

Scientists are learning more about big birds from feathers

July 6 2009



Andrew DeWoody studies eagles by using DNA in their feathers to track their movements and habits. This technique allows DeWoody to study larger populations and prevents injuries to birds because they aren't captured. (Purdue Agricultural Communication photo/Tom Campbell)

(PhysOrg.com) -- Catching adult eagles for research purposes is no easy task, but a Purdue University researcher has found a way around the problem, and, in the process, gathered even more information about the birds without ever laying a hand on one.

"Many birds are small, easy to catch and abundant," said Andrew DeWoody, associate professor of [forestry](#) and natural resources. "With eagles, the effort can be 100 to 1,000 times greater than catching chickadees."

Eagles can be hard to find, they often require live bait to attract and,

with sharp talons and beaks capable of snapping off human fingers, they pose a risk to their would-be captors.

Instead of catching eagles, DeWoody collects their feathers and uses the small amount of DNA in them to create a tag that corresponds to a particular bird. Those tags can be used to determine population, parentage, roosting patterns and sex ratio.

"In an afternoon, you can go out and pick up hundreds of feathers," DeWoody said, "As field work goes, it's about as easy as it gets."

DeWoody's method is described in a chapter of the Handbook of [Nature Conservation](#): Global and Economic Issues, which was released this week. The chapter is a compilation of his research on the topic.

Most birds are studied by catching them in nets and attaching tracking devices. Researchers can then follow the birds and use radio technology to triangulate their locations.

Eagles and other large birds present several challenges, however, even beyond catching them.

"Eagles will literally fly hundreds of miles in two days," DeWoody said. "They fly in areas where you can't track them in a pickup truck."

Capturing a bird as large as an [eagle](#) can often be traumatic to the animal.

"They're wild animals that don't want to be caught," DeWoody said. "They can get hurt as well. Using feathers, you avoid all that."

And costs can be as high as \$5,000 for the tracking technology that researchers must attach to eagles, a prohibitive cost if studying more

than a few birds.

DeWoody's studies were done in Kazakhstan with imperial eagles, a top predator of international concern because its population is declining.

The feathers give a good picture of recent eagle habits because they do not survive long in Kazakhstan's winters. Any feathers collected after the winter thaw, then, had to have been recently dropped. In one study, DeWoody's team found that an area thought to have about 40 juvenile eagles living in it based on human observation actually had closer to 300.

The work also helped researchers understand more about the roosting habits of some eagles that use a nest for months at a time versus others who float around from roost to roost. Another study showed that DNA could be used to distinguish eagle species from one another, and that imperial, golden and white-tailed eagles often utilized the same roosts at the same time.

Provided by Purdue University ([news](#) : [web](#))

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