

Annex: E Biodiversity and Chile's Protected Areas

Table -1: Number of Protected Areas per Management Category of the Washington Convention ¹ used in the National System of Wilderness State Protected Areas (SNASPE)

Management Category of SNASPE	# PA in SNASPE	Management Objective	Equivalent IUCN Category
Pristine Wilderness Area	0	A region or area with unmodified natural flora and fauna, with primitive settlements and communications and an absence of roads for motorized traffic and a ban on any commercial exploitation.	Category I Strict Nature Reserve
National Park	31	Extensive areas established to protect and conserve natural scenic beauty and Chilean flora and fauna. Educational, scientific and/or recreational activities are allowed where compatible with the conservation objectives	Category II: National Park
Natural Monument	15	Natural Monuments are usually limited areas, which are established with the aim of preserving a specific feature or flora or fauna species of esthetic, historical or scientific value under absolute protection, except for authorized scientific research or official inspection	Category III: Natural Monument
National Reserve	48	Regions established for conservation and use—under official supervision—of their natural riches, in which the flora and fauna are protected to the greatest degree possible in accordance with the objectives for which these areas were created	Category IV: Habitat/Species Management Area

Table -2: Hectare coverage and number of Public Protected Areas that form the National System of Wilderness State protected Areas SNASPE

Region	NP	NR	NM	Total (ha) SNASPE	# PA	Biosphere Reserves	Ramsar Sites
I	312,627	309,781	11,298	633,706	5	NP Lauca, NR Las Vicuñas and NM Salar de Surire	Salar de Surire and Salar de Huasco
II	268,671	76,570	31	345,272	4		Salar de Tara, and Hydrological System of Soncor
III	148,544		--	148,544	3		Negro Francisco and Santa Rosa Lagoons
IV	9,959	5,088	128	15,175	4	NP Fray Jorge	Conchalí Lagoon
V	24,701	19,789	5	44,495	7	NP Juan Fernández Peninsular, NP La Campana and NR Peñuelas Lake	El Yali Wetland
RM	--	10,185	3,009	13,194	2		
VI	3,709	42,752	--	46,461	3		
VII	--	18,669	--	18,669	7		
VIII	11,600	72,759	--	84,359	5	NP Conguillio, NR Alto Bío Bío	
IX	147,538	149,022	172	296,732	13		
X	491,309	112,716	2,517	606,542	13	-	Natural Sanctuary of Carlos Andwanter
XI	2,064,334	2,223,913	409	4,288,656	17	NP San Rafael Lagoon	--
XII	5,235,253	2,346,189	311	7,581,753	11	NP Torres del Paine	Lomas Bay
TOTAL	8,718,245	5,387,432	17,879	14,123,556	94		--

¹ Developed from information from CONAMA website and Manual para Guardaparques Parte I, Las Areas Silvestres Protegidas y la Conservacion de Espacios Naturales, CIPMA, January 2003.

PROTECTED AREAS IN THE REGION X –LOS LAGOS

Table -3: Public Protected Areas in Chile's Region X that form part the National System of Wilderness State Protected Areas SNASPE

