



**AOU • COS • SCO**

# 2014 JOINT MEETING

*Estes Park, Colorado • USA  
23-28 September 2014*

# ABSTRACT BOOK

Ornithologists from around the world ascend to the majestic Rocky Mountains for a meeting like no other. This joint meeting will feature six days of intellectually stimulating workshops, plenary talks, scientific sessions, and field trips that will facilitate the exchange of ideas and strengthen the science of avian biology.

*Sponsored By*

The **American Ornithologists' Union**, the **Cooper Ornithological Society**, and the **Society of Canadian Ornithologists/Société des Ornithologistes du Canada**

*Co-Chairs*

**Susan K. Skagen** and **Sara Oyler-McCance** U.S. Geological Survey, Fort Collins Science Center

[www.birdmeetings.org/aoucossco2014](http://www.birdmeetings.org/aoucossco2014)

two demographic values using landscape-level land cover: the proportion of birds in breeding condition (PBRC) and the proportion of birds aged to be in at least their second year (PASY). We obtained demographic data for Yellow Warblers (*Setophaga petechia*) at MAPS (Monitoring Avian Survivorship and Productivity) stations in the Midwestern United States. Using habitat values derived from the National Land Cover Database (NLCD), we conducted binomial regressions of demographic variables vs. the land cover principal components. We found significant associations for both demographic measures (PBRC and ADSY) with landscape composition, supporting the hypothesis that habitat predicts demography on a level that is detectable using these data. The average number of Yellow Warblers captured per year at a site did not predict the proportion of older (after second year) individuals ( $p = 0.963$ ) or the proportion of birds in breeding condition ( $p = 0.341$ ) suggesting that abundance alone may not be a useful identifier of productive habitat. These models were then used to predict high suitability breeding habitat locations across our study landscape. The inclusion of demographic data in habitat suitability analyses will allow for better reserve design for species conservation as well as further our knowledge on spatial demography patterns. This provides us with a better visualization of “optimal” habitat (habitat with high proportions of older birds and birds in breeding condition), allowing for the most productive areas within a species range to be identified and preserved. (ID 16180)

**Pagano, T.**, Rochester Institute of Technology, USA, [tepnets@rit.edu](mailto:tepnets@rit.edu)  
 Bida, M., Rochester Institute of Technology, USA  
 Schroeder, S., Rochester Institute of Technology, USA  
 Smith, S. B., Rochester Institute of Technology, USA, [sbssbi@rit.edu](mailto:sbssbi@rit.edu)

FINGERPRINTING THE BIOCHEMICAL MAKE-UP OF FRUITS AVAILABLE TO MIGRATORY BIRDS VIA MULTIDIMENSIONAL FLUORESCENCE AND CHEMOMETRICS

The fluorescence fingerprints of 13 wild fruit species available to migratory birds in Rochester, NY were obtained with multidimensional fluorescence spectroscopy coupled with chemometric analysis. Results from this novel technique provide unique spectral signatures of each fruit species based on their fluorophoric biochemical make-up and also show the potential of the fluorescence/chemometric technique to discriminate native versus invasive fruit species; and also species’ taxonomy. A 5-component Parallel Factor Analysis (PARAFAC) model based on the multidimensional fluorescence matrices was found to be robust in handling both aqueous and organic extracts of the fruits. PARAFAC results were further correlated with several assays, including total phenol content and total antioxidant capacity- and proved successful in distinguishing different structural forms of these assay analytes. The model yielded two components which correlated strongly with total phenol content and antioxidant capacity, yet the observed photophysical properties indicated contributions from different forms of polyphenols. Spectral loadings further indicate protein-like, catechin-like, and anthocyanin-like contributions. Given the sensitivity and selectivity of the novel fluorescence-based method, improvements were required and implemented for the corresponding protocols of the standard microplate assays. The fluorescence/chemometric-based technique shows promise for a more specified characterization of fruit biochemical make-up over traditional/non-specific assays. The new method could be broadly applicable in assessing food quality across habitats and seasons for birds. (ID 16220 | Poster 78)

**Panjabi, A. O.**, Rocky Mountain Bird Observatory, USA, [arvind.panjabi@rmbo.org](mailto:arvind.panjabi@rmbo.org)  
 Macias-Duarte, A., Universidad Estatal de Sonora, Mexico, [alberto.macias@rmbo.org](mailto:alberto.macias@rmbo.org)  
 Levandoski, G. J., Rocky Mountain Bird Observatory, USA, [greg.levandoski@rmbo.org](mailto:greg.levandoski@rmbo.org)

