

Population Genetic Study of *Desmodus Rotundus* in an Area of High Bat Rabies Incidence in Cattle, San Luis Potosí State, Mexico. Antoinette J. Piaggio*, Ignacio Amezcua Osorio, Melissa Neubaum*, Elizabeth Pérez Torres, Raúl Clímaco Fernández, Alejandro Jiménez Ramírez, Ana Lilia Sandoval-Sanchez, Luis Lecuona, and Dennis Kohler, USDA/WS/National Wildlife Research Center, Fort Collins, CO; Bovine Paralytic Rabies Campaign Coordinator, Pecuary Committee, San Luis Potosi State, Mexico, Mexico; Coordinator of the National Campaign of Paralytic Rabies in Bovines (SAGARPA), Mexico City; Laboratory of Conservation Medicine ESM/IPN, Mexico City; USDA/APHIS/IS NAR Mexico, Mexico City, Mexico

In the eastern portion of the state of San Luis Potosí, Mexico, bat rabies in cattle has increased significantly since 2001. The cases in this area and neighboring states account for 60% of the reported bat rabies in cattle in Mexico. In 2005, an albino *Desmodus rotundus* was captured in Tamasopo, San Luis Potosí, Mexico. At this time color variants of yellow and orange *D. rotundus* were also identified. We are pursuing a fine-scale, population-level genetic analyses of *D. rotundus* in eastern San Luis Potosí to determine if there is a relationship between the high incidence of rabies in this area and the appearance of recessive traits in these bats. This is a portion of an international multi-agency collaboration to support the Mexico/U.S. bi-national agreements of monitoring and surveillance for wildlife diseases.

Intraspecific Variation in the Echolocation Calls of the Hawaiian Hoary Bat (*Lasiurus cinereus semotus*). Allison Poe*, University of Western Ontario, London, ON

The Hawaiian hoary bat (*Lasiurus cinereus semotus*) is the only known extant bat species found in the Hawaiian archipelago. This makes it an ideal species to study acoustically in that overlap in call characteristics between species resulting in misidentification is not a factor. The purpose of this study was to assess the intraspecific variation in the echolocation calls of the Hawaiian hoary bat, specifically examining differences in echolocation call characteristics between locations, as well as within and between individuals. Using an Avisoft recording system, I recorded free flying bats from six locations at weekly or bi-weekly intervals from May through August, 2006, on the Big Island of Hawaii. I also used radio-telemetry to record the echolocation calls of known individuals as a way to assess intra-individual variation. Preliminary results suggest that echolocation call sequences may be accurately classified to location and in some cases, individuals.

Stereoscopic Reconstruction of Flight Paths of Foraging Bats Using Multiple Thermal Infrared Cameras. Lisa B. Premerlani*, Margrit Betke, Nick Hristov, John J. Magee, Jon Reichard, Stan Sclaroff, and Thomas H. Kunz, Boston University, Boston, MA.

To study the foraging behavior of bats, including the Brazilian free-tailed bat (*Tadarida brasiliensis*), we took infrared thermal videos of bats during warm weather nights in south-central Texas and used computer vision techniques to detect and track the bats. We recorded bats foraging over a small body of water adjacent to a corn field from which moths were emerging. Three different cameras, approximately 20 meters apart, were used to take simultaneous videos of this scene for the purpose of reconstructing the 3-Dimensional (3D) trajectories of the bats. Our computer vision system implements an automatic, adaptive thresholding detection algorithm and a Kalman filter is used for tracking. To aid in the calibration of the cameras, we used heat producing calibration devices that we designed, constructed, and installed in the field of view. Once the camera system was spatially calibrated and synchronized in time, we projected from each camera center through the image of the bat in the 2D image plane and then used triangulation to obtain the 3D coordinate of a foraging bat for each instance in time. Analysis of corresponding video frames recorded by the three cameras then produced the reconstructed 3D trajectory of the bat.

***Craseonycteris thonglongyai*: One Species or Two?** Sébastien J. Puechmaille* and Emma C. Teeling, University College Dublin, School of Biological and Environmental Sciences, Belfield, Ireland

Recent surveys in Myanmar documented for the first time the presence of the Bumble bee bat, *Craseonycteris thonglongyai*, outside the Kanchanaburi region in Thailand, doubling its distribution range. Individuals discovered in Myanmar were morphologically indistinguishable from Thai individuals although their echolocation call peak frequency was 8-10 kHz higher. This high difference in echolocation was