into the park and up Volcan Osorno to a spectacular viewpoint. However, local independent guides charge at least U.S.$100 to take 1-4 people on a one day climb to the summit. To take the scenic road through the park to Lago Los Santos, as many tour buses do, is free, but at least CONAF charges U.S.$2 to go along a short trail to see the waterfalls

and U.S.$17 for up to 10 people to camp at Playa Petrohue. In Easter Island National Park CONAF's idyllic campground at Anakena is free, though admittedly there are few facilities. In 2002, entry fees levied on cruise tourists to Laguna San Rafael, are being spent on improving the pier where visitors disembark and on increasing the ranger staff in the park. Some parks sell souvenirs, for example mugs and booklets at Parque Nacional Puyehue but there would seem to be great potential to generate more income this way, especially from foreign tourists. The lack of funds results in a lack of staff, both in the office and in the field.

Limited management allows resource degradation. Laguna San Rafael National Park is threated by the construction of a road to the glacier, aquaculture in the adjacent sea, unauthorized floating houses, and garbage. The Concon Dunes National Monument is threatened by housing development, as only 12 of the 50 ha are included in the Monument (Di Prima, 2002). In Juan Fernandez National Park repeated burning, over-exploitation of species, and introduction of plant and animal plagues have *"taken 75% of the endemic vascular flora to the verge of extinction."* (Cuevas and Van Leersum, 2001: 899) Introduced species have long been disrupting the ecology of many parks. Examples include: rainbow and brown trout in Perez Rosales, blackberry in Juan Fernandez (CONAF, 1976) and eucalyptus trees, sheep, cattle and horses in Easter Island National Park (Lee, 1990).

There has been some resistance to, or problems in gaining World Heritage designation for some parks, for example, Torres del Paine and Juan Fernandez. Fear of loss of sovereignty, and in the latter case, inadequate protection of the natural resources, especially the endemic species that justify such status, account, at least partially, for these difficulties.

Many parks have surprisingly limited recreational use. As Bernhardson (2002: 41) notes with respect to the national parks in the popular lake region, *"even here the backcountry gets relatively few hikers and trekkers, especially outside the January-February peak season."* Such limited use, while beneficial for the environment, results in limited revenues and public support.

Bernhardson (2002: 41) also notes that Chile *"has been criticized for not doing more to conserve environmentally significant areas close to population centers, especially when conservation conflicts with established economic interests such as forestry and mining."*

Chilean Parks, Canadian Parks and Water Management

The national park systems of Chile and Canada both have an ecological representation goal. Both countries have well-developed systems, but gaps remain. Management problems are similar in each system but more severe in Chile. In general, the parks in Chile are visited less.

The national parks in Chile seem to have a more limited explicit role in watershed management. However, the national reserves have as primary objectives *"soil and watershed conservation, the preservation of endangered wild flora and fauna, and the application of*

appropriate technologies to those ends." (Bernhardson, 2002: 42) Unlike in Canada, there is no wild or heritage river legislation in Chile. Furthermore, given Chile's lack of fossil fuel resources, there has been pressure to develop the hydro-electric potential of some of the rivers. This threatens several wild rivers. The Bio-Bio, for instance, is regarded as one of the world's top streamside habitats and white-water recreation rivers, but has been threatened by dams, which have been opposed by native peoples and environmentalists. The Fuetalufu in Region 10, considered by many to be *"the world's greatest white-water challenge,"* is also threatened (Bernhardson, 2002: 29).

Chile has no equivalent to PRFO but scientific meetings relevant to parks are organized frequently. Recent meetings have dealt with: *"Criteria for Evaluating the State of Conservation of Forest Fauna," "Native Forest and Local Communities," "Socio-Environmental Planning of Sites for the Conservation of Biodiversity,"* and *"Ecology and Conservation of the Biodiversity of Fragmented Landscapes."* (Congress in Chile, 2003) .Universities in both countries are undertaking applied research in parks, though less so in Chile. Finally, I believe there is scope for more staff exchanges, aid and volunteer projects linking Chile and Canada for mutual benefit.

References

Anon. 2002. *Turismo amenaza a Laguna San Rafael.* El Mercurio de Santiago, 29 April.

