

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

Mexico's Actions on IAS

Description¹⁰

The United Mexican States, commonly known as Mexico, is a federal constitutional republic in North America. It is bordered on the north by the United States; on the south and west by the Pacific Ocean; on the southeast by Guatemala, Belize, and the Caribbean Sea; and on the east by the Gulf of Mexico. With an estimated population of 111 million, it is the 11th most populous country. Mexico is a federation comprising thirty-one states and a Federal District, the capital city.

The site of advanced Amerindian civilizations, Mexico came under Spanish rule for three centuries before achieving independence early in the 19th century. A devaluation of the peso in late 1994 threw Mexico into economic turmoil, triggering the worst recession in over half a century. The nation had been making an impressive recovery until the global financial crisis hit in late 2008.

The elections held in 2000 marked the first time since the 1910 Mexican Revolution that an opposition candidate - Vicente Fox of the National Action Party (PAN) - defeated the party in government, the Institutional Revolutionary Party (PRI). He was succeeded in 2006 by another PAN candidate Felipe Calderon. Mexico has a free market economy in the trillion dollar class which is strongly linked to those of its North American Free Trade Agreement (NAFTA) partners. It contains a mixture of modern and outmoded industry and agriculture, increasingly dominated by the private sector. As a regional power and the only Latin American member of the Organisation for Economic Co-operation and Development (OECD) since 1994, Mexico is firmly established as an upper middle-income country, considered as a newly industrialized country.

Overview of Biodiversity

Given its situation in the zone of confluence of the Nearctic and Neotropical biogeographic regions, its very varied topography and climate, its long history of in situ evolution and the manipulation and domestication of plant populations and species by indigenous people, Mexico is one of the five foremost biologically “megadiverse” countries in the world: It has five of the eight principal terrestrial biomes, and has one of the greatest assemblages of ecosystem diversity anywhere on the planet – a facet of biodiversity shared only with China, India, Peru and Colombia.

- [CBD Country Profile](#)
- [Earth Trends Country Profile on Biodiversity and Protected Areas](#)
- [Viva Natura: Online source of information on Biodiversity of Mexico](#)

Legislation relating to IAS

- Mexico has several pieces of legislation pertaining to plant health; these include the Federal Act on Plant Health, and the Mexican Official Standards No. 005/1995, No. 028/1995, No. 006/1996, No. 007/1995, No. 008/1995, No. 009/1995, and No. 044/1995.⁹
- the General Law for Ecological Equilibrium and Protection and the General Law for Wildlife.⁶ (under review)
- [The Fisheries Law](#) (Ley de Pesca) (1992, as amended in 2001) and the [Regulation to the Fisheries Law](#) (Reglamento de la Ley de Pesca) (1999, as amended in 2004) are the main legislative documents governing the conservation, preservation, exploitation and management of all aquatic flora and fauna.⁸

Government Agencies/Programs/Ministries dealing with IAS

- The National Commission for Agricultural and Animal Health (CONASAG)⁶
- The [National Commission for the Knowledge and Use of Biodiversity](#) (CONABIO)
- The [Secretary of Environment and Natural Resources](#) (SERMANAT)
- The Federal Office for Environmental Protection (PROFEPA)
- [National Commission on Aquaculture and Fisheries](#) (CONAPESCA)

Major Invasive Alien Species¹

Aedes albopictus (insect)	Gymnodinium catenatum (algae)
Aristichthys nobilis (fish)	Hypophthalmichthys molitrix (fish)
Boonea bisuturalis (mollusc)	Linepithema humile (insect)
Boa constrictor imperator (reptile)	Lygodium japonicum (vine, climber, fern)
Brassica tournefortii (herb)	Melia azedarach (tree, shrub)
Bubulcus ibis (bird)	Molothrus bonariensis (bird)
Camelina sativa (herb)	Mus musculus (mammal)
Capra hircus (mammal)	Mytilus galloprovincialis (mollusc)
Casuarina equisetifolia (tree)	Nicotiana glauca (shrub)
Columba livia (bird)	Oreochromis spp. (fish)
Cyprinella lutrensis (fish)	Passer domesticus (bird)
Eleutherodactylus planirostris (amphibian)	Pennisetum ciliare (grass)
Eichhornia crassipes (aquatic plant)	Perna perna (mollusc)
Geukensia demissa (mollusc)	Ricinus communis (tree, shrub)

Native Species Exported/Introduced to Non-Native Environments¹

Anthonomus grandis (insect)	Macfadyena unguis-cati (vine, climber)
Ambrosia artemisiifolia (herb)	Nymphaea odorata (aquatic plant)
Antigonon leptopus (vine, climber)	Opuntia stricta (shrub)
Caiman crocodilus (reptile)	Parthenium hysterophorus (herb)
Carpodacus mexicanus (bird)	Piper aduncum (tree, shrub)
Cedrela odorata (tree, shrub)	Psidium guajava (tree, shrub)
Crepidula fornicata (mollusc)	Rangia cuneata (mollusc)
Geukensia demissa (mollusc)	Solanum tampicense (shrub)
Leucaena leucocephala (tree)	Solenopsis geminata (insect)

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"> • As of 2006, Mexico's National Commission for the Knowledge and Use of Biodiversity (CONABIO) had identified at least 800 invasive species in Mexico, including 665 plants, 77 fish, 2 amphibians, 8 reptiles, 30 birds and 6 mammals. Furthermore, the cost of eradicating one or more introduced mammals from 23 islands off the coast of northwest Mexico was about \$750,000.¹³ • The National Commission for Agricultural and Animal Health (CONASAG) is in charge of dealing with invasive diseases threatening Mexico's agriculture.⁶ • The CONABIO runs the National Information System on Biodiversity.⁶ CONABIO, has analyzed the possible routes of dispersal and the geographic distribution of IAS within and outside Mexico.³ • CONABIO held a March, 2007 workshop on the "risks associated with invasive species."⁷ Furthermore, in Ensenada, from the 8 to 12 December 2008, a workshop entitled "Training in Evaluation, Control and Monitoring of Invasive Species on Islands in Mexico" was conducted. • The Secretary of Environment and Natural Resources (SERMANAT) is collaborating with CONABIO to create guidelines for a risk analysis of the introduction of aquatic IAS.³ • Mexico's government, CONABIO, runs an online portal on Invasive Species (Spanish) containing a list of IAS affecting Mexico; alerts of new IAS sightings; a list of recent and upcoming international conferences and events related to combating/addressing IAS; and a catalogue of important publications relating to IAS (such as national reports, strategies, socio-economic impacts of IAS, and texts of international agreements).² • Mexico's Ramsar sites that are threatened by invasive species include:¹¹ <ol style="list-style-type: none"> 1. Áreas de Protección de Flora y Fauna de Nahá y Metzabok 2. Humedales del Lago de Pátzcuaro. 3. Laguna Costera El Caimán (it is expected that this site will soon be designated as a Protected Area) 4. Oasis de la Sierra El Pilar 5. Reserva de la Biosfera Archipiélago de Revillagigedo (management plan is in place, as well as group of technicians paid by the federal government to eradicate introduced sheep, pigs and rabbits.)

	<p>6. Sian Ka'an (management plan in place)</p> <p>7. Sistema Lacustre Ejidos de Xochimilco y San Gregorio Atlapulco (management plan in development)</p> <p>8. Sistema Ripario de la Cuenca y Estero de San José del Cabo.¹¹</p> <ul style="list-style-type: none"> • The Management Conservation Program of Biosphere Reserve Mapimi (2006 by CONABIO) has two aims relating to IAS: one, to prevent the introduction and spread of alien species in the reserve; and two, to decrease the populations of alien species and pests through the implementation of eradication programs that do not cause impacts on other species.
Human health	<ul style="list-style-type: none"> • The relevant authorities are collaborating with the North American Plant Protection Organization and the Security and Prosperity Partnership of North America to address the multiple problem of IAS.³ • The Phytosanitary Alert System (PAS) of the North American Plant Protection Organization provides up-to-date information on pest situations of significance to North America. This system is intended to facilitate awareness, detection, prevention and management of exotic species in North America. The PAS provides this information in two ways: <ul style="list-style-type: none"> 1) Official Pest Reports 2) Unofficial Alerts
Economic	<ul style="list-style-type: none"> • LGEEPA Art. 85 "(r)egulates the imports, exports or movement within the national territory of foreign species that present a threat to Mexican wildlife.⁴ • LGVS "(r)efers to the damage caused by feral populations on wildlife, gives responsibilities [<i>sic</i>] for the establishment of sanitary and control measures and restricts the use of exotic species to confined environments."⁴

Table 2 Actions on IAS in cooperation with other countries

Agreement/ Organization	Countries/ Member	Action
Trilateral Committee for Wildlife and Ecosystem Conservation and Management	In 1996, Mexico, the US and Canada signed a Memorandum of Understanding which established the Trilateral Committee for the Conservation of Wildlife Management and	<ul style="list-style-type: none"> • Presentation of National Strategy against IAS, as well as the national program for the prevention and control of West Nile Virus at the Plenary Session on Invasive Species in Albuquerque, New Mexico in 2003. The plenary session brought together members of CONABIO, the SEMARNAT, and environmental authorities from the United States and Canada to present their countries' respective approaches to tackling IAS as well as identify priority areas for all three nations.⁵

