

Research needs expressed in the Decisions of the Conference of the Parties to the Convention on Biological Diversity: Cross-Cutting Issue: Invasive Alien Species

Alien species that become invasive are considered to be a main direct driver of biodiversity loss across the globe. In addition, alien species have been estimated to cost our economies hundreds of billions of dollars each year (<http://www.cbd.int/invasive/default.shtml>).

Cited Decisions that express research needs are V/8, VI/23, VIII/3, VIII/27, IX/4, XII/16, XII/17, XIII/13 and XIV/11, also checked were Decisions VII/13 and X/38.

Comment: Decision VI/23 derives text directly from Decision V/8 (Guiding principles). In order to avoid duplication only the more recent Decision VI/23 is cited where the text is taken from Decision V/8.

Direct research needs

Decision	Paragraph	Chapeau / Heading	Text	Source http://www.cbd.int/decisions/
VI/23	Para 24	The Conference of the Parties	<p>Urges Parties, Governments and relevant organizations, at the appropriate level, with the support of relevant international organizations to promote and carry out, as appropriate, research and assessments on:</p> <p>The characteristics of invasive species and the vulnerability of ecosystems and habitats to invasion by alien species, and the impact of climate change on these parameters;</p> <p>The impact of alien species on biological diversity;</p> <p>Analysis of the importance of various pathways for the introduction of invasive alien species;</p> <p>The socio-economic implications of invasive alien species particularly the implications for indigenous and local communities;</p> <p>The development of environmentally benign methods to control and eradicate invasive alien species, including measures for use in quarantine and to control fouling of ship hulls;</p> <p>The costs and benefits of the use of biocontrol agents to control and eradicate invasive alien species;</p> <p>Means to enhance the capacity of ecosystems to resist or recover</p>	cop-06.shtml?m=COP-06&id=7197

			<p>from alien species invasions; Priorities for taxonomic work through, <i>inter alia</i>, the Global Taxonomy Initiative; Criteria for assessing risks from introduction of alien species to biological diversity at the genetic, species and ecosystem levels; The use of the traditional knowledge of indigenous and local communities in the development and implementation of measures to address invasive alien species, in accordance with Article 8(j) of the Convention;</p>	
VI/23	Annex I Guiding Principle 5	Guiding principles for the prevention, introduction and mitigation of impacts of alien species.	<p>In order to develop an adequate knowledge base to address the problem, it is important that States undertake research on and monitoring of invasive alien species, as appropriate. These efforts should attempt to include a baseline taxonomic study of biodiversity. In addition to these data, monitoring is the key to early detection of new invasive alien species. Monitoring should include both targeted and general surveys, and benefit from the involvement of other sectors, including local communities. Research on an invasive alien species should include a thorough identification of the invasive species and should document: (a) the history and ecology of invasion (origin, pathways and time-period); (b) the biological characteristics of the invasive alien species; and (c) the associated impacts at the ecosystem, species and genetic level and also social and economic impacts, and how they change over time.</p>	<p>cop-06.shtml?m=COP-06&id=7197</p>
VIII/27	Para 46	The Conference of the Parties	<p>Encourages relevant international and regional organizations, including the Future Harvest (CGIAR) centres, Botanic Gardens Conservation International and the International Union of Forestry Research Organizations, as well as professional societies, to develop codes of practice for preventing and minimizing the risk of introduction and spread of invasive alien species associated with scientific-research activities, and to carry out risk assessments as appropriate on proposed species introductions associated with such scientific-research activities, recognizing the need to avoid duplication of efforts, and <i>encourages</i> the Global Invasive Species Programme to review and make available existing information in this regard.</p>	<p>cop-08.shtml?m=COP-08&id=11041</p>

