

Specimen Collections for 15 Midwestern National Park Units

Final Report
to the
Heartland Network Inventory and Monitoring Program
Midwest Region
National Park Service
Omaha, Nebraska

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THE UNIVERSITY OF TENNESSEE
Acer rubrum L.

Interagency Agreement IA6370A0002

WILLIAM H. CLAY



February 23, 2001

PLANTS OF ARKANSAS
Collected by Debra Demaree
HOT SPRINGS NATIONAL PARK
GARLAND COUNTY

Acer rubrum L.

Dry ridges.

P. O. HOT SPRINGS

Elevation 300

Date 3-27-42

No. 22730

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Summary

This report describes the results of searches of herbarium and museum collections and databases for records of vertebrate and vascular plant specimens collected in the 15 Midwestern National Park units that were unknown to the National Park Service (NPS). Eight benefits of such data to the NPS are listed. Searches were performed on 85% of 329 sources of specimen data, and almost 3,300 records were located for almost 1,000 taxa that either were definitely collected in the national parks, or it was highly probable that they were. Records of plants outnumbered animals. Almost a fourth of the sources were computerized databases that could be searched on site, but not via a website. Almost a fifth were collections that were not computerized in any way at all. Ten percent were fully searchable on a website. Records of specimen data were found for all 15 parks. A large amount of data were found for Pipestone National Monument and Hot Springs National Park. Data quality was highly variable, and we were unable to standardize the data and prepare it for automatic incorporation into NPS databases. Recommendations are made for future work.

Introduction

The National Park Service is responsible for administering lands that contain natural resources of value to the United States of America. In the Midwestern part of the nation, some of the lands are particularly important for managing and preserving natural prairies and woodlands of the Mississippi River valley and the surrounding region. Parks in this Heartland Network are shown in Table 1:

Table 1. 15 National Park units in the Heartland Network.

Park	Year Authorized	Acreage
Arkansas Post National Monument (AR)	1960	389
Buffalo National River (AR)	1972	94,309
Cuyahoga Valley National Recreation Area (OH)	1974	32,525
Effigy Mounds National Monument (IA)	1949	1,481
George Washington Carver National Monument (MO)	1943	210
Lincoln Boyhood National Memorial (IN)	1962	200
Herbert Hoover National Historic Site (IA)	1965	187
Homestead National Monument (NE)	1936	195
Hopewell Culture National Historic Park (OH)	1923	1,130
Hot Springs National Park (AR)	1832	5,549
Pipestone National Monument (MN)	1937	282
Pea Ridge National Military Park (AR)	1956	4,300
Tallgrass Prairie National Preserve (KS)	1996	10,894
Ozark National Scenic Riverways (MO)	1964	80,790
Wilson's Creek National Battlefield (MO)	1960	1,750

These 15 parks range from just under 200 to almost 95,000 acres in area, and occupy a total area of 234,191 acres. The oldest park unit is Hot Springs NP created in 1832, and Tallgrass Prairie NP is the newest, having been created in 1996. Nine of the parks were created in the last 50 years.

Plant inventories for some of these parks range from incomplete to complete (Bennett, 1996). The status of animal inventories is summarized in the NPS Midwest Region status of inventories report. Inventories are typically based on anecdotal records of species (sight records), although a few may have voucher specimens as the basis of the inventories (e.g. Hopewell Culture, Bennett and Course, 1996).

Recently, the NPS has become interested in determining if there are voucher specimens for plants and animals collected in the parks either before the park was authorized or after. Park records of specimens collected using the permit system are incomplete and unreliable, particularly in earlier years.

Repositories of plant and animal specimens exist throughout the United States, called herbaria and museums respectively. Typically these repositories are found at colleges and

universities, while a few exist as separate institutions. Some have been in existence longer than the parks, and collectors typically deposit specimens at such repositories to guarantee a long life for the collection. It is highly likely, therefore, that collections exist of specimens from these national parks that are unknown to the NPS.

The National Park Service would benefit from the knowledge of these specimens in at least eight ways:

- It would make the species inventories specimen-based.
- It would make inventories more complete.
- It would aid in understanding vegetation changes through time.
- It would help determine the effects of management.
- It would determine if species were no longer found in the parks.
- It would aid in ecological restoration projects.
- It would document previously unknown collecting activity.
- It would aid in understanding the history of the area.

This project was initiated to search selected herbarium and museum collections and databases for records of vertebrate and vascular plant specimens collected in the 15 Heartland parks.

Objectives

The objectives of this project included the following:

- Improve our knowledge of park biota by tracing unknown collections and locating specimens.
- Gather collection level data for newer collections.
- Gather specimen level data for older collections.
- Assemble such data in a format usable to the NPS for inclusion in the NPSpecies database.