Location (*)	Name & Type and year created (**)	Province	Size (has)	Main Ecosystems/ Habitat (***)	Main Threats	METT
	National Parks:					
Andes	National Park Puyehue (1983)	Osorno	106,77	Temperate Deciduous Forest (1,6) Temperate Laurecea Forest (1,2)	Adjoining properties that engage in unauthorized use of park lands for livestock grazing and tourism, impeding access to CONAF.	48
Andes	National Park Vicente Pérez Rosales(1981)	Llanquihue	253,78	Temperate Deciduous Forest (6) Temperate Laurecea Forest (1,2)	Private properties used for livestock activities and squatters on public properties with have livestock that freely occupies park space increases forest fire risk and pressure on Alerce resources.	57
Andes	National Park Alerce Andino (1982)	Llanquihue	39,255	Temperate Laurecea Forest (1) Temperate Resinous Forest (3) Temperate Evergreen Forest (4)	Pressure from the use of Alerce forest resources in some sectors by inhabitants of adjoining properties and risk of forest fire.	54
Andes	National Park Hornopirén (1985)	Palena	48,232	Temperate Deciduous Forest (1,6) Temperate Resinous Forest (3)	Pressure from the use of Alerce forestry resource by those in adjoining properties and forest fire risk	47
Coast	National Park Chiloé (1983)	Chiloé	43,057	Temperate Laurecea Forest (3) Temperate Resinous Forest (4) Temperate Evergreen Forest (4)	Use of coastal resources by small-scale fishermen and risk of fire.	63
Andes	National Park Concovado (XXx)	Palena	210,13	Temperate Evergreen Forest (3,4) Temperate Deciduous Forest (1)	Existence of illegal squatters who introduce livestock, and in coastal areas temporary dwellings of small-scale fishermen increase risk of fire.	--
	National Reserves:					
Andes	National Reserve Mocho-Choshuenco (1997)	Valdivia	7,537	Temperate Deciduous Forest (1,6)	Potential of fires from neighboring properties.	22
Coast	National Reserve Valdivia (1983)	Valdivia	9,727	Temperate Laurecea Forest (3,2)	Pressure from the use of forest resources by neighbors and the city of Corral in regard to waste, and forest fire risk associated with these factors.	53
Andes	National Reserve Llanquihue (1982)	Llanquihue	33,972	Temperate Laurecea Forest (1) Temperate Resinous Forest (3) Temperate Evergreen Forest (4)	Pressure from the use of some Alerce forest resources by neighbors and evergreen, and forest fire risk	35
Andes	National Reserve Futaleufu (1998)	Palena	12.065	Temperate Deciduous Forest (5)	Pressure from the use of mountain cypress and lenga forest resources and introduction of livestock that affects the huemul population by those on neighboring properties.	35
Andes	National Reserve Lago Palena (1970)	Palena	49,415	Temperate Deciduous Forest (5)	Pressure from the introduction of livestock by inhabitants of adjoining properties, and forest fire risk.	37
	Natural Monument					
Coast	Natural Monument Alerce Costero (1982)	Valdivia	2,308	Temperate Laurecea Forest (3) Temperate Resinous Forest (4)	Potential of forest fires from adjoining properties.	52
	Natural Monument Lahuen Nadi (2000)	Llanquihue	200	Temperate Evergreen Forest (4)	Potential of forest fires from adjoining properties.	38
Coast	Natural Monument Islotes de Punihuil-	Chiloe	9	Temperate Evergreen Forest (1)	Pressure from greater tourism use- wildlife observation	33
	TOTAL		607,55			41

(*) In terms of the mountain range and interandean valley ; (**) Year in which the decree creating the PA was last modified; Sources: Mardones, 1999 and Infante, 2005.

(***) According to the classification used below In table A-7

Table 4. Representativity of constituent ecosystems that compose the Valdivian Temperate Rain Forest Ecoregion conserved through a Protected Area approach in the Baseline and in the GEF Alternative

