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Research needs expressed in the Decisions of the Conference of the Parties to the Convention on Biological Diversity: Thematic Work Programme on Inland Waters Biodiversity

Inland water ecosystems are often extensively modified by humans, more so than marine or terrestrial systems, and are amongst the most threatened ecosystem types of all (http://www.cbd.int/waters/default.shtml). Physical alteration, habitat loss and degradation, water withdrawal, overexploitation, pollution and the introduction of invasive alien species are the main threats to these ecosystems and their associated biological resources.

The cited Decision that express research needs are VI/8, VII/4 (where the revised work programme is annexed) and X/28, also checked were Decisions VI/2, VIII/20 and IX/19.

Direct research needs

Decision	**Paragraph**	**Chapeau / Heading**	**Text**	**Source** http://www.cbd.int/decisions/
VII/4	Annex I Programme Element 1 Goal 1.1 Activity 1.1.3	Goal 1.1: To integrate the conservation and sustainable use of biological diversity into all relevant sectors of water-resource and river-basin management, taking into account the ecosystem approach.	**Identify** and remove the **sources**, or reduce the impacts, **of water pollution** (chemical, thermal, microbiological or physical) on the biological diversity of inland waters.	cop-07.shtml?m=COP-07&id=7741
VII/4	Annex I	Goal 1.3: To	**Identify nationally priority candidate inland water ecosystems**	cop-07.shtml?m=COP-

	Programme Element 1 Goal 1.3 Activity 1.3.2	enhance the conservation status of inland water biological diversity through rehabilitation and restoration of degraded ecosystems and the recovery of threatened species.	**and/or sites for rehabilitation or restoration** and proceed to undertake such works, as resources allow. **In identifying potential candidate sites, consider the relative conservation status of the threatened species** involved, **and the potential gains for the overall ecosystem functioning, productivity and "health"** within each drainage basin.	07&id=7741
VII/4	Annex I Programme Element 1 Goal 1.3 Activity 1.3.3		**Identify** nationally and then act, as appropriate, to improve **the conservation status of threatened species, including migratory species**, reliant on inland water ecosystems, (see activities 1.2.3 and 1.2.4), taking into account the programme of work on restoration and rehabilitation of degraded ecosystems being developed by the Conference of the Parties as part of its multi-year programme of work up to 2010.	
VII/4	Annex I Programme Element 3 Goal 3.1 Activity 3.1.1	Goal 3.1: To develop an improved understanding of the biodiversity found in inland water ecosystems, how these systems function, their ecosystem goods and services and the values they can provide.	**Encourage**, and where possible support, **applied research to gain an improved understanding of the status, trends, taxonomy and uses of biological diversity** in inland water ecosystems, including transboundary systems where applicable.	cop-07.shtml?m=COP-07&id=7741
VII/4	Annex I Programme Element 3 Goal 3.1 Activity 3.1.2		**Promote research to improve the understanding of the social, economic, political and cultural drivers within civil society that are directly impacting on the conservation and sustainable use** of the biological diversity of inland waters.	
VII/4	Annex I Programme Element 3 Goal 3.1 Activity 3.1.3		In line with the Global Taxonomy Initiative (GTI) **encourage studies aimed at improving the understanding of the taxonomy** of the biological diversity of inland water ecosystems.	
VII/4	Annex I Programme Element 3 Goal 3.1 Activity 3.1.4		**Support efforts to achieve international consistency and interoperability of taxonomic nomenclature, databases and metadata standards**, as well as data-sharing policies.	
VII/4	Annex I	Goal 3.2: To	**Identify the most cost-effective approaches and methods to**	cop-07.shtml?m=COP-

	Programme Element 3 Goal 3.2 Activity 3.2.2	develop, based on inventories, rapid and other assessments applied at the regional, national and local levels, an improved understanding of threats to inland water ecosystems and responses of different types of inland water ecosystems to these threats.	**describe the status, trends and threats** of inland waters and indicate their condition in functional as well as species terms.	07&id=7741
VII/4	Annex I Programme Element 3 Goal 3.2 Activity 3.2.3		**Suitable organisms should be identified** as being particularly important in the assessment of inland water ecosystems. **In view** of the great economic importance of some groups (e.g. inland water fish species and aquatic macro-invertebrates), and **of the large gaps in taxonomic knowledge for many species,** capacity-building in taxonomy should focus on inland water biodiversity of economic as well as ecological importance.	
VII/4	Annex I Programme Element 3 Goal 3.2 Activity 3.2.8		**Develop means of identifying and protecting groundwater recharge areas, groundwater aquifers, and surface waters fed by groundwater discharges**.	
X/28	Para 30	The Conference of the Parties	*Notes* the **importance of robust data on inland water spe**cies in determining the status and trends of these ecosystems;	cop/?id=12294
X/28	Para 31	The Conference of the Parties	*Urges* Parties and other Governments to **support strengthened capacity for the monitoring of the biodiversity of inland water ecosystems**, including at the species level;	cop/?id=12294
X/28	Para 32	The Conference of the Parties	*calls for* further policy-relevant **scientific assessments of the relationships between biodiversity, hydrology, ecosystem services and sustainable development,** in particular regarding, *inter alia*: **The relationships between the carbon and water cycles**, and policies and management interventions in each, and the ability of biodiversity to underpin both cycles; and The impact of the **direct anthropogenic use of water on terrestrial biodiversity, and *vice versa***, including, *inter alia*, fluxes between soil moisture, groundwater and evapo-transpiration of plants, and shifts in local and regional precipitation, taking into account any additional water-induced stresses on ecosystems through climate change;	cop/?id=12294

Indirect research needs

Decision	Paragraph	Chapeau / Heading	Text	Source http://www.cbd.int/decisions/
VI/8	Annex I Part II Planned Activity 11	Inland waters biological diversity.	For the purposes of the GTI targeted activities in rapidly increasing worldwide **knowledge of freshwater fish and invertebrates are proposed as high priority**.	cop-06.shtml?m=COP-06&id=7182
VII/4	Annex I Programme Element 1 Goal 1.1 Activity 1.1.2	Goal 1.1: To integrate the conservation and sustainable use of biological diversity into all relevant sectors of water-resource and river-basin management, taking into account the ecosystem approach.	**Develop effective management strategies to maintain or improve the sustainability of inland water ecosystems**, including those identified as most stressed and facilitate a minimum water allocations to the environment to maintain ecosystem functioning and integrity. In so doing, consideration should also be given to the likely impacts of climate change and desertification, and factor in suitable mitigation and adaptive management approaches.	cop-07.shtml?m=COP-07&id=7741
VII/4	Annex I Programme Element 1 Goal 1.1 Activity 1.1.9		**Assess the linkages between inland water ecosystems and climate change** and the management options for mitigation of and adaptation to climate change.	
VII/4	Annex I Programme Element 1 Goal 1.2 Activity 1.2.2	Goal 1.2: To establish and maintain comprehensive, adequate and representative systems of protected inland water ecosystems within the framework of integrated catchment/watershed /river-basin management.	**Undertake** the necessary **assessments to identify priority sites** for inclusion into a system of protected inland water ecosystems, applying in particular the guidance on operationalizing annex I of the Convention on Biological Diversity and its harmonized application with the criteria for identifying Wetlands of International Importance under the Ramsar Convention.	cop-07.shtml?m=COP-07&id=7741
VII/4	Annex I Programme Element 1 Goal 1.2 Activity 1.2.3		As part of activity 1.2.2 above, **identify sites important for migratory species dependent** on inland water ecosystems.	

VII/4	Annex I Programme Element 2 Goal 2.3 Activity 2.3.1	Goal 2.3: To provide the appropriate incentives and valuation measures to support the conservation and sustainable use of inland water biological diversity, and to remove, or reform appropriately, any perverse incentives opposing such conservation and sustainable use of ecosystems.	**Review the range and effectiveness of national incentives, subsidies, regulations, and other relevant financial mechanisms**, which can affect inland water ecosystems, whether adversely or beneficially.	
VII/4	Annex I Programme Element 2 Goal 2.3 Activity 2.3.3		**Undertake** comprehensive **valuations of the goods and services** of inland water biodiversity and ecosystems, including their intrinsic, aesthetic, cultural, socio-economic and other values, in all relevant decision-making across the appropriate sectors.	cop-07.shtml?m=COP-07&id=7741
VII/4	Annex I Programme Element 3 Goal 3.2 Activity 3.2.1	Goal 3.2: To develop, based on inventories, rapid and other assessments applied at the regional, national and local levels, an improved understanding of threats to inland water ecosystems and responses of different types of inland water ecosystems to these threats.	In accordance with the priorities set down in national biodiversity strategies and action plans, **undertake comprehensive national inventories and assessments of inland water biological diversity**, which may be regarded as important in accordance with the terms of Annex I of the Convention. Furthermore, **undertake assessments of threatened habitats and species, and conduct inventories and impact assessments of alien species in inland water ecosystems** using the guidelines adopted by the Conference of the Parties in decision VI/7 A. The transboundary nature of many inland water ecosystems should be fully taken into account in assessments, and it may be appropriate for relevant regional and international bodies to contribute to such assessments.	
VII/4	Annex I Programme Element 3 Goal 3.2 Activity 3.2.6		**Promote the development of criteria and indicators for the evaluation of the impacts** on inland water ecosystems **from both physical infrastructure projects and watershed activities**, including, *inter alia*, agriculture, forestry, mining and physical alteration, taking into consideration the natural variability of water conditions.	cop-07.shtml?m=COP-07&id=7741

VII/4	Annex I Programme Element 3 Goal 3.3 Activity 3.3.1	Goal 3.3: To ensure projects and actions with the potential to impact negatively on the biological diversity of inland water ecosystems are subjected, in accordance with national legislation and where appropriate, to suitably rigorous impact assessments.	**Apply environmental impact assessments on water-development projects, aquaculture and watershed activities**, including agriculture, forestry and mining, and best predictions **with well designed sampling schemes** that can adequately distinguish the effects of anthropogenic activities from natural processes; **Incorporate**, where appropriate, **environmental flow assessments into impact assessment processes** for any projects with the potential to have negative effects on inland water ecosystems, and also **undertake baseline ecosystem assessments** in the planning phase to ensure that the necessary basic data will be available to support the environmental impact assessment process and the development of effective mitigation measures if necessary.	cop-07.shtml?m=COP-07&id=7741
VII/4	Annex I Programme Element 3 Goal 3.3 Activity 3.3.3		**For transboundary inland water ecosystems, undertake**, where feasible and appropriate and by agreement between the Parties concerned, **collaborative impact and environmental flow assessments** when applying the Convention's guidelines for incorporating biodiversity related issues into environmental impact assessment legislation and/or processes and in strategic environmental assessment.	
VII/4	Annex I Programme Element 3 Goal 3.4 Activity 3.4.1	Goal 3.4: To introduce and maintain appropriate monitoring arrangements to detect changes in the status and trends of inland water biodiversity.	**Introduce appropriate monitoring regimes** based on the Convention on Biological Diversity and other guidance for priority inland water biodiversity and ecosystems in the first instance, taking into account the implementation of decisions VI/7 A-C on identification, monitoring, indicators and assessments and possible adoption by the Conference of the Parties at its seventh meeting of principles for developing and implementing national-level monitoring and indicators.	cop-07.shtml?m=COP-07&id=7741
X/28	Para 18	The Conference of the Parties	*Requests* the Executive Secretary, in partnership with relevant organizations […] to continue **to investigate ways to reduce the negative impacts of agricultural water use and drainage on ecosystems** and to enhance their ability to provide water for food production for present and future generations	cop/?id=12294