Methods

Collections on the World Wide Web

The study began by consulting the Natural History Collections Database by Susan Gucciardo (2000). This database provided statistics on flora and fauna repositories in the U. S., including Universal Resource Locator addresses for those repositories which had web sites. Some of these websites could access the database of the repositories' collections, others had no links at all. Each one was viewed, and those which were searchable were searched by the park names/locality or counties or state name if possible.

Next, the database was filtered to include only repositories which had placed information of their collections into a database, although they had website access to the information. This list was then reviewed for the project relevance and usefulness to the project. Approximately ten institutions were selected and they were all contacted by phone or email, with varying degrees of success. The names of all contacts and the status of the computerization of the collections were recorded in an *Excel* spreadsheet.

Collection Site Visits

It was discovered that the Zoological Department of the Field Museum in Chicago had a complete database of their specimens, but the staff did not have time to query it for this study. Therefore a field trip was made in order to perform the queries of the database on-site. Although there was a locality field in the database, Michi Schulenberg, one of the staff, was not sure if the locality field had ever been used when entering data. Thus queries were performed for each county in which the 15 Heartland parks were in, and the results were printed out.

Because the Field Museum also has extensive botanical collections, the Herbarium staff was consulted to determine a method to search the non-data based specimens. First, the collectors log book was studied to determine if links could be found between collectors and the parks but this information was not recorded in the log book. Second, the folders containing a common grassland species, *Bouteloua curtipendula*, were searched manually for counties in which the relevant parks exist, and three were found, but the labels did not give specific locality information. This species was picked at random and no others were tried. No published list of specimens from a park was ever found that referred to them being deposited in the Field Museum.

A site visit to the Missouri Botanical Garden was conducted on September 22, 2000 to look for specimens from Hot Springs National Park collected by E. J. Palmer in the early 1920s and 30s. The original reference (Palmer 1926) was discovered in the park archives by the park curator. One day was spent by J. Bennett at the Monsanto Center searching for woody plant specimens of half the species in the Palmer (1926) report. The curator of the herbarium, J. Solomon, printed out the records for all the Palmer collections from Arkansas that were in the herbarium database. These were searchable on the web, but would have taken too long to do because the website does not allow multiplex searching by several fields.

Floristic References

It was thought that references providing historical narratives on collecting in the parks would be useful, because non-computerized institutions could search for species names which the collectors had recorded they found, and collectors' names could be entered into databases without locality queries available. Floras of all states in the study were consulted for this purpose. The bibliography information was then recorded along with a code to explain how the text relates to this study.

Natural Heritage Inventories

It was thought that the Natural Heritage Inventories of the eight states in the study may be valuable sources. The inventories have knowledge of which species are rare in the state, and consequently maybe the historical collections of those rare species. Each of the eight Natural Heritage Programs were contacted by letter, telephone, or fax, and each was requested to search their database for information relating to the parks of the state. The results from those who responded were also recorded in the spreadsheet.

Index Herbariorum

The latest *Index Herbariorum* (1990) was consulted, and all herbaria in the United States were evaluated based on the information on collections which is provided in the *Index*. An attempt was made to contact all herbaria which appeared to be useful to the study. All attempts are recorded in the aforementioned *Excel* database. When contact attempts were successful, the status of the computerization of the collections in these herbaria was recorded. For herbaria with adequate databases, searches of collections were performed by the herbarium staff.

Park Managers

It was necessary to contact ten Resource Managers of the fifteen parks in order to refine the reference list which was provided in the Proposal to this project. It was not clear whether the references were already known by the park, or were leads for further searching. Some managers had more to add to the list of references, others said it was complete and not for more research, and others said that many of the collections of the listed studies were not known. The suggestions given by the Resource Managers were then undertaken.

NPS Natural Resource Bibliography

The NPS Natural Resource Park Bibliography on the world wide web (www.nature.nps.gov/nrbib/index.htm) was searched for each of the 15 parks and relevant references, if any, were recorded.

Automated National Catalog System (ANCS) Records

A file containing records of specimens from the ANCS listings for the 10 of the 15 parks was reviewed for specimens that were not on-site at the parks. All the repositories listed for off-site specimens were contacted for information about the specimens and others that may be at the repositories.

Latitude and Longitude Searches

No searches using park latitudes and longitudes were performed. Only one herbarium website was searchable with latitude and longitude, but it was not necessary to use them because it was also searchable by park name. The Monticello, Arkansas Herbarium, Ft. Hays University fish collections, MacGreager Herbarium, and a few other repositories requested park latitudes and longitudes for searches, but no results were provided.