Habitat Type	Loca/ tion	Forest Ecosystems		Area (has)	Ha currently protected by SNASPE	% Area protected in SNAPSE	% under significantly improved management (Buffer + SNASPE)	% of new protected areas at the end of the project	New protected areas, 5 years after the project
			Characteristic Species						
Temperate Deciduous Forest	Andean	1	<i>Nothofagus pumili</i> ; <i>Ribes cucullatum</i>	221363.667	132133.942	59.69	0	0	0
		2	<i>Nothofagus alpina</i> <i>Dasyphyllum diacanthoi</i>	113941.893	222.442	0.2	0	0	0
		3	<i>Nothofagus alpina</i> <i>N. dombeyi</i>	129192.089	732.254	0.57	0	0	0
		4	<i>Nothofagus pumilio</i> <i>Araucaria araucana</i>	6680.478	0	0	0	0	0
		5	<i>Nothofagus pumilio</i> <i>Berberis ilicifolia</i>	394710.84	36104.43	9.15	0	0	0
		6	<i>Nothofagus pumilio</i> <i>Drimys andina</i>	426893.99	131913.897	30.9	0	0	0
		7	<i>Nothofagus obliqua</i> <i>Laurelia sempervirens</i>	1108376.38	2349.557	0.21	0	5.20	6.74
Temperate Laurecea Forest	Andean	1	<i>Nothofagus dombeyi</i> <i>Saxegothaea conspicua</i>	313988.033	124269.091	39.58	0.02	0	0
	Interior	2	<i>Nothofagus dombeyi</i> <i>Eucryphia cordifolia</i>	216947.902	23382.76	10.78	0	0.10	0.67
	Coast	3	<i>Weinmannia trichosperma</i> <i>Laureliopsis phillipiana</i>	1041086.65	55840.203	5.36	0.2	0.24	1.42
Temperate Resinous Forest	Andean	1	<i>Araucaria araucana</i> <i>Nothofagus dombeyi</i>	8084.885	0	0	0	0	0
	Andean	2	<i>de Austrocedrus chilensis</i> y <i>Nothofagus dombeyi</i>	12411.334	467.761	3.77	0	0	0
	Andean	3	<i>Fitzroya cupressoides</i>	321973.196	62610.404	19.45	8.14	0	0
	Coast	4	<i>Fitzroya cupressoides</i>	87367.247	18124.931	20.45	0	4.34	4.85
	Coast	5	<i>Pilgerodendron uvifera</i> <i>Tepualia stipularis</i>	269432.475	0	0	0	0	0
Temperate Evergreen Forest	Coast	1	<i>Aextoxicon punctatum</i>	43667.619	1513.951	3.47	0	4.03	12.08
	Andean	2	<i>Nothofagus betuloides</i> <i>Laureliopsis phil</i>	36307.803	19598.992	53.98	0	0	0
	Interior	3	<i>Nothofagus betuloides</i> <i>Desfontainia sp</i>	186277.253	62073.528	33.32	0	0	0
	Interior	4	<i>Nothofagus nitida</i> <i>Podocarpus nubigena</i>	1384444.39	113365.865	8.19	0.63	0	0
High altitude desert	Andean	1	<i>Nassauvia dentata</i> <i>Senecio portalesianus</i>	10543.832	2855.555	27.08	0	0	0

Habitat Type	Loca/ tion	Forest Ecosystems		Area (has)	Ha currently protected by SNASPE	% Area protected in SNAPSE	% under significantly improved management (Buffer + SNASPE)	% of new protected areas at the end of the project	New protected areas, 5 years after the project
			Characteristic Species						
Deciduous Scrub	Andean	1	<i>Nothofagus antarctica</i>	2283.445	2260.572	99.00	0	0	0
Patagonian Scrub	Andean	1	<i>Adesmia longipes</i> <i>Senecio bipontini</i>	4290.349	2975.94	69.36	5,76	0	0
Total				6340265.744	792796.075				

Table 5: Constituent ecosystems that compose the Valdivian Temperate Rain Forest Ecoregion conserved through the principal (known) Private Protected Areas in Region X

