Science for Environment Policy
DG Environment News Alert Service
European Commission

26 April 2012

Less 'charismatic' species should not be forgotten in conservation

Land-dwelling and charismatic animals, such as birds and mammals, receive greater attention in conservation research than other species. How does this bias affect those that are not so well known or loved? A new study suggests that African species in freshwater habitats may suffer as a result.

Freshwater ecosystems face growing pressure from plans to develop irrigation and hydropower in Africa in the next decade. A thorough assessment of freshwater species in Africa was recently published by the International Union for Conservation of Nature (IUCN)[1] , which provided new data on around 5,000 species. It represents the most complete assessment of African freshwater species to date.

In its conclusion, the IUCN report stated that a lack of available information could no longer justify failure to include freshwater species in conservation and development planning. Using the newly available data, some of the researchers involved in the IUCN study, along with other colleagues, went on to examine the impact of the conservation bias towards more 'charismatic' species on African freshwater species.

It is sometimes argued that even a narrow focus in conservation research can provide information about patterns of diversity and threat that can be useful in conservation more broadly. However, this study, partly funded under the EU Project EuropeAid/ENV/2004-81917[2] and BioFresh projects[3], concluded that better known species were poor surrogates for many groups of freshwater species.

It based its analyses on distribution maps of 4,203 bird, mammal and amphibian species and 3,521 additional freshwater species. Maps were divided up into 7,079 river catchment areas. They revealed that patterns of diversity were similar between birds, mammals and amphibians, but not between these species and the freshwater species, such as crabs, fish and molluscs.

Protected area networks provide some indication of priorities in conservation planning. The researchers looked at the proportion of freshwater species covered by existing protected areas in Africa. The results revealed that protected areas encompassed more of the birds, mammals and amphibians in each river catchment area than crabs, fish and molluscs. Even among catchment areas where overall coverage was above 70%, coverage of aquatic species was no higher than 50%. The researchers say this suggests that conversation priorities and investment targets are based on research that does not adequately represent or benefit freshwater species.

As freshwater ecosystems contain 10% of all known species, their protection is crucial to achieving international conservation goals. The researchers argue that without concerted efforts to better protect freshwater species, it will be difficult to meet conservation targets laid out under the Convention on Biological Diversity's Strategic Plan for Biodiversity to 2020[4]. One goal of the Plan is to ensure that at least 17% of terrestrial and inland water areas are covered by protected areas.

The researchers say their study could be used to inform development that does not negatively affect inland water areas in Africa. Globally, efforts to understand and conserve freshwater species are still needed.

1. Darwall, W.R.T. *et al*. (Ed.). (2011). *The diversity of life in African freshwaters: under water, under threat. An analysis of the status and distribution of freshwater species throughout mainland Africa*. IUCN, Gland, Switzerland and Cambridge, UK, 1-346.
2. See:http://www.iucn.org/about/work/programmes/species/our_work/about_freshwater/what_we_do_freshwater/pan_africa_freshwater_ba/
3. BioFresh is supported by the European Commission under the Seventh Framework Programme. See: www.freshwaterbiodiversity.eu
4. See: www.cbd.int/sp/

Source: Darwall, W.R.T., Holland, R.A., Smith, K.G. *et al*. (2011). Implications of bias in conservation research and investment for freshwater species. *Conservation Letters* 4: 474-482.

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Theme(s): Biodiversity