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## The Southern Arkansas University Biodiversity Collections

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## The Southern Arkansas University Biodiversity Collections

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Southern Arkansas University is located in Columbia County, a biologically rich area within the Upper West Gulf Coastal Plain Region that spans Texas, Arkansas, and Louisiana. Over the past fifty years, SAU's Department of Biology has developed a diverse collection of biological specimens collected in Arkansas and nearby states. Specimens include vertebrates, invertebrates, and plants. The collection was established by Dr. Lowell A. Logan and Dr. Henry W. Robison between the years of 1967 and 2008. After 2008, the collections fell into a state of disrepair. The preservative in the liquid collections began to evaporate, damaging the specimens. Many of the botanical specimens became infested with cigar beetles while stored in herbarium cabinets, leading to the loss of an estimated 33% of the plant collection. In 2010, the SAU Department of Biology began to address curation issues in an effort to preserve these specimens for future study. The collection was also databased in order to increase its accessibility for scientific research. At the time curation began, the actual number of specimens in the SAU Biodiversity Collections and their taxonomic diversity was unknown. The work presented here provides an inventory of the collection, with additional notes on the taxonomic and geographical strengths of the collection.

All specimens were curated using modern techniques and archival materials. As of August 2012, the fish, turtles, snakes, lizards, amphibians, and arthropods have been fully curated. The herbarium specimens are approximately 50% curated, taking longer as specimens required re-mounting and extensive repair. Curation of the birds and mammals has not been completed yet. The collection database that was created includes detailed information on each specimen (specimen ID, collector information, collection date, locality, and identification).

The SAU Biodiversity Collection Database currently contains 3,323 specimens in total, not including mammals or birds. The largest taxonomic group within collection is the fish, with 1,709 specimens (51.4% of the collection). The herbarium collection is the next largest, with 1,101 specimens (33.1%). The arthropod collection is the third largest, with 342 specimens (10.3%). The remainder of the collection is comprised of

salamanders, frogs/toads, snakes, lizards, and turtles. The mammal and bird collections have not been fully inventoried, but are estimated to contain ca. 50 and 25 specimens, respectively.

The collection contains specimens from 31 states, with the earliest specimen collected in 1901 (from Florida). Arkansas is well represented in the collection with the highest number of attributed specimens (2,360 of which 2,145 include county data), followed by Oklahoma (62), Tennessee (52), and Louisiana (52). Considering only those Arkansas records with county information, the collection shows a strong distribution throughout the Ozark and Ouachita Mountain ranges. Given the increased species diversity in these areas, it is not surprising these regions are well represented in the collection. However, the highest density of collecting has occurred in Columbia County, Arkansas. Presently, 156 collectors have contributed to the SAU Biodiversity Collection, with Logan and Robison being the most prolific. Many SAU students have contributed to the collections as part of the requirements for courses in plant systematics, general botany, or vertebrate natural history.

Although small, the SAU Biodiversity Collections represent an important regional repository of animal and plant specimens. The collection has historical value in that specimens date back 111 years, providing insight into local species distributions over long periods of time. As most of the specimens were obtained since the 1970's, upwards of 40 years of data are available for comparative purposes. These data may be useful for reconstructing the history of land use changes, species diversity, or species distributions in southwest Arkansas. As students continue to contribute to the collections each year, the SAU Biodiversity Collections will grow and strengthen.

It is hoped that increasing the accessibility of the collection database to the scientific community will result in better utilization of these specimens by researchers. Data about the herbarium collection is in the process of being submitted to Index Herbariorum (<http://sweetgum.nybg.org/ih/>) and information about the SAU Biodiversity collections as a whole will be submitted to the Biodiversity Collections Index

**The Southern Arkansas University Biodiversity Collections: Rich Holdings in Southwest Arkansas**

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(<http://www.biodiversitycollectionsindex.org>). The database will be migrated to Specify 6.0, a biological collections management software package that allows for on-line searches. In the interim, database information may be obtained via email inquiry. Upon request, specimens will be made available on loan to scientists for further study.

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