Results

In the time allowed for this project, 329 sources of specimen information were evaluated for the 15 parks (Table 2):

Table 2. Number of sources of specimen data for 15 Midwestern National Parks.

Park	Total
All 15 parks	60
ARPO	17
BUFF	24
CUVA	24
EFMO	18
GWCA	14
HEHO	18
HOCU	21
HOME	8
HOSP	30
LIBO	16
OZAR	14
PERI	19
PIPE	17
TAPR	17
WICR	12
Grand Total	329

Appendix 1 contains a complete listing of the 329 sources with information on each, extracted from an *Excel* file which is part of this report. Appendix 1 contains hot links to other files, all of which are provided with this report in the form of computer files at an FTP site: www.ies.wisc.edu/pub/jpbennet/NPS. Access to these files does not require a password. Instructions for using the files are provided at the FTP site. Appendix 1 does not contain fields for specific collector names or collection dates because the sources do not all consistently have this data. For example, collector names are not available for Tulane University or the University of Kansas collections, and the dates are not available for New York Botanical Garden collections. The information displayed in each hotlink is the total amount of data recovered from the source, and any missing information is simply not available.

The category "All 15 parks" includes sources of data that could be searched for all of the parks in the study, not just a single park. The individual park for which we found the greatest number of sources was Hot Springs, with 30 sources (9% of the total). Homestead had the least, with 8 sources (2% of the total). Most individual parks averaged about 18 sources.

The sources fell into two groups: computerized data sources, and literature sources. The characteristics of the source, and the degree of usefulness of each were coded and are shown in Table 3. These codes are used in Appendix 1 for brevity. Almost a fourth of the sources were

computerized databases that could be searched on site, but not via a website. Almost a fifth were collections that were not computerized in any way at all. Ten percent were fully searchable on a website. Thirteen percent of the sources were not contacted. Six percent of the collections were being entered into a database but were not yet searchable. Ten percent of the literature sources provided no leads at all as to collections, 5 percent provided some history of collecting. Five percent of the searchable collections did not have useful search fields or specimens entered which were relevant to this study.

Table 3. Number of sources by characteristic code for 329 specimen data sources.

Code	Total
0	61
1	21
2	76
3	17
4	33
5	2
A	31
B	6
B,C	1
C	18
C,D	2
D	6
E	2
F	2
G	3
H	2
I	1
N/a	2
nc	43
Grand Total	329

0 = Collections are not computerized in any way; no database at all.

1 = Collections are currently being entered into a database but are not yet searchable, even on site.

2 = Collections are data based and can be searched on-site, but not via a website.

3 = Collections are searchable through the web but not through search fields which are useful, or specimens which are useful have not been entered into the database.

4 = Collections are fully searchable through remote access on website.

5 = Website only describes collections but does not allow searches.

A = Text contains no search leads.

B = Text contains some vegetation distribution by county.

C = Text contains some history of past collectors.

D = Text listed where a collection/voucher specimens is/are located.

E = Text mentions that live specimens were released, or that data was observational, i.e. no collections were made.

F = Text contains flora/fauna distributions by some area other than county but none of particular relevance to this study.

G = Text implies a collection was made but does not provide further information.

H = Text lists species present or provides an inventory.

I = Text not seen, but collections were found serendipitously at MBG and UMO.

N/a = Not applicable

Nc = No contact made

About 85% of all sources were contacted, and the status of those contacts are shown in Table 4. Thirty-five percent of the sources yielded no records at all for the fifteen parks. Another 21% were not searchable at all. For 16% of the sources we were able to complete some kind of search, although another 7% yielded incomplete searches. These were incomplete due to technological obstacles to searching, databases that were incomplete to begin with, or time ran out on the search. A few sources (5%) did not respond in time and may yet reply with results.

Table 4. Status of searches for 329 specimen data sources.

Status	Total
No contact made	47
No records found	116
No search possible	68
No search possible beyond verification of known collections	4
Search complete	53
Search incomplete	24
Search pending	17
Grand Total	329

We were able to retrieve record information from 56 sources (17%) (Table 5), with HOSP having the greatest number (16% of 56). All parks had some record information found, although Lincoln Boyhood was the smallest, with only one source.

Table 5. Number of sources with specimen data by park for 15 Midwestern parks.

Park	Total
ARPO	2
BUFF	5
CUVA	5
EFMO	2
GWCA	5
HEHO	2
HOCU	2
HOME	3
HOSP	9
LIBO	1
OZAR	5
PERI	4
PIPE	5
TAPR	4
WICR	2
Grand Total	56

The source category "All 15 parks" contained no source records because once records were found for a particular park that information was moved to the park category to which it belonged.

