

Credit: Ecological Society of America

## Bird-Strike Forensics

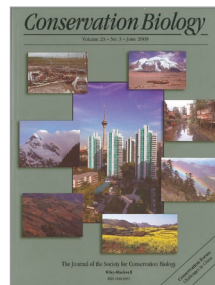
In January 2009 millions of Americans watched, stunned, as passengers from U.S. Airways Flight 1549 stood on the wings of their sinking plane, which had safely landed on the Hudson River after a collision with birds had caused the engines to fail. In *Frontiers in Ecology and the Environment* (v. 7/6), a report details the forensic work of biologists who carefully analyzed feathers, tissues, and DNA from the birds' remains. Led by the Smithsonian Migratory Bird Center's Peter Marra, the authors confirmed that the birds were Canada geese (*Branta canadensis*). To establish whether those geese were resident or migratory, the scientists used stable isotope analysis—a means of determining where a bird had been feeding—then compared the results with those of resident New York City geese and with migratory populations. The isotope signatures matched those of migrants from Newfoundland and Labrador. The authors note that such identification is crucial for wildlife managers, who must develop strategies to reduce the number and impact of bird-plane collisions, a reported 7,400 of which occurred in the United States in 2007 alone.



Credit: Society for Vector Ecology

## Plague Predictors

Most people associate the plague (*Yersinia pestis* infection) with the Dark Ages, but it's alive and well in the American West. To monitor the disease, health departments often test animals that can serve as hosts or vectors of the plague, but a report in the *Journal of Vector Ecology* (v. 34/1) suggests that these surveillance programs may not be looking at the right species. A team led by Jennifer Howell of the Centers for Disease Control and Prevention examined records of plague surveillance programs in Colorado from 1991 to 2005 to see if animals that tested positive for plague were able to predict the locations of actual human plague cases. Many species, including Gunnison's prairie dogs, coyotes, and domestic cats, were found within one kilometer of areas at risk of human plague outbreaks. But a large number of plague-positive species, including white and black-tailed prairie dogs, were found more than a kilometer from human habitation at risk for plague, calling into question their usefulness as sentinels. Howell's team urges health departments to consider using only those animal species that will prove predictive of human plague outbreak locations in their surveillance efforts and offer the chipmunk as one such useful species.



Credit: Wiley-Blackwell

## Border-Fence Impacts

Many conservationists have expressed concern that the U.S.-Mexico border fence may harm wildlife, but few have documented how this might happen. Now a new report in *Conservation Biology* (Early View) provides detailed examples of potential harm for two separate species. Aaron Flesch of the University of Arizona and colleagues used radio telemetry to examine the flight and dispersal patterns of ferruginous pygmy owls (*Glaucidium brasilianum*). The team observed that 77 percent of the owls' flights were below four meters—the minimum height of most of the border fence currently under construction, signaling that the fence could be a barrier to cross-border gene flow. In addition, juvenile owl dispersal was severely hampered across disturbed landscapes. Flesch's team also studied the gene flow and movement of desert bighorn sheep (*Ovis canadensis mexicana*) using telemetry, genetics, and movement models. Bighorns were found to cross valleys nearly five kilometers wide, and genetic analyses indicated that sheep populations shared genes across the border, suggesting that fence construction could strand individuals on one side. To prevent genetic isolation or local extinctions of these and other vulnerable species, the authors advise construction of wildlife-crossing structures, as well as habitat management to encourage movement across the national border.