

Bioinvasion and Global Environmental Governance: The Transnational Policy Network on Invasive Alien Species

Chile's Actions on IAS

Description³

The Republic of Chile occupies a long narrow strip of land, averaging 175 km in width, along the western coast of South America. It borders Peru to the north, Bolivia to the northeast, Argentina to the east, and the Drake Passage at the country's southernmost tip. Chile's climate varies drastically from the dry desert of the north, to temperate climate of the middle regions and the harsh sub-Antarctic of the south, with the Andean Mountains. Prior to the coming of the Spanish in the 16th century, northern Chile was under Inca rule while Araucanian Indians (also known as Mapuches) inhabited central and southern Chile. Although Chile declared its independence in 1810, decisive victory over the Spanish was not achieved until 1818. A three-year-old Marxist government, led by Salvador Allende, was overthrown in 1973 in a military coup led by Augusto Pinochet. He ruled until a president was freely elected in 1990. Sound economic policies throughout the 1980s have contributed to steady growth, reduced poverty rates by over half, and have helped secure a democratic and representative government. Many of the 16.5 million people engage in the primary economic activity, agriculture.

Overview of Biodiversity

While Chile's biodiversity does not compare with the richness of tropical areas, it is singular in that it includes a large number of endemic species due to its geographic situation isolated by the Andes, the Pacific Ocean, the Atacama desert and the polar region. As a result of its different latitudes, from subtropical to subantarctic, the country also boasts a large variety of ecosystems.

- [CBD Country profile](#)
- [Earth Trends Country Profile on Biodiversity and Protected Areas](#)

Legislation relating to IAS

- La Ley de Bases del Medio Ambiente (Ley 19.300)
- Integrated National Program for the Control of Invasive Species by 2015
- the Agreement on the Conservation of Albatrosses and Petrels
- Resolution No 1551/1998 (Phytosanitary Requirements)⁸

Government Agencies/Programs/Ministries dealing with IAS

- [The Ministry of Health](#)
- The National Planning Office
- [National Commission of the Environment](#)

- (Inter-American Biodiversity Information Network) [IABIN Invasive Information Network \(I3N\) Chile](#)
- National Committee on Invading Species
- Invasive Species Control Committee
- Veterinary Services

Major Invasive Alien Species⁴

Acacia melanoxylon (tree)	Myiopsitta monachus (bird)
Ambrosia artemisiifolia (herb)	Oncorhynchus mykiss (fish)
Ameiurus nebulosus (fish)	Pinus spp. (tree)
Bugula neritina (bryozoan)	Pittosporum undulatum (tree, shrub)
Carpobrotus edulis (succulent)	Rattus exulans (mammal)
Castor canadensis (mammal)	Sagina procumbens (herb)
Cervus elaphus (mammal)	Salmo salar (fish)
Cinara cupressi (insect)	Salvelinus fontinalis (fish)
Columba livia (bird)	Sus scrofa (mammal)
Crassostrea gigas (mollusc)	Tinca tinca (fish)
Cyprinus carpio (fish)	Verbascum thapsus (herb)
Hypericum perforatum (herb)	Vespula germanica (insect)
Linaria vulgaris (herb)	Vibrio cholerae (micro-organism)
Linepithema humile (insect)	Xenopus laevis (amphibian)

Native Species Exported/Introduced to Non-Native Environments⁴

Cestrum parqui (shrub)	Nassella neesiana (grass)
Chromolaena odorata (herb)	Prosopis spp. (tree, shrub)
Cortaderia selloana (grass)	Spartina densiflora (grass)
Gunnera tinctoria (herb)	Verbena brasiliensis (herb)
Ludwigia peruviana (aquatic plant)	Xanthium spinosum (herb)
Myocastor coypus (mammal)	

Table 1 Actions to prevent, detect and manage IAS categorized into three themes: biodiversity, human health, and economic

Note: Actions (such as projects, publications and programs) are classified according to the most obvious theme but may also fit into the dimensions of another.

Theme	Action
Biodiversity	<ul style="list-style-type: none"> • National Policy for Protection of Threatened Species (from IABIN I3N Chile) released in December 2005 is a significant advancement for the protection of endangered species, the preservation of protected areas, and the conservation of native biota. The policy aims to: <ol style="list-style-type: none"> 1. Promover la recopilación y generación de información científico-técnica sobre la biota nativa, con la finalidad de determinar los factores de amenaza y su estado de

