

THE CONTINUATION AND EXPANSION OF THE HUMMINGBIRD MONITORING NETWORK'S BOTANY PROGRAM IN 2005-2006

SUMMARY: The Hummingbird Monitoring Network's research is focused on questions about how the distribution of nectar resources affects hummingbird abundance and in turn what factors are beneficial for maintaining these resources. In 2004, HMN began a botany program to investigate the distribution of nectar resources in the Chiricahua and Huachuca Mountains with a grant from the Desert Southwest Cooperative Ecosystem Study Unit's National Park Service partner. We would like to continue and expand this work in 2005. In 2004, botanist Meg Quinn developed a species list of known or suspected hummingbird nectar plants, began mapping the distribution of these nectar resources, and tracked the phenology of each species. We would like to continue this effort in 2005 and to expand the program to include estimates of nectar availability and visitation rates at some of these nectar resources. We will accomplish this expansion by developing a partnership with the Arizona Native Plant Society and then recruit and train volunteer botany teams.

PROJECT DESCRIPTION: One of the goals of the Hummingbird Monitoring Network (HMN) is to estimate hummingbird population sizes so population trends can be detected. Currently, estimates are made at hummingbird monitoring sites where feeders are used to attract the birds. The Botany Program, which was started in 2004, is intended to provide information on the naturally occurring nectar resources in the areas surrounding the monitoring sites. This information helps provide a broad, overall picture of nectar resource availability in the area, as well as specific data on seasonality and plant distribution of key species in the study areas.

In 2004, the botanist for the program began to investigate three key questions in the study area consisting of the Chiricahua and Huachuca Mountains: 1. What are the plant species that provide nectar resources for hummingbirds? 2. What is the blooming season for each of these species? 3. What is the geographic distribution of each species? These questions and the resulting data provide a useful framework for a study that can be broadened and continued.

In the 2005 field season, we are proposing to do the following: 1) Continue to develop the species list of known or suspected hummingbird nectar plants by expanding to new sites within the study area. This expansion will be based upon information gathered from plant specimens at Arizona's universities. 2) Continue to track the phenology of each species. 3) Continue mapping the distribution of each species using HGIS technology and information available at herbariums. 4) Begin estimating abundance of nectar availability by developing botany volunteer teams with the Arizona Native Plant Society.

The results of the 2004 Botany Program field season have established an investigative framework for a study that can now be continued and expanded. In 2005, we can begin to incorporate data from direct observations of hummingbird-flower visitation, to be conducted by volunteers at selected sites throughout the season. This investigation will identify which plant species are used most intensively versus those that are secondary resources. The methodology for this proposed study will be based upon a previous study conducted for HMN by UofA PhD Graduate student Rachel McCaffrey at Tohono Chul Park. This study investigated how nearby nectar resources affected visitation rates at feeders. Fieldwork on this study has just completed.

In early September 2004, the potential partnership with the Arizona Native Plant Society (ANPS) began. ANPS conducts an annual natural history workshop in the Chiricahua Mountains. There, Dr. Wethington and bander Rebecca Hamilton via an evening presentation introduced

them to HMN. Several members then observed an HMN banding session at Paradise and have since expressed great interest and enthusiasm for the program. It seems certain that enough ANPS members can be recruited and trained to form a core group of volunteers for the Botany Program in 2005. Volunteers will be trained and supervised by the botanist. Once trained, they will conduct observations at selected sites in the Chiricahua and Huachuca Mountains. These observations will take place during August and September and possibly during July.