IX/4	Para 24	The Conference of the Parties	<i>Invites</i> Parties, other Governments, and relevant research organizations to study the impact of other drivers, in particular, land use change, climate change adaptation and mitigation activities, on the introduction, establishment and spread of invasive alien species, and their related socio-economic, health and environmental impacts;	cop/?id=11647
XII/16	Para 4	The Conference of the Parties	<i>Requests</i> the Executive Secretary, in collaboration with [...] relevant organizations, to explore ways and means to address the risks associated with trade in wildlife introduced as pets, aquarium and terrarium species, and as live bait and live food;	doc/?meeting=cop-12
XIII/13	Para 4	The Conference of the Parties	<i>Encourages</i> Parties, other Governments and relevant organizations, including research organizations, to explore, develop and apply ways and means to promote changes in the behaviour of individuals, in particular, consumers and businesses engaged in the wildlife trade, so as to reduce the risks to biodiversity associated with legal trade, and prevent instances of illegal trade, in wildlife, including through engagement with the social sciences and the use of social media in targeted awareness campaigns, and through cooperation with wildlife trade organizations;	decisions/cop/?m=cop-13
XIV/11	Para 12	The Conference of the Parties	<i>Recognizes</i> that further work on the impacts of invasive alien species on the social aspects, economic and cultural values of indigenous peoples and local communities is imperative;	decisions/cop/?m=cop-14

Indirect research needs

Decision	Paragraph	Chapeau / Heading	Text	Source
V/8	Part 1.3	Case-studies should include the following sections:	Description of the problem (a) Location of the case-study (b) History (origin, pathway and dates, including time-period between initial entry/first detection of alien species and development of impacts) of introduction(s) (c) Description of the alien species concerned: biology of the alien species (the scientific name of species should be indicated if possible) and ecology of the invasion(s) (type of and potential or actual impacts on biological diversity and ecosystem(s) invaded or threatened, and stakeholders involved) (d) Vector(s) of invasion(s)	cop-05.shtml?m=COP-05&id=7150

			<p>(e.g. of deliberate importation, contamination of imported goods, ballast water, hull-fouling and spread from adjacent area. It should be specified, if known, whether entry was deliberate and legal, deliberate and illegal, accidental, or natural.) (e) Assessment and monitoring activities conducted and methods applied, including difficulties encountered (e.g. uncertainties due to missing taxonomic knowledge)</p> <p>Options considered to address the problem</p> <p>(a) Description of the decision-making process (stakeholders involved, consultation processes used, etc.) (b) Type of measures (research and monitoring; training of specialists; prevention, early detection, eradication, control/containment measures, habitat and/or natural community restoration; legal provisions; public education and awareness) (c) Options selected, time-frame and reasons for selecting the options (d) Institutions responsible for decisions and actions.</p> <p>Implementation of measures, including assessment of effectiveness (a) Ways and means set in place for implementation (b) Achievements (specify whether the action was fully successful, partially successful, or unsuccessful), including any adverse effects of the actions taken on the conservation and sustainable use of biodiversity (c) Costs of action</p> <p>Lessons learned from the operation and other conclusions Further measures needed, including transboundary, regional and multilateral cooperation (b) Replicability for other regions, ecosystems or groups of organisms (c) Information compilation and dissemination needed.</p>	
VI/23	Annex I Guiding Principle 4	Guiding principles for the prevention, introduction and	To help States minimize the spread and impact of invasive alien species, States should identify, as far as possible, species that could become invasive and make such information available to other States.	cop-06.shtml?m=COP-06&id=7197

VI/23	Annex I Guiding Principle 11	mitigation of impacts of alien species.	Common pathways leading to unintentional introductions need to be identified and appropriate provisions to minimize such introductions should be in place. Sectoral activities, such as fisheries, agriculture, forestry, horticulture, shipping (including the discharge of ballast waters), ground and air transportation, construction projects, landscaping, aquaculture including ornamental aquaculture, tourism, the pet industry and game-farming, are often pathways for unintentional introductions.	
VIII/3	Annex I Para 10	Additional planned activities.	Databases of invasive alien species and occurrences of invasions , developed and/or expanded, and made widely available; Working identification keys for known invasive alien species associated with key invasion pathways produced and disseminated; Working lists of organisms in areas that are exposed or susceptible to key invasion pathways produced and utilized by local monitoring authorities.	cop-08.shtml?m=COP-08&id=11015
VIII/27	Para 19	The Conference of the Parties	Invites relevant bodies and institutions , such as the Global Invasive Species Programme, the Working Group on Ballast and Other Shipping Vectors of the International Council for the Exploration of the Sea, and the Working Group on Non-Indigenous Species of the North Pacific Marine Science Organization, to further study conveyance pathways for introduction and spread of invasive alien species, and to conduct risk assessments for potential future introductions.	cop-08.shtml?m=COP-08&id=11041
VIII/27	Para 48		<i>Emphasizes the need for taxonomic studies to deal with invasive alien species</i>	
VIII/27	Para 55		<i>Urges Parties, other Governments and relevant organizations to evaluate and take appropriate measures</i> (e.g., develop guidance or codes of practice regarding the trade and use of biocontrol agents) at national, regional and global levels to address the potential risks of biocontrol agents as invasive alien species;	