Private Protected Area	Habitat Type	Areas [ha]	Total Area [ha]	Representativity
Chan Chan	Temperate Deciduous Forest	1.968	670.028	0,29%
	Temperate Laurecea Forest	2.004	1.041.087	0,19%
Enco	Temperate Deciduous Forest	16.916	891.392	1,90%
	Temperate Laurecea Forest	3.700	1.041.087	0,36%
Huilo-Huilo	Temperate Deciduous Forest	49.915	891.392	5,60%
	Temperate Laurecea Forest	9.609	1.041.087	0,92%
Parque Oncol	Temperate Laurecea Forest	748	1.041.087	0,07%
Pinera (SN)	Temperate Resinous Forest	107.798	269.432	40,01%
	Temperate Evergreen Forest	1.123	1.384.444	0,08%
Pumalin	Temperate Laurecea Forest	52.924	313.988	16,86%
	Temperate Resinous Forest	88.159	321.973	27,38%
	Temperate Evergreen Forest	23.158	1.570.722	1,47%
	Temperate Deciduous Forest	94.165	1.042.968	9,03%
Quechumalal	Temperate Laurecea Forest	6.015	1.041.087	0,58%
	Temperate Deciduous Forest	4.117	243.134	1,69%

TABLE 6: INPUT FOR THE INDICATORS VALUES FOR M&E PLAN AND LOGFRAME INDICATORS

	#	Name & Type and year created (**)	Direct Area (ha)*	#	Indirect Additional Area **	Main Ecosystems/ Habitat (***)
Andes	1	NP Alerce Andino	39,395	12	39,255	Temperate Evergreen Forest (4), Temperate Resinous (3) Temperate Lauracea (1),
	2	NR Llanquihue	33,951	13		Temperate Evergreen Forest (4),Temperate Patagonian Scrub (1) Temperate Resinous (3),Temperate Lauracea (1,2)
	3	Buffer Pcoihuéñ	666	14		Temperate Evergreen (4),Temperate Resinous (3),Temperate Lauracea Forest (1)
	4	Buffer Rio Sur	991			Temperate Evergreen forest (4), Temperate Lauracea Forest (1))
	5	Buffer Carretera	896			Temperate Evergreen forest (4)
		Total pilot public buffer zone			6,239	Temperate Evergreen (4),Temperate Resinous (3), Temperate Lauracea Forest (1)
					73,290	Temperate Evergreen 4),Temperate Resinous(3), Temperate Lauracea Forest (1,2)
	Sub- Total	75,759		79,529	A and B are increased protection	
Valley	6	Las Cumbres	353			Temperate Deciduous Forest (7)
		La Quila	138			Temperate Deciduous Forest (7)
		Toro del Agua	19			Temperate Deciduous Forest (7)
		El Corte,	46			Temperate Deciduous Forest (7)
		La Montana	648			Temperate Deciduous Forest (7)
		Lote B1,	120			Temperate Deciduous Forest (7)
		Curirruca,	1227			Temperate Deciduous Forest (7)
		San Luis	Tbd		9	Temperate Deciduous Forest (7)
		El Mirador	Tbd		44	Temperate Deciduous Forest (7)
		Colo-Colo	Tbd		136	Temperate Deciduous Forest (7)
		Bellavista	Tbd		131	Temperate Deciduous Forest (7)
		Bosque Nativo de empresas forestales	tbd		50,185	Temperate Deciduous (2,3,7) ,Temperate Evergreen (1), Temperate Laurecea (2,3),
Coast	7	Indigenous Reserve (IR) Trafunco los Bados (Phase 1)	12,471	16		Temperate Evergreen Forest (1),Temperate Resinous (4),Temperate Lauracea (3)
		IR Melillanca Huanque	1,791			Temperate Laurecea Forest (2,3)
		IR Choroy Traiguen			5,298	Temperate Evergreen Forest (1),Temperate Lauracea (3)
		IR Puquitrin			1,476	Temperate Evergreen Forest (1) Temperate Lauracea Forest (3)
		IR Catrihuala			17,393	Temperate Evergreen (1),Temperate Resinous (4), Temperate Laurecea Forest (2,3)
		IR Manquemapu			7,433	Temperate Evergreen Forest (1), Temperate Lauracea Forest (3)
	8	NGO Valdivian Reserve	59,426	17		Temperate Evergreen (1),Temperate Resinous(4), Temperate Laurecea Forest (2,3)
		Sub-total	76,239		82,105	C and D are new areas
	9	BufferNGO Valdivian Reserve		18	23,545	Temperate Evergreen (1)Temperate Resinous Forest (4), Temperate Laurecea (2,3)
		Quitluto			7,461	Temperate Evergreen Forest (1),Temperate Lauracea Forest (3)
	10	NM Alerce Costero	2,308		2,472	Temperate Resinous Forest (4),Temperate Laurecea Forest (2,3)
	11	NR Valdivia (1983)	9,727	19		Temperate Laurecea Forest (3) Temperate Resinous Forest (4)
				20		Temperate Laurecea Forest (3,2)
		8 +9+10+11			33,478	E an F are increased protection

Indicators	Total Area	Ecosystems
Additional (new) area brought under PA conservation directly in project	76,239	Temperate Deciduous Forest (2) Temperate Laurecea Forest (2) Temperate Laurecea Forest (3) Temperate Resinous Forest (4) Temperate Evergreen Forest (1)
Additional Area to be brought under conservation within following 5 years of project as a direct result	82,105	Temperate Deciduous Forest (2) Temperate Deciduous Forest (3) Temperate Deciduous Forest (7) Temperate Laurecea Forest (2) Temperate Laurecea Forest (3) Temperate Resinous Forest (4) Temperate Evergreen Forest (1)
Area under directly (significantly) improved management at <u>end of project</u> as measured by reduced operations costs, METT, reduced firewood extraction (public and private buffer pilots)	87,714	Temperate Evergreen Forest (4) Temperate Resinous Forest (3) Temperate Resinous Forest (4) Temperate Laurecea Forest (1) Temperate Laurecea Forest (2) Temperate Laurecea Forest (3) Temperate Patagonian Scrub (1)
Area under directly (significantly) improved management 5 years after project through as measured by reduced operations costs, METT, reduced firewood extraction (final buffer)	113,007	Temperate Evergreen Forest (1) Temperate Evergreen Forest (4) Temperate Resinous Forest (3) Temperate Resinous Forest (4) Temperate Laurecea Forest (1) Temperate Laurecea Forest (2) Temperate Laurecea Forest (3) Temperate Laurecea Forest (2)
Area under directly under more cost effective and improved enforcement	11,955	Temperate Laurecea Forest (3) Temperate Resinous Forest (4)
Public PA Area under improved management effectiveness as measured by METT (actual sizes)	607,550	TbD
Private PPA Area under improved management effectiveness as measured by METT (actual sizes)	1,209	TbD
Estimated Area <u>direct</u> area of influence of project in 5 years	163,953	TbD
Estimated Area <u>direct</u> area of influence of project in 10 yrs	359,065	TbD
Estimated area of influence of the System	1,141,912	TbD

