Sexual selection affects local extinction and turnover in bird communities

Description:
Identification of factors influencing local and global extinction probabilities is an important focus of conservation biology. Recent research has associated sexual dimorphism (specifically dichromatism) with life history traits associated with high extinction probabilities. Teams from Patuxent Wildlife Research Center and University of Paris, CNRS, collaborated on a study of the linkage between sexual dichromatism in birds and local extinction probability. The study used data from the North American Breeding Bird Survey and community-dynamic estimation methods developed by Patuxent researchers. The researchers found strong evidence that bird species in which males and females differ in color indeed have higher (23% higher) local extinction probabilities than monochromatic birds. Dichromatism was also associated with high rates of local turnover, emphasizing the increased role of dispersal in these species.

Progress to Date:

Methodological papers:


Papers on forest fragmentation and bird communities:

Management Implications:
As predicted by theory, dichromatism and other results of sexual selection should be considered as potentially important factors influencing vulnerability of bird species to local and even global extinction. The higher local extinction rates and the increased importance of dispersal suggest that land use changes resulting in habitat fragmentation may be especially important for the conservation of dichromatic species.

Contacts:
Jim Nichols
USGS Patuxent Wildlife Research Center
Laurel, MD 20708
Phone: 301-497-5660
http://www.pwrc.usgs.gov