STEPHEN R. TULLY MEMORIAL GRANT 2003

by Kim Titus, Chair, Tully Grant Committee

The Tully Grant Committee of Drs. Kim Titus, Bob Murphy, and Bob Rosenfield evaluated 32 proposals last year. The RRF Board allowed us to make two grants; information regarding the two projects that received grants is summarized below.

"Migration of North American Raptors in Northern Colombia"
Gabriel Jaime Colorado

Seasonal hawk migration counts have been conducted along the northernmost part of the South American Andes in the Central Cordillera of Colombia since 1997. The project was begun to establish a monitoring station at Alto de Minas mountain pass, near Medellin city, Antioquia province. Over 15,000 raptors, including Broad-winged and Swainson's hawks, Merlins, and Swallow-tailed Kites, were counted in fall 1997 and spring 1998. A new monitoring location was established in the fall of 1999 at a lookout on the Cauca inter-Andean valley, near Fredonia town, Antioquia province (05°54'N, 75°43'W), that has been continually running since that year. Up to 40,000 migrating raptors represented by 9 species are counted per season, and more than 15 resident raptor species have been reported in the area. As part of this project, an environmental education program focusing on bird conservation has also been developed in local schools.

"Using Molted Feathers as a Source of DNA in Mark/Recapture and Population Genetic Studies"
Shelley Bayard de Volo, Colorado State University

Recent improvements in genetic techniques have facilitated the use of non-invasive genetic sampling for forensic, demographic, and phylogenetic studies. Mammal hair, bone, teeth, and feces have been used to identify poachers, estimate population size, determine paternity, and identify species and sex, and genotype individuals. Although DNA from molted feathers has been used for sex determination in birds, few studies have used feathers to genotype individuals in mark/recapture studies or for estimating population allele frequencies.

The primary focus of my research is to use molted feathers as a source of DNA for genotyping Northern Goshawks (*Accipiter gentilis*). The study population occupies the Kaibab Plateau (northern Arizona), where goshawks have been studied with mark/recapture methods, and molted feathers have been collected (1991-2003). My research addresses two primary objectives, the first being to fill frequent annual gaps in the individual capture histories of hawks. Gaps occur in years when goshawk nest attempts fail before they can be recaptured. I will assess the effects of filling such gaps on estimating adult survival rates using program MARK. The second objective is to estimate annual survival rates using only molted feathers and molecular techniques. This objective will test the utility of non-invasive genetic sampling compared with time consuming and expensive mark/recapture techniques. Both objectives will use the same genotyping methods, which include the extraction of DNA from molted feathers, and molecular sexing and genotyping.