	<p>conservación, de modo de reconocer las especies bajo riesgo de extinción, facilitar su clasificación y su recuperación.</p> <ol style="list-style-type: none"> 2. Involucrar y comprometer, más eficazmente, la participación de las instituciones relacionadas y de la ciudadanía en la protección de la biota nativa amenazada. 3. Adecuar el marco normativo e institucional para una mejor conservación de la biota nativa amenazada, incluida la mitigación de sus amenazas. 4. Crear, mejorar e implementar instrumentos para la recuperación de las especies amenazadas. 5. Fortalecer y promover mecanismos de financiamiento para la conservación de especies amenazadas. 6. Promover la protección de especies amenazadas a través de la educación, capacitación y difusión. <ul style="list-style-type: none"> • IABIN I3N Chile Pilot Project “Development of a Node of National Information on Invading Species” First Advance’s Report lists specific objectives (in progress as of 2002): <ol style="list-style-type: none"> 1. Developing a data base with information on exotic species considerate harmful or invading, that they are present or have been detected in the national ecosystems. 2. Developing a data base that contains information on national experts that are relate to the subject by means of basic and applied investigation. 3. Developing a data base that contains information about the studies and projected related to exotic species harmful or invading. 4. Developing a data base with the public or private organizations related to introduction, control and/or prevention of exotic species. 5. Digitized the previous information to a data metabase that permits be rising to the international net IABIN. • The effects of IAS on habitats, ecosystems and other species have been evaluated for most known invasives. There have been numerous studies developed with risk assessments for specific invasives, especially within aquaculture, as for ornamental and experimental species. In aquaculture the main species has been salmon farming. There have also been studies of ships ballast waters and sediments and its relation with plankton and the bacterial appearance of certain species of seaweed. For terrestrials, 19 species of invasive vertebrates have been identified. Pilot projects have begun for control of Beaver and Mink in the Magallanes Region, the Blackberry, Yellow Jacket Wasps and Goats as well as other species in the Juan Fernandez Archipelago. ¹ • Chile is using the ecosystem approach as well as the
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	<p>precautionary principle in the analysis of the risks associated with the voluntary introduction of aquatic exotic species. These approaches, as well as the biogeographic approach are being used for the voluntary and involuntary introduction of IAS through ballast water. The precautionary approach is used when authorizing ballast water unloading and other residues from naval ships and devices. There are also programs to promote fishing health of the Sernapesca.¹</p> <ul style="list-style-type: none"> • Chile is in the process of preparing the Regulation of Plagas (REPLA). Also, an Operative Committee was formed in August 2005 to facilitate inter-institutional coordination at the national level for the control of invasive species. One of the objectives of the Committee is to implement an Integrated National Program for the Control of Invasive Species by 2015.¹ • Agreement on the Conservation of Albatrosses and Petrels (signatory but not yet ratified):² <p style="text-align: center;">Article 3: General Conservation Measures</p> <p>1. In furtherance of their obligation to take measures to achieve and maintain a favourable conservation status for albatrosses and petrels, the Parties, having regard to Article XIII, shall:</p> <p>b) eliminate or control non-native species detrimental to albatrosses and petrels;</p> <p style="text-align: center;">Annex 2: Action Plan</p> <p>1.4 <i>Non-native Taxa</i></p> <p>1.4.1 The Parties shall take all feasible action to prevent the introduction to habitats, deliberately or otherwise, of non-native taxa of animals, plants or hybrids or disease-causing organisms that may be detrimental to populations of albatrosses and petrels.</p> <p>1.4.2 The Parties shall take measures to the extent feasible to control and, where possible, eradicate non-native taxa of animals or plants, or hybrids thereof, that are, or may be, detrimental to populations of albatrosses or petrels. Such measures should satisfy to the extent feasible, humane and environmental considerations.</p> <p>2.2.1 Where feasible, the Parties shall give protection to the breeding sites of albatrosses and petrels, using existing mechanisms where available. For all such protected areas, the Parties shall endeavour to develop and implement management plans and take other actions which maintain and enhance the conservation status of the species, including <i>inter alia</i> the prevention of habitat degradation, the reduction of disturbance to habitats and the minimisation or elimination of damage by introduced non-native animals, plants, hybrids or disease-causing organisms.</p> <p>5.1 The reports of the Advisory Committee under Article IX (6)</p>
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	<p>c), should as appropriate include:</p> <p>h) reviews of the status at breeding sites of introduced animals, plants and disease-causing organisms known or believed to be detrimental to albatrosses and petrels;</p>
Human health	<ul style="list-style-type: none"> • National Committee on Invading Species aims to develop the appropriate policies, legislation and institutions needed to deal with IAS.¹ • Chile prohibits the entry of birds and bird-products.⁷ • Inspection of cargo, vehicles and passengers is conducted at all land, air and sea border crossings by the Veterinarian Service to minimize the entry of animal diseases.⁶
Economic	<ul style="list-style-type: none"> • Regulation 96 and 6.26 are complementary and regulate sanitary certification.¹ • All goods of plant origin from abroad that are in transit through national territory must comply with the phytosanitary requirements set out in Resolution No 1551/1998.⁸ • There are additional requirements for the transit of Bolivian Oak (Resolution No. 2230/2001); fruit from Argentina produced in areas under the Official Program for the Eradication of fruit flies (Resolution No. 3606/2003); citrus fruits from the northwest and northeast of Argentina (Resolutions No. 2544/2004 and No. 6967/2005); Avocado and paprika from the departments of Moquegua and Tacna Peru (Resolution No. 1773/2007).⁸ • The system for imports of agricultural and forestry goods regulates the import of <ol style="list-style-type: none"> 1. Products intended for consumption, processing and industrialization; these include fruits and vegetables, nuts, grains, dried products, fresh cut flowers and foliage and wood, packaging, chips, etc. 2. Products intended for propagation, breeding and release into the environment; these include seeds, plants or plant parts, spread of underground structures (estructuras subterranas de propagacion), pollen and LMOs 3. Other regulated articles such as farm machinery, biological materials and inert substrates and crafts among other objects.⁹ • studies have been conducted on the effects of ballast water and sediments.⁵