Protection Instruments	Description
National System of State-Protected Wilderness Areas SNASPE	Areas may be introduced to the SNASPE through assignation by the National Property Ministry or through a private party's commodatum or concession to CONAF. CONAF classifies protected areas according to Washington Convention parameters: Virgin Land Reserve, Nature Reserve, Nature Park or Natural Monument.
AMCP Marine and Coastal Protected Areas	It is advisable to draft an agreement with SUB.PESCA and SERNAPESCA to establish an area (these organizations have agreed to this with CONAMA). SUB.MARINA must have a recipient for the area, who shall define how it is to be administrated. AMCP designation must be requested from the Regional Coastal Commission (Comisión Regional del Bordo Costero). Depending on the conservation objectives and the activities promoted, it could contain aquaculture activities or not. The recipient could be Foundation or organizations (e.g. universities or CONAF or SERNAPESCA).
AMP Marine Protected Areas	There are Marine Reserves and Parks (under the Law of Fisheries) not currently regulated. Until the Law of Fisheries is modified, the unquestionable manager of these areas is SERNAPESCA (cannot be delegated). Creation of these areas is requested from SERNAPESCA. In both cases, activities are restricted, and conservation objectives are associated to fishery resources.
ASPP Private Wilderness Protected Areas	No rules in force. Establishes 4 categories: Private Strict Preservation Area, Private Natural Park, Private Nature Reserve, and Private Natural Monument. To establish these an application is submitted to CONAF, a management plan is then submitted to SEIA (depending on the category requested for the area). Economic benefits will come into effect with the approval of the Native Forest Law.
RAMSAR Sites	Protection of wetlands of international importance, can apply for RAMSAR status if site complies with one of the three selection criteria described by RAMSAR. The paperwork is submitted at the national level to CONAF, who hands the proposal over to the Convention. A conservation management plan should be proposed where productive activities or development are intended.
Biosphere Reserves	Category granted by UNESCO to land or marine areas having biodiversity of global importance. The State pledges to protect such areas based on a Conservation Management Plan, and must ensure compliance with the conservation objectives contained in the CMP. UNESCO provides funds for some actions aimed at fulfilling the conservation objectives. Chile has 7 Biosphere Reserves, all also categorized within SNASPE in addition to their Biosphere Reserve status. CONICYT (National Commission for Scientific and Technological Investigation) is the Scientific Focal Point for UNESCO in Chile, and receives all applications for Biosphere Reserve status. CONAF manages the existing Biosphere Reserves.
Natural Sanctuaries	Status granted by the National Monument Council and that must be endorsed by a Decree from the Ministry of Education. The Declaration of such status should be requested from this Council. The requirements are as follows: rationale demonstrating the uniqueness of the site in Chile; agreement of the owners; and a Management Plan for which an organization must assume responsibility.
Decree of destination for conservation by BBNN	Territories that are national property for public use can be set aside for conservation, eco-tourism, and/or scientific use (astronomic, archaeological, paleontological) by BBNN (National Property Ministry). This status could be associated with a recipient, who becomes a concession holder, or the institution itself (BBNN) may be the concession holder. Concessions are granted by a Regional Concessions Committee. For the purposes of the SEIA, the area is considered an Area Under Official Protection.
Decrees for Conservation – MINAGRI	The Ministry of Agriculture is empowered to establish Decrees for the conservation of ecosystems, particular species of flora and fauna, and lands. Such decrees introduce restrictions on certain land uses. The last decree was issued more than a decade ago. However, several existing areas exist in various parts of the country. For SEIA and IPT (Land Use Planning) purposes these are considered Areas Under Official Protection.
IPT Instruments of Territorial Planning	MINVU's IPT can establish terrestrial areas with preferential uses (regional level) or with restricted use for conservation (inter-municipal, or municipal level). These areas require a resolution from COREMA regarding priority sites for protection in order to be included in the IPT. The sites under consideration should be included in the respective plan, with use restrictions according to their conservation objectives.

Protected Area Category	Management Objective and Administration	Number in 1999
<i>Biosphere Reserves</i>	Promoted by UNESCO	7
<i>Natural Sanctuaries</i>	Derives its legal base in the Law 17.288 concerning National Monuments under the auspices of the Ministry of Education	25
<i>Areas for Tourism Protection</i>	Defined by Article No 4 of Law 18.378 in which the President of the Republic is granted the right to “after first informing the National Tourism Service -SERNATUR, to decree, through the Ministry of Agriculture ,a ban on the felling of trees situated within 100 meters of public highways where required to conserve tourist value.	19
<i>No Hunting Zones</i>	These areas are regulated by Article 4 in Law 19.473 concerning hunting. Their objective is to temporarily prohibit hunting or capture in determined areas, , where the occurrence of catastrophic events has affected wildlife, and when the occurrence of any other event has produced environmental damage.	8
<i>Sites of Historic or Scientific Interest</i>	These areas are created especially in response to the mining effects with the objective to control the execution of mining works within them. These areas are established within the Mining Code, Article 17 No 6.	24