

SBSC Weekly Highlights, August 14, 2007

Dreissena Mussels Invade Lake Powell: Samples collected by Grand Canyon Monitoring and Research Center's monthly forebay monitoring program tested positive as the genus *Dreissena*, which contains both Zebra mussel (*Dreissena polymorpha*) and the Quagga mussel (*Dreissena rostriformis bugensis*) which has recently been found in the Lower Colorado River system. National Park Service has also collected positive samples, and more intensive sampling is currently underway to determine the extent of the invasion. (Contact: Bill Vernieu, GCMRC, Flagstaff, AZ, (928) 556-7051, bvernieu@usgs.gov)

Time and Spatial Scales Matter in Modeling Animal Survivorship: On 8 – 11 August 2007, SBSC researcher Scott Durst presented a paper at the American Ornithologist Union meeting in Laramie, Wyoming. The talk, entitled "Estimating Survivorship in a Migratory Passerine: Effects of Spatial and Temporal Scale" was co-authored by USGS scientists Eben Paxton and Mark Sogge. As part of a 10-year demographic study on the endangered Southwestern Willow Flycatcher (*Empidonax traillii extimus*) in central Arizona, Durst and associates examined the influence of scale on survivorship estimates, which are important for management and conservation of threatened and endangered species, and other wildlife. Durst and co-authors found that the design of a study greatly influences the survivorship estimates that are produced, and to obtain robust estimates of Southwestern Willow Flycatcher survivorship requires at least eight years of study, covering multiple breeding locations in a minimum of one river drainage. Basing estimates on shorter timeframes or smaller study areas risks substantial underestimation and bias. These findings likely apply to numerous species of migratory birds, many highlighted as being of management concern because of recent population declines. (Contact: Scott Durst, USGS Southwest Biological Science Center, Flagstaff, AZ; 928-523-8142; sdurst@usgs.gov).

Presentations to be Given by Kenneth Cole at the Annual Meeting of the Ecological Society of America: In San Jose, CA between August 5-10 Kenneth Cole will give two presentations, the first entitled *Reconstruction of Past Migration Rates of Southwestern Plant Species and Their Application to Future Distributions*. This presentation briefly describes the results of 30 years of research into past vegetation change in the arid southwestern United States on the dynamics of vegetation change following past periods of rapid climate warming. These observations from the past can then be used to parameterize vegetation models of future change. Cole also presented *Modeling the Future Redistribution of Pinyon-Juniper Woodland Species*, with co-authors Kirsten Ironside, Northern Arizona University, Neil Cobb, Northern Arizona University, John D. Shaw, USDA Forest Service and Phillip Duffy, Lawrence Livermore National Laboratory. This presentation shows the initial results of a collaboration between the USGS, Northern Arizona University, The USDA Forest Service, and the Department of Energy in developing models of future vegetation change for Northern Arizona. The resulting present and future dynamics of mortality and migration for species of the pinyon-juniper woodland can

then be tested in field monitoring of ongoing changes. (Contact: Kenneth Cole, Colorado Plateau Research Station, Flagstaff, AZ, (928) 523-7767)

USGS Researcher Selected as Jarchow Conservation Award Recipient: The Tucson Herpetological Society has selected SBSC researcher Erika Nowak as the 2007 recipient of the Jarchow Conservation Award. This award is given to individuals or organizations deemed to have made major contributions to the conservation of the amphibians and reptiles of the deserts of North America. Erika is the 8th recipient, and the first woman to receive the award. Her work has focused on the ecology and conservation of snakes in Arizona, including several rattlesnake species and the narrow-headed gartersnake (a species of conservation concern). Erika will be presented the award during a ceremony in Tucson on September 18, 2007. Contact: Erika Nowak, SBSC Colorado Plateau Research Station, Flagstaff, Arizona. 928-523-7760, Erika.Nowak@nau.edu

SBSC SCEP Teaches Summer Camp about Snake Awareness: Erika Nowak, a SCEP PhD student with the Southwest Biological Science Center, presented a snake awareness class to teenagers attending summer camp at the Second Chance Center for Animals in Flagstaff, Arizona, on August 3. Topics covered were snake classification, behavior, their role in the environment, threats to snakes, snakebite, and research techniques. Nowak used live non-venomous snakes to illustrate points covered in the lecture, and to demonstrate safe and respectful snake handling skills. Contact: Erika Nowak, SBSC Colorado Plateau Research Station, Flagstaff, Arizona. 928-523-7760, Erika.Nowak@nau.edu