<p>North American Free Trade Agreement, Commission for Environmental Cooperation</p>	<p>Ecosystems.⁸ Canada, Mexico and the United States</p>	<ul style="list-style-type: none"> • SERMANAT, CONABIO, and the Commission for Environmental Cooperation (CEC) are collaborating on a project for guidelines for the introduction of IAS and their pathways “with the aim of developing a trilateral approach to certain species and routes of introduction. This project aims to serve as a basis for countries from North America to develop legal and policy frameworks that are consist with each other.” The three objectives of the project are the development of common guidelines for risk analysis; the exchange of information and information systems; and capacity building through exchange of technical expertise and scientific knowledge.³ • Preventing the Introduction and Spread of Aquatic Invasive Species in North America: Workshop Proceedings 28–30 March 2001. Summary of Workshop report. • Trinational Alien Invasive Species Project mandated the CEC to formulate the Trinational Aquatic Invasive Species Risk Assessment Guidelines and test them. Thus the CEC produced a report entitled the Trinational Aquatic Invasive Species Risk Assessment Guidelines for Aquatic Invasive Speices: Test Cases for the Snakeheads (<i>Channidae</i>) and Armored Catfish (<i>Loricariidae</i>) in North American Inland Waters. These Guidelines will serve as a tool to North American resource managers who are evaluating whether or not to introduce a non-native species into a new ecosystem. Guidelines provide a framework where scientific, technical, and other relevant information can be organized into a format that is understandable and useful to managers and decision makers.
<p>The InterAmerican Association for Environmental Defense</p>	<p>Argentina: CEDHA (Center for Human Rights and Environment) Canada: Ecojustice Chile: FIMA (Fiscalía del Medio Ambiente) Costa Rica:</p>	<ul style="list-style-type: none"> • AIDA and Mexican Organizations Succeed in Protecting Marine Ecosystems Threatened by Exotic Species: In a victory for marine ecosystem protection, AIDA and Mexican environmental groups recently convinced the Mexican government to shut down an aquaculture plant because its cultivation of an exotic species threatened marine life in the Gulf

	<p>CEDARENA (Environmental and Natural Resources Law Center) JPN (Justice for Nature) Ecuador: ECOLEX (Organization for Environmental Law and Management) Mexico: CEMDA (The Mexican Environmental Law Center) Peru: SPDA (The Peruvian Society for Environmental Law) United States: Earthjustice</p>	<p>of California, and conflicted with national and international laws. This is the first time that Mexico has referred to international law in making this type of decision. With this precedent, it is now more likely that the government will ensure compliance with international law in similar cases, strengthening protection of marine and coastal ecosystems throughout Mexico.</p>
<p>Cuzco Declaration on Access to Genetic Resources, Traditional Knowledge and Intellectual Property Rights of the countries Megadiversity</p>	<p>Bolivia, Brasil, China, Colombia, Costa Rica, Ecuador, Filipinas, India, Indonesia, Kenia, Malasia, México, Perú, Sudáfrica and Venezuela</p>	<ul style="list-style-type: none"> Doesn't mention IAS directly but recognizes the commitment to achieving the objectives the Convention on Biological Diversity.
<p>Inter-American Biodiversity Information Network</p>	<p>34 Focal Points and NGO representatives form the IABIN Council. Focal Points are formally designated by governments through the country's Permanent Mission to the Organization of American States.</p>	<ul style="list-style-type: none"> The Invasive Species Information Node has formed partnerships with international organizations such as the Global Invasive Species Programme (GISP) and The World Conservation Union's Invasive Species Specialist Group (IUCN-ISSG), and provides the US lead for the Invasives Information Network of the Inter-American Biodiversity Information Network, I3N. The ISIN provides representation at international invasive species conferences and contributes to the development of tools for invasive species information management such as the IABIN Invasives Information Network's I3N Cataloguer and I3N Database on Invasive Alien Species. The NBII ISIN also recently hosted the first meeting of the Global Invasive Species Information Network (GISIN) with funding support from the U.S. Department of State Bureau of Oceans

		and International Environmental and Scientific Affairs.
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Case Studies

[THE CARRIZO GIANT, INVASIVE SPECIES OF RIPARIAN ECOSYSTEMS](#)¹²

José Juan Flores Maldonado, et al.

Biodiversitas

(Article in Spanish)

This article reviews the actual and potential impacts of the invasive species carrizo giant (*Arundo donax*) on riparian ecosystems. Unfortunately, this species is widely distributed in hydrological networks of throughout Mexico. One of the competitive advantages of *Arundo donax*, with regard to native plants, is its great potential for growth and high biomass productivity, which characterizes it as a species with a great range of development around the planet. Control and management techniques of this historic invasive have been carried out in isolation, resulting in the reed effectively invading the riparian landscapes of almost all rivers. As such, the control of *Arundo donax* should be considered on multiple fronts the first being the prevention of this invasive in places where it has not been detected.

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