Bernhardson, W. 2002. *Moon Handbooks: Chile.* Avalon Travel Publishing, Emeryville: CA.

Castilla, J.C. 1975. *Marine national parks in Chile: need for their establishment, proba ble locations and basic criteria.* International Conference on Marine Parks and Reserves, Marine Parks Center of Japan, Tokyo.

CONAF. 1974. *Plan de Manejo, Parque Nacional Fray Jorge.* FAO, Santiago.

CONAF. 1975. *Plan de Manejo, Parque Nacional Torres del Paine.* FAO, Santiago.

CONAF. 1976. *Plan de Manejo, Parque Nacional Juan Fernandez.* FAO, Santiago.

CONAF. 2003. Available: www.conaf.cl/

Congress in Chile. 2003. Available: www.crechile.cl/congreso

Cuevas, J.G. and G. Van Leersum. 2001. Conservation, restoration, and development of the Juan Fernandez Islands, Chile. *Revista Chilena de Historia Natural,* 74: 899-910.

Di Prima, D. 2002. *Campo dunar en riesgo por edificacion.* El Mercurio de Valparaiso, December 1.

Gandara, C. de B. 2000. Proteccion de bosque nativo. *El Mercurio de Valparaiso,* 21 May.

Garay, G. and O. Guineo. 1990. *Conociendo Torres del Paine.* Santiago.

Hargreaves, C. (ed.). 1989. *Backpacking in Chile and Argentina.* Bradt Enterprises, Chalfont St.Peter, U.K.

Laborde, M. 2003. Contrafuertes de Santiago. *El Mercurio de Santiago.* 23 March.

Lee, G. 1990. *An Uncommon Guide to Easter Island.* International Resources, Arroyo Grande, California.

Samagalski, A. 1987. *Chile and Easter Island: A Travel Survival Kit.* Lonely Planet, South Yarra, Australia.

Trail of Chile. 2003. Available: www.senderodechile.cl
UNDP-GEF. 2003. *Project on Cantillana.* Available: roo.undp.org
Van Leersum, G. 2003. Interview re. Juan Fernandez Project, Vina del Mar, March 28.

Other Suggested Readings

Anon. 2000. *Gobierno y parlamentarios deben intervenir en parque.* El Mercurio de Santiago, 28 December.
Anon. 2003. *Tiempo libre: Sigue la huella.* El Mercurio de Santiago, 23 March, Sunday Magazine, 28.
Barnados, F. 2003. *Chile tendra areas marinas protegidas.* El Mercurio de Santiago, 28 March, A13.
Carvajal, R. 2001. *Destino de Parque La Campana.* El Mercurio de Santiago, 20 January.
Chilean Government Tourism Bureau. Available: www.sernatur.cl
Committee for the Defence of Flora and Fauna. 2003. Available: www.codeff.cl
Laude, R.A. 1986. El Archipelago de Juan Fernandez, territorio insular oceanico, V Region, Chile: Estudio de geografia regional. *Revista Geografica de Valparaiso,* 17: 35-114.
Marsh, J.S. 1986. National parks, tourism and development: Easter Island and the Galapagos Islands. Pp. 83-110.In: Marsh, J.S. (ed.). *Canadian Studies of Parks, Recreation and Tourism in Foreign Lands.* Occasional Paper 11, Department of Geography, Trent University: Peterborough, ON.
Marsh, J.S. 1990. Conservation, tourism and development, Juan Fernandez Islands, Chile. Pp. 58-66.In: Wilkinson, P.F. and W.C. Found. (eds.). *Resource Analysis Research in Developing Countries: The Experience of Ontario Geographers.* York University, Downsview.
National Forestry Corporation. 2003. Available: www.conaf.cl
Otero, A. 2000. *Guidelines for environmental management for tourist activities in Argentinian-Chilean great lakes corridor.* Abstracts of papers presented at The Fourth International Conference of Science and the Management of Protected Areas, Waterloo, Canada, 63.
Porteous, D. 1981. *The Modernization of Easter Island.* Western Geographical Series, University of Victoria, Victoria, B.C.
Pumalin Park. 2003. Available: www.parquepumalin.cl