Ruvalcaba-Ortega, I., Universidad Autonoma de Nuevo Leon, Mexico, [iruvalca@yahoo.com.mx](mailto:iruvalca@yahoo.com.mx)  
 Gonzalez-Rojas, J. I., Universidad Autonoma de Nuevo Leon, Mexico, [josgonza@gmail.com](mailto:josgonza@gmail.com)  
 Pool, D. B., Rocky Mountain Bird Observatory, USA, [duane.pool@rmbo.org](mailto:duane.pool@rmbo.org)

WHERE DO GRASSLAND BIRDS OVERWINTER? DENSITY AND ABUNDANCE OF GRASSLAND BIRDS IN THE CHIHUAHUAN DESERT

Ninety percent of migratory grassland bird species in western North American overwinter in the Chihuahuan Desert. Grasslands in this region are disappearing at an alarming rate but lack of data on grassland bird non-breeding ecology hinders strategic habitat conservation. We surveyed wintering bird communities from 2007-2013 at 1,188 sites in 17 Grassland Priority Conservation Areas (GPCAs) in nine Chihuahuan Desert states in Mexico and USA. We used land cover data to estimate grassland extent in each GPCA and adjusted spatial data based on field data. We used program Distance to estimate density and population size for 12 grassland passerines in Chihuahuan Desert GPCAs. Density and abundance varied by species, GPCA and year. On average, western and southern grasslands supported the greatest numbers of most species. Some GPCAs supported a disproportionate percentage of populations, such as Cuchillas de la Zarca in Durango, Mexico which supported 42% and 24% of the total population of wintering Baird’s Sparrows and Sprague’s Pipits among GPCAs, respectively. Chestnut-collared Longspur had a more northerly distribution with 36% of its GPCA wintering population in The Valles Centrales of Chihuahua, Mexico. Overall, grasslands in Mexico supported larger populations of most species than grasslands in the U.S. The study highlights the importance of specific areas to individual species as well as the importance of density and abundance data for strategic conservation planning. In order to halt population declines and protect grassland conservation investments being made in breeding areas, more efforts to protect and enhance grasslands in the Chihuahuan Desert are needed, particularly in Mexico. We recommend that habitat and range specialists work with landowners to improve grassland conditions and increase productivity and viability of rangelands, while researchers focus on identifying factors limiting population growth and developing beneficial management practices. (ID 16370)

**Pansing, E. R.**, University of Colorado Denver, USA, [elizabeth.pansing@ucdenver.edu](mailto:elizabeth.pansing@ucdenver.edu)  
 Tomback, D. F., University of Colorado Denver, USA, [Diana.Tomback@ucdenver.edu](mailto:Diana.Tomback@ucdenver.edu)  
 Wunder, M. B., University of Colorado Denver, USA, [Michael.Wunder@ucdenver.edu](mailto:Michael.Wunder@ucdenver.edu)  
 Wagner, A. C., University of Colorado Denver, USA, [Aaron.Wagner@ucdenver.edu](mailto:Aaron.Wagner@ucdenver.edu)  
 French, J. P., University of Colorado Denver, USA, [Joshua.French@ucdenver.edu](mailto:Joshua.French@ucdenver.edu)

GERMINATION AND SEEDLING SURVIVAL OF COMMON CLARK’S NUTCRACKER CACHE LOCATIONS AND CONSEQUENCES OF CACHE PILFERAGE

By acting as seed dispersers, many scatter-hoarding birds influence plant population and spatial dynamics, community composition, and regeneration success. Cache site selection influences the regeneration process by determining both microsite type and seed pilferage risk. Clark’s nutcracker (*Nucifraga columbiana*) harvests and caches the seeds of whitebark pine, acting as its primary disperser. Nutcrackers store 1-15 seeds per cache buried 2-3 cm under substrate. We determined whether cache site types generally chosen by nutcrackers 1) support germination, 2) support seedling survival, 3) are pilfered by granivorous rodents; and whether 4) rodents re-cache seeds in sites favorable for germination. In 2012, we created 735 simulated nutcracker caches in six common cache site types across the elevational