



## Advances in hydrobiology

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### DESCRIPTION

It's extensively recognized that freshwater biodiversity and territories are increasingly being affected by human activities. Available data with 123 freshwater beast species recorded as extinct since 1900. All estimates of biodiversity loss are conservative considering the lack of knowledge for multiple groups of species and for extended areas in the tropics and high latitudes. Accordingly, the number of threatened species is expected to be much higher. In addition to species loss, also habitat declination, eutrophication and species preface affect freshwater bodies worldwide. Despite the signs of speedy and destructive changes in freshwater ecosystems, freshwater biodiversity remains of low precedence in global conservation initiatives carried by governmental and intergovernmental association.

For exemplification, lakes and their watersheds are dramatically under represented both in protected areas and in conservation measures although they're experiencing serious declination. The lack of conservation and operation strategies to avert damaging changes in freshwater territories occurring around the globe increases the potentiality for endless loss and ignorance of much of our earth's rich aquatic biota. Scientists are faced with the challenge to give baseline studies on freshwater biodiversity at regional and global scales to international policy makers. Indeed, monitoring the situation and trends of freshwater biodiversity is essential to quantify impacts of human activities on freshwater systems and to improve freshwater biodiversity conservation. Estimating global trends for freshwater biodiversity will also be a critical asset for operation strategies considering that studies on climate change and water resources and data operation systems are presently being developed at a global scale.

Current systems on the assessment of freshwater biodiversity focus substantially on a few better known groups, similar as fish or molluscs or identify cornerstone species or endemic freshwater systems for conservation purposes. Our aim is to complete these existing systems by giving quantitative estimates of species numbers for all freshwater groups on each continent and major eco-regions. The results should highlight gaps and help prioritising the groups and geographical areas where additional examinations are needed.

The first phase of the project has been enforced from September 2002 to June 2003 and has addressed only freshwater animal species. The project consisted of compiling existing data from literature, web sites and museum collections and reporting the most recent number of known species for each group; addressing scientific experts' estimate of species number. The results of this first phase are reported now and were also presented at the conference on aquatic biodiversity past present future, an International scientific meeting held in Antwerp, Belgium, in August 2003. An alternate project phase should address the plant, fungi and algal species.

Fresh water species the first problem encountered in assessing freshwater biodiversity is the actual description of a freshwater species. Indeed, many animal species depend upon freshwater habitats in many different ways, some species depend on freshwater for all stages of their life cycle, i.e. many freshwater fishes except diadromous species that resettle between marine and freshwater environments, freshwater crustaceans or rotifers. Some species need freshwater to complete part of their life cycle, similar as many amphibians and insects, some species need humid habitats similar as some Collembola. Some species are closely dependent on freshwater for food or habitat such as utmost of the so called aquatic

