

United States  
Department of  
Agriculture

Animal and  
Plant Health  
Inspection  
Service

**Wildlife  
Services**

FY 2004

## **Ecology, Behavior, and Management Methods for Predators to Protect Livestock and Wildlife**

**Contact Information:**

*Dr. Eric M. Gese, Wildlife Services Research Wildlife Biologist*

*Utah Field Station*

*Utah State University*

*Room 163, BNR Building,*

*Logan, UT 84322-5295*

*Phone: (435) 797-2542 FAX: (435) 797-0288*

*E-mail: [eric.w.gese@aphis.usda.gov](mailto:eric.w.gese@aphis.usda.gov)*

*Web site: [www.aphis.usda.gov/ws/nwrc](http://www.aphis.usda.gov/ws/nwrc)*

### **National Wildlife Research Center Scientists Study Predation Behavior and Ecology**

Wildlife Services' (WS) National Wildlife Research Center (NWRC) is the only Federal research facility devoted exclusively to resolving conflicts between people and wildlife through the development of effective, selective, and acceptable methods, tools, and techniques. NWRC's field station in Logan, UT, is the leading coyote ecology research complex in the world.

Data on predator population dynamics, ecology, and behavior are necessary to understand predation patterns on livestock, game species, and threatened and endangered species. These data are also needed for effective depredation management, but significant gaps of knowledge exist with regard to predator-prey, predator-livestock, and predator-predator relationships. This project is adopting a multi-disciplinary approach to study interactions among predators, and the impact of predators and predator removal on ecosystems and wildlife population dynamics. Results from these studies are fundamental to selective predator management. The information gathered will also be used to guide WS' operational programs, and to provide necessary information in the National Environmental Policy Act (NEPA) process.



### **Applying Science and Expertise to Wildlife Challenges**

**Predator-Prey Relationships**—Through field studies, knowledge of the interactions between predators and prey (livestock, native prey, or other predators) will aid in regulatory compliance for Wildlife Services, particularly with regard to NEPA and Endangered Species Act regulations. At the Utah Field Station, studies being initiated include determining the population ecology and evaluating survey methods for swift foxes; examining interactions between coyotes and kit foxes; investigating swift foxes as an indicator species of ecosystem health; determining interactions among wolves, coyotes, and mule deer and their influence the abundances of these species; examining the interactions between wolves, coyotes, and pronghorn; and investigating the predation patterns of jaguars on livestock and native prey species.

**Sterilization as a method to prevent predation behaviors**—Using sterilization of coyotes to reduce predation rates on domestic lambs was experimentally tested during 1997-1999. Results of the research found that depredation rates were 6-8 times higher for coyote packs with pups compared to sterilized packs that did not have pups. Provisioning of pups appears to be a major motiva-

.....

#### **Major Research Accomplishments:**

- WS demonstrated that coyotes can exert significant negative impacts on smaller predators (swift fox, kit fox) and may decimate populations under appropriate conditions.
- WS provided additional evidence that territorial coyotes are primarily responsible for livestock predation although predation by non-territorial coyotes can be significant when prey is abundant and unprotected.
- WS showed that when coyotes are prevented from having pups, damage to livestock is reduced.

