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Mangrove-Dependent Animals Globally Threatened

July 7, 2009 — Substantial numbers of terrestrial vertebrates are restricted to mangrove forests. Many of these specialized species are listed as threatened by the International Union for the Conservation of Nature. Prospects for mangrove-restricted animals are bleak, because more than two percent of mangrove forests are lost each year.

More than 40 percent of a sample of amphibians, reptiles, mammals, and birds that are restricted to mangrove ecosystems are globally threatened with extinction, according to an assessment published in the July/August issue of *BioScience*. The study, by David A. Luther of the University of Maryland and Russell Greenberg of the Smithsonian Migratory Bird Center, was based on an extensive literature search and expert consultations.

The conclusions emphasize the vulnerability of animals that are dependent on a habitat rapidly being lost or degraded through coastal development, overexploitation, pollution, and changes in sea level and salinity.

Mangroves, which are salt-tolerant woody plants concentrated along coastal margins, generally in warm regions, have long been known to support many species of animals. Hundreds of vertebrates are sometimes found in mangroves, but Luther and Greenberg concentrated on the 69 terrestrial vertebrate species and subspecies that seem restricted to mangroves: 48 birds, 14 reptiles, 6 mammals, and 1 amphibian. These include several species with striking adaptations, such as specialized glands to excrete salt. The ground foragers among them feed primarily on crabs, but many of the birds feed on insects. For unclear reasons, mangrove-restricted species and subspecies are concentrated in Asia and Australia.

Between the early 1980s and 2001, between 19 and 35 percent of the world's mangrove forest area was lost. At this rate of loss--about 2 percent each year--mangroves could be extinct in 100 years. Only 27 of the terrestrial vertebrates that are dependent on mangroves have been assessed by the IUCN (International Union for the Conservation of Nature), and 13 of those are classified as threatened on the IUCN Red List, Luther and Greenberg report. They urge research aimed at predicting how continuing changes to mangrove forests are likely to affect the species found there: such information could guide attempts to conserve these specialized ecosystems.

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Mangrove swamp in Florida. (Credit: iStockphoto/Johann Helgason)



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1. David A. Luther and Russell Greenberg. **Mangroves: A Global Perspective on the Evolution and Conservation of Their Terrestrial Vertebrates**. *BioScience*, July/August

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