XII/16	Annex, Para 11		<p>When planning to import or transport pets, aquarium and terrarium species, live bait and live food to a country, or distinct biogeographical area within a country, where they are non-native, States, relevant organizations or the industry, should undertake a risk assessment. The risk assessment may draw on previously conducted assessments and other available information. The risk assessment should consider, <i>inter alia</i>:</p> <p>a) The probability of escape of organisms, at any stage of their life cycle, from confined conditions (including through accidental or careless release);</p> <p>b) probability of establishment and spread of the species;</p> <p>c) The impacts of establishment and spread of the species on biodiversity, including hybridization with native species leading to loss of genetic diversity, and related impacts on productive activities and human health and the significance of these impacts;</p> <p>d) The risk regarding spread of pathogens and parasites;</p>	<p>doc/?meeting=cop-12</p>
XII/17	Para 6	The Conference of the Parties	<p><i>Calls upon</i> Parties and <i>invites</i> other Governments to consider:</p> <p>e) Identifying and prioritizing pathways of introduction of invasive alien species, taking into account, <i>inter alia</i>, information on the taxa, the frequency of introduction, and the magnitude of impacts, as well as climate change scenarios;</p> <p>i) Taking appropriate actions by making use of the full range of measures for early detection, control and/or eradication, including biocontrol, with appropriate risk analysis, and of decision-support tools and guidance;</p> <p>j) Prioritizing actions at all levels, including national, subnational and local levels, to address invasive alien species in particularly vulnerable ecosystems;</p>	<p>doc/?meeting=cop-12</p>
XII/17	Para 9	The Conference of the Parties	<p><i>Requests</i> the Executive Secretary:</p> <p>c) To develop in collaboration with relevant organizations [...] decision-support tools for assessing and evaluating the social, economic and ecological consequences of invasive alien species; cost-benefit analyses for eradication, management and control measures; and for examining the impacts of climate change and land-use change on biological invasions;</p>	<p>doc/?meeting=cop-12</p>

XIII/13	Para 7b	The Conference of the Parties	<i>Invites</i> other Governments, relevant international organizations... to review the risk of biological invasions, and associated sanitary and phytosanitary risks, posed by some forms of distance selling and, as appropriate, endeavour to develop suitable measures and guidance to minimize the risks of introduction of invasive alien species, consistent with international obligations;	decisions/cop/?m=cop-13
XIII/13	Para 11c	The Conference of the Parties	<i>Invites</i> Parties and other Governments to collect information, as appropriate, on the movement of invasive alien species attached to sea containers, in addition to those with the cargo transported within the sea containers, as well as on bio-fouling and ballast water...	decisions/cop/?m=cop-13
XIII/13	Para 18	The Conference of the Parties	<i>Invites</i> Parties and other Governments to consider the balance between the environmental, social and economic costs and benefits related to invasive alien species and remedial actions, in decision making on introduction, eradication, containment, mitigation or control of invasive alien species, making use, as appropriate, of the Methodological assessment of scenarios and models of biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services;	decisions/cop/?m=cop-13
XIII/13	Para 25	The Conference of the Parties	<i>Invites</i>the scientific community ...to continue developing strategies and take actions to achieve Aichi Biodiversity Target 9	decisions/cop/?m=cop-13
XIV/11	Annex I Para 34		States should conduct monitoring of invasive alien species which can unintentionally arrive in their territories, particularly in susceptible areas (e.g. ports, cross-docking and warehousing facilities, off-dock container yards, connected roads and railways) where their entry, establishment and early stage of spreading may occur.	decisions/cop/?m=cop-14