Table 2 Actions on IAS in cooperation with other countries

Agreement/ Organization	Countries/ Member	Action
U.S.-Chile Joint Commission for	US and Chile	3.2. Preventing the transmission of invasive species.

<p>Environmental Cooperation, Environmental Cooperation Agreement, 2005-2006 Work Program</p>		<p>Explore joint conferences and research opportunities to:</p> <ul style="list-style-type: none"> • Develop practical decision making tools for invasive species management; • Evaluate trade impacts of invasive species; • Exchange experiences and approaches to border controls to prevent the entry of invasive species. <p>U.S.</p> <ul style="list-style-type: none"> • USDA • EPA • DOI • DOS • Invasive Species Council • Department of Homeland Security / Customs and Border Protection (DHS/CBP) <p>Chile</p> <ul style="list-style-type: none"> • DIMA • National Customs Service SAG • MINSAL • Direction General of Maritime Territory and Merchant Marine (DIRECTEMAR) • SUBPESCA • CONAMA
<p>International Workshop on Invasive Plants in the Mediterranean Type Regions of the World (Mèze, FR, 2005-05-25/27)</p>	<p>It was attended by over 110 experts from 24 countries, including 19 EPPO and other Mediterranean Type Regions of the World (Northern Chile, California, the Cape Region of South Africa, and Western Australia). Download a list of participants.</p>	<p>The Workshop, co-organized by the Conservatoire Botanique National Méditerranéen de Porquerolles, the European and Mediterranean Plant Protection Organization, the Council of Europe and the World Conservation Union – Centre for Mediterranean Cooperation, was held in Mèze (France), from 25 to 27 May 2005.</p> <p>Alien plants in mediterranean ecosystems in the Americas : comparing species richness and composition at local and regional scale, Ramiro Bustamante, Chile</p>

<p>SIXTEENTH APEC MINISTERIAL MEETING Santiago, Chile 17-18 November 2004 JOINT STATEMENT</p>	<p>Ministers of 22 countries and several observers</p>	<p>Invasive Alien Species</p> <p>Ministers noted the difficulty and cost of dealing with problems caused by Invasive Alien Species (IAS). Ministers agreed that APEC should identify opportunities for cooperation and capacity building to detect, monitor, and manage invasive pests in the Asia-Pacific region, using science-based criteria in accordance with international standards. Ministers also agreed that a shared awareness and understanding of the risks that invasive marine pests pose to regional growth and sustainability is urgently needed, along with coordinated regional action to help prevent their spread. Ministers welcomed the progress on the development of the Regional Management Framework for Control and Prevention of Introduced Marine Pests by the Marine Resources Conservation Working Group. They noted that IAS problems cut across sectors and, therefore, called on Senior Officials to instruct relevant APEC fora to work together to evaluate how APEC can best contribute on this matter and to report the results in 2005. In this context, Ministers welcomed the APEC Symposium to prevent the spread of the Golden Apple Snail held in Chinese Taipei in September 2004 and the APEC Workshop on Introduced Marine Pests held in Chile in May 2004.</p>
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Case Study

[The Economic Implications of Invasive Species in International trade: the Chile-US fresh fruit market](#)

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Executive Summary

Under the World Trade Organization's Sanitary and Phytosanitary agreement, countries are required to use a common set of procedures for evaluating risks of contamination in internationally traded commodities. It also requires that quarantine systems reflect the expected benefits from risky trade and the level of risk that is acceptable for the society estimated scientifically. International trade of fresh fruit and vegetables involves high risk

for unintentional introduction of new invasive species. U.S. trade of fruit and vegetables represent a value of more than \$10 billion a year and more than 50% of fruit and vegetables consumed in the U.S. is imported. Chile is one of the major U.S. fresh fruit suppliers, with a value of more than \$ 700 million a year. In order to evaluate the risk of a given invasive species, as well as the costs and benefits of taking a particular quarantine measure, a bio-economic fruit model based both on invasive species characteristics and the economic implications for both consumers and producers is developed. This model is used then to evaluate the cost and benefits of alternative invasive species management policies including off-shore control, control at the border, domestic monitoring and control, as well as eradication.

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