

North American Bird Phenology Program



- **The Challenge:** The North American Bird Phenology Program (BPP) houses a data set of 6 million historical observations of about 870 bird species, documenting occurrences and migration times from the 1880s through the 1970s -- the longest and most comprehensive legacy data set on bird migration in existence. In an effort to rescue this invaluable data set, the BPP has begun scanning and transcribing data cards, and storing them in a database, where it will be shared with scientists, managers, educators, and the public. Not only will data be rescued and integrated to facilitate science, but we will create a template for rescue of other similar datasets.



- **The Science:** The Bird Phenology Program's goal is to understand how climate change has affected bird migration arrival and departure dates. This historic collection of migration cards illuminates almost a century of migration patterns and population status of birds.



- **The Future:** Data is currently available through our website <http://www.pwrc.usgs.gov/bpp>. Sam Droege, Andrea Van Den Berg, and Elizabeth Keller were the first to publish a paper using the migration card data. Their paper published in Maryland Birdlife "Spring Arrivals of Maryland and Washington DC birds" was a preliminary evaluation of 100 years of record keeping and recommendations for their continued compilation, was instrumental in the BPP's resurrection. John Sauer, Wildlife Biologist at PWRC, and Agathe Duponteil, former BPP intern, conducted statistical analysis of Barn Swallows using data from the migration cards. John Sauer also analyzed more specific information from this data such as the changes of arrival dates over time, the association of migration with spring temperatures, the NAOI and SOI indexes. All data on Barn Swallows used for analysis were documented from 1895 to 1968. Clemson University Ph.D. student, Jason Courter, is currently exploring how BPP data can be used to generate an historical understanding of migration in Ruby-throated Hummingbirds. This understanding could help prompt future studies that assess changes in bird migration at broad spatial and temporal scales in response to climate and land-use changes. University of Georgetown Assistant Professor, Ali Arab, is currently using BPP data to explore shifting arrival dates for Purple Martins between 1880 and 1950.