FRESHWATER BIODIVERSITY – A HIDDEN RESOURCE UNDER THREAT

Diplacodes luminans - *Least Concern*

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How many freshwater species are there?

The diversity of species in freshwater habitats is disproportionately high as compared to other ecosystems. Freshwater habitats cover less than 1% of the world's surface, yet they provide a home for over 25% of all described vertebrates, more than 126,000 known animal species, and approximately 2,600 macrophyte plants.

Do freshwater species matter?

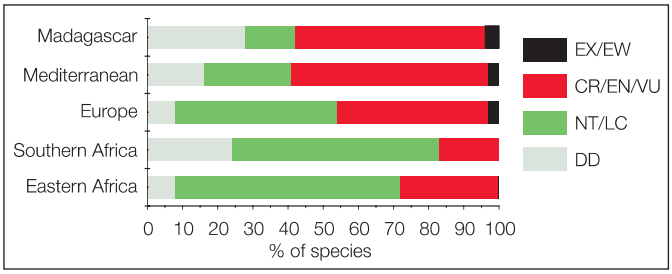
Freshwater ecosystems provide many important goods and services including the provision of food, clean water, building materials, and flood and erosion control. The livelihoods of many of the world's poorest communities are dependent on resources from freshwater ecosytems. The value of these goods and services has been calculated to be in the region of $70 billion - a figure equivalent to the GDP of some countries ranked as being in the top third of the world's economies.

Threats to freshwater species

Human population growth along with industrial and agricultural development has placed a massive strain on the world's freshwater systems. Threats such as high levels of water extraction, pollution, wetland drainage and river channelization, deforestation leading to sedimentation, introduced invasive species and over-harvesting have all had major impacts upon freshwater biodiversity. In addition climate change, increasing levels of water scarcity and development goals such as increasing access to clean drinking water and sanitation are all going to have major impacts upon freshwater systems in the future.

Filling the information gap

If we are to help mitigate the threats and better inform the development and conservation planning process, we need to know where freshwater species occur, how important they are for human livelihoods and ecosystem functioning, and how



Proportions of freshwater fish species by threat category in various regions.

threatened they are. To achieve this, information on species distributions, population status and trends, habitats and ecology, threats and utilization are collated and used to conduct assessments of extinction risk. The information is all made available on the IUCN Red List of Threatened Species™.

How much do we know?

There are an estimated 27,400 freshwater species of fish, molluscs, crabs, dragonflies and plants; these are the groups that IUCN and Conservation International decided to assess in their entirety as part of their Global Freshwater Biodiversity Assessment. Of these, only 6,000 species have been assessed so far at a global scale and included in the 2008 IUCN Red List, leaving over 21,000 species still to be assessed.

Regional status and distribution of freshwater species

IUCN has completed comprehensive regional freshwater biodiversity assessments for eastern Africa and southern Africa and ongoing assessments for the rest of Africa are to be completed in 2009. Regional assessments provide a comprehensive picture of the status of freshwater biodiversity.

They also allow for the basins that contain high numbers of species or threatened species to be identified. Lakes Malawi and Victoria, the lower Malagarasi drainage, Kilombero valley and the Western Cape in South Africa, contain some of the highest numbers of threatened species in southern and eastern Africa.

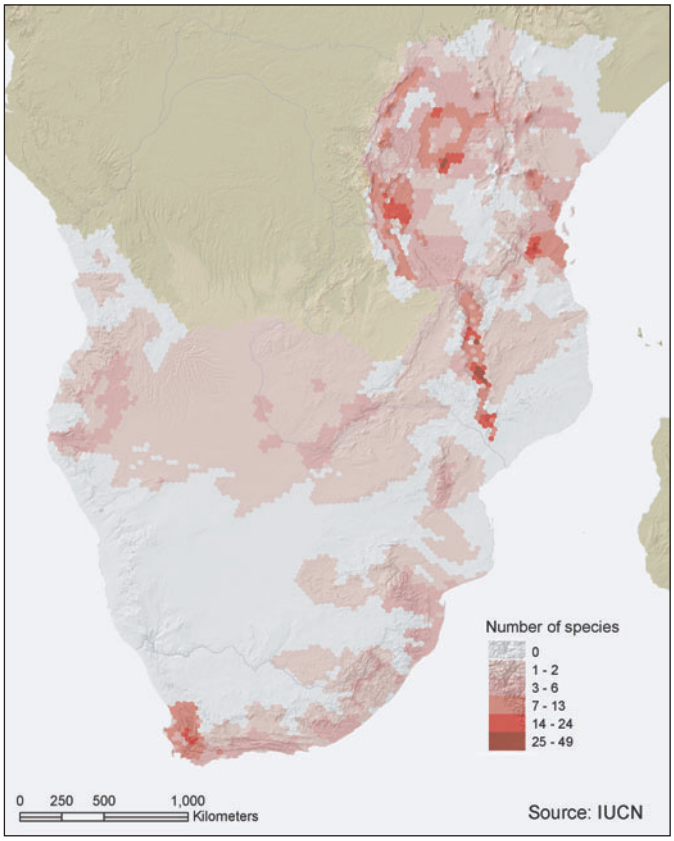
Key messages

- *Freshwater species are extremely threatened*, possibly more so than species in the marine and terrestrial systems.
- *Public awareness of the threat to freshwater species needs to be raised*. Freshwater species are largely unseen by the general public, are not often considered as charismatic, and their values to people not well recognized.
- *Freshwater species provide important ecosystem services*, including the provision of protein and supporting livelihoods for some of the world's poorest communities.
- *Management of water resources must take account of the requirements of freshwater species*. This approach is encapsulated within the Environmental Flows concept, which aims to ensure that there is enough water to maintain environmental, economic and social benefits.
- *Protected areas must be designed to protect freshwater species*, and employ the principles of catchment protection.

Snail harvesting. *© Kong Kim Sreng*

- There is a *need to support in-situ conservation actions* through initiatives capable of addressing immediate known impacts to threatened species.
- *Environmental Impact Assessments (EIAs) need to take better account of impacts to freshwater species.*
- *The lack of easily accessible information for many freshwater species needs to be rectified*. A significant proportion of freshwater species are listed as Data Deficient, hence increased field surveys combined with taxonomic training of local experts, and the publication of field guides are recommended.

Distribution patterns of threatened species for eastern and southern Africa.



For more information: www.iucn.org/redlist/