

water for life

Fresh water is an essential resource, both for human populations and as home to the greatest concentration of life on Earth. Fresh water covers less than 1 percent of our planet's surface, but provides a home to about 126,000 species – 7 percent of all the species known to science.

These species provide services of enormous importance to humanity. For example, freshwater mollusks, numbering 5,000 species worldwide, filter pollutants and silt from the water, and the 15,000 fish species found only in fresh water are tremendously important as a food source and for recreation and commerce. One estimate placed the global value of all freshwater services at \$7 trillion a year, or around 15 percent of the total estimated value of the world's ecosystem services.

However, the world's freshwater systems and their myriad species are under assault partly because this value is not properly recognized in economic and planning decisions. Threats ranging from pollution to habitat destruction and from overfishing to the introduction of alien species all impact the ability of freshwater ecosystems to deliver services for people, and many of these impacts are likely to be compounded by emerging climate change. For these and other reasons, scientists believe that freshwater species are at a significantly higher risk of extinction than terrestrial or marine species.

global freshwater biodiversity assessment

The Strategy

Better management of freshwater resources is needed to ensure that water is available to human societies and to the freshwater biodiversity that provides so many additional services to humans. However, effective management requires solid baseline data on the status of the world's freshwater species.

To meet this critical need, scientists are conducting a Global Freshwater Biodiversity Assessment to document, for the first time, the extinction threat for key freshwater species. The assessment uses the Red List criteria developed by IUCN (International Union for Conservation of Nature), the most widely accepted global standards for discerning extinction threat. The assessment will be led by a partnership of organizations with demonstrated experience and expertise in biodiversity assessment – IUCN and its Species Survival Commission, Conservation International, and NatureServe.

The Global Freshwater Biodiversity Assessment will evaluate the conservation status of freshwater fishes, mollusks, crabs, odonates (dragonflies and damselflies), and selected groups of freshwater plants, totalling about 28,000 species. These species provide a representative view of the ecology and conservation status of freshwater ecosystems, especially when combined with the Red List status of freshwater mammals, birds, crocodiles, turtles, and amphibians, which have already been assessed. Many of the selected species are also good indicators of overall environmental health and may be used to evaluate long- and short-term environmental changes in aquatic and neighboring terrestrial habitats.

The results of the assessments can be used to inform planning and conservation decisions by identifying regions with species of high vulnerability (i.e., levels of threat) and irreplaceability (i.e., levels of endemism) as well as by identifying species and entire ecosystems of high service value (i.e. supporting livelihoods and human well-being at a local to global level). Indeed, without these data, planning decisions will continue to favor development that does not take into account



impacts on biodiversity and the loss of valuable services provided to humans.

Each species assessment includes information on taxonomy, distribution, populations, habitat and ecology, utilization, livelihoods values, major threats, conservation measures, and risk of extinction. The collected distribution data for each species are converted into digital geospatial data. All data are distributed publicly through IUCN's Red List of Threatened Species (<http://www.iucnredlist.org>).

These data will be a much-needed addition to existing datasets for freshwater species that have already been assessed and will also provide an essential baseline for long-term monitoring of the status of freshwater biodiversity.

The Global Freshwater Biodiversity Assessment creates a network of global expertise by bringing together specialists with an interest in conservation of freshwater. The participating specialists are closely linked to IUCN's Species Survival Commission (a science-based network of some 7,500 volunteer experts from almost every country of the world). This network of specialists can help ensure that the outcomes of the Global Freshwater Biodiversity Assessment are disseminated to the stakeholders responsible for sustainable development of freshwater systems.

In addition, the expertise in these networks will enable us to train new experts and continue to build capacity for achieving conservation around the world.

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Funding Needs

The World Summit on Sustainable Development recognizes “the critical role biodiversity plays in overall sustainable development and poverty eradication and the fact that it is essential to our planet, human well-being and to the livelihood and cultural integrity of people.”

CI and IUCN are seeking \$5 million to complete the Global Freshwater Biodiversity Assessment. An investment in this effort will enable conservation actions and sustainable development that will benefit both human well-being and the many species that call fresh waters home.



OUR VISION

We imagine a healthy, prosperous world in which societies are forever committed to caring for and valuing nature, our global biodiversity, for the long-term benefit of people and all life on Earth.

OUR MISSION

Built upon a strong foundation of science, partnership and field demonstration, CI empowers societies to responsibly and sustainably care for nature, our global biodiversity, for the well-being of humanity.

**CONSERVATION
INTERNATIONAL**



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