The 56 sources contained a total of 3,292 specimens representing 991 species across all 15 parks. It is not known if there are duplicates in these tallies, so the actual numbers may be less. Time did not allow us to break down the species and specimens by park. However, the breakdown by biotic group is shown in Table 6.

Table 6. Number of record sources by biotic group.

Biotic Group	Total
All	1
Birds	7
Bryophytes	5
Fish	1
Herps	13
Mammals	19
Plants	10
Grand Total	56

This table is a bit misleading because the herps and mammals sources are mostly all one source, the University of Michigan collections, and are repeated for many parks. The plants group are actually the largest category of specimens and collections (17%), followed by birds at 12%.

A tabulation of results by source and park is shown in Table 7. Fifteen sources contained specimens or specimen data from all the parks in the study.

Table 7. Specimen collections from 15 midwestern national parks by source and biotic group.

Source	Biotic Group	Parks	Completeness
Cleveland Museum	Plants	CUVA	Complete
Field Museum	Birds	ARPO, BUFF, PERI, PIPE, OZAR, HOME, CUVA	Complete
Field Museum	Mammals	HOSP, HEHO	Complete
Kansas University	Plants	TAPR	Complete
Minnesota Natural Heritage Program	Many	PIPE	Complete
Missouri Botanical Garden	Plants	HOSP	Incomplete
New York Botanical Garden	Bryophytes	BUFF, HOSP, PIPE, GWCA, OZAR	Complete
Smithsonian	Plants	HOSP	Incomplete
Truman State University	Plants	GWCA, OZAR	Complete
Tulane University Museum	Fish	BUFF	Complete
University of Arkansas at Fayetteville	Mammals	HOSP	Complete
University of Kansas	Mammals	BUFF, PERI, EFMO, HEHO, TAPR, PIPE, GWCA, OZAR, WICR, CUVA, HOCU	Complete
University of Michigan Museum	Herps	ARPO, BUFF, HOSP, PERI, LIBO, EFMO, TAPR, GWCA, OZAR, WICR, HOME, CUVA, HOCU	Complete
University of Michigan Museum	Mammals	PERI, TAPR, GWCA, HOME, CUVA	Complete
University of Minnesota Herbarium	Plants	PIPE	Complete
University of Missouri	Plants	HOSP	Incomplete

The 56 sources are hot-linked in Appendix 1. Some of these sources are actual *Excel* spreadsheets in native format from the source and have not been edited. Many of these contain county level information only, and each park will have to determine individually if the records refer to specimens from within park boundaries. Other hotlinks are for *Word* text files or images of texts. Some of the hotlinks are only for the first page of a set of records because the length of the original document would have been prohibitive. All originals will be sent to each park and the Prairie Cluster LTEM office for their files.

As a result of contacts found in *Index Herbariorum*, some curators were able to provide helpful information. For example, Iowa State University provided bibliographic information on many studies performed in the Iowa counties of Allamakee and Cedar, in which Effigy Mounds National Monument and Herbert Hoover National Historic Site occur, respectively. These studies often mentioned the location of voucher specimens, although no subsequent action could

be taken, because the repositories mentioned were not computerized, and it was too late in the study for travel to those locations. Also, the herbaria are too understaffed to search for hundreds of specimens by hand.

A large amount of specimen data was found for two parks: PIPE and HOSP. For PIPE, we were able to locate label data for almost 500 specimens at the University of Minnesota Herbarium. These specimens contained "Pipestone National Monument" in the management area field, and were fully searchable at the website. However, twenty-five records were viewable on a screen, and it was not possible to download the results of the search from the website. We contacted the database manager with a request for the full query results and were sent these by email at no charge. The Pipestone records represent the best retrieval of all the parks in the study, and the model which other collection institutions should follow. The complete set of PIPE records are in an *Excel* spreadsheet as part of this report.

It appears that there has been a lot of collecting activity at Hot Springs National Park for some time. The park provided a list of collectors dating back to 1804, and we were able to locate specimens for one of the collectors, E. J. Palmer. We also discovered collections by another botanist, D. Demaree, of whom park officials had no knowledge. There is also evidence of collections by H. R. Gregg at the National Herbarium in Washington, but we were unable to verify their existence.

The earliest collections from HOSP were those of E. J. Palmer in the early 1920s. Palmer published the woody species he collected (Palmer, 1926), but not the herbaceous species. He stated that the woody specimens were deposited at the Arnold Arboretum, the Missouri Botanical Garden, and the University of Arkansas. A visit to the Missouri Botanical Garden located 115 records in their database of Palmer specimens from Garland County, many of them with the phrase "hot springs" in the locality field. However, of these 115 records, only 11 of the specimens were actually at MBG, because the remainder were located at the University of Missouri Herbarium in Columbia. The MBG database includes the UMO records, so both are retrieved. The MBