Land conversion and climate threaten land birds

June 5 2007

Land conversion and climate change have already had significant impacts on biodiversity and associated ecosystem services.Using future land-cover projections from the recently completed Millennium Ecosystem Assessment, Walter Jetz, David Wilcove, and Andrew Dobson have now evaluated how all of the world's 8,750 species of land birds may be affected by environmental change.

In their study published in *PLoS Biology*, they find that 950 to 1800 species may be imperiled by a combination of climate change and land conversion by 2100.

These projections are based on the assumption that birds will not dramatically shift their ranges in response to a changing climate, a process that would lessen the range contractions they predict. While climate change will be the principal driver of range contractions at higher latitudes, their projections reveal that land conversion (e.g., deforestation, conversion of grasslands to croplands, etc.) will have a much larger effect on species that inhabit the tropics.

Overall, in the near future, considerably more species may be imperiled by habitat loss because of anthropogenic land conversion rather than climate driven change. This is because birds in the tropics are especially diverse and tend to have small ranges, making them particularly vulnerable to extinction; whereas birds at higher latitudes are less diverse and tend to have large ranges.

The irony here is that the protection of tropical forests is also one of the strongest buffers against future climate change. A vastly expanded reserve network in the tropics, coupled with more ambitious goals to reduce greenhouse gas emissions and monitor biodiversity impacts, will be needed to minimize global extinctions.

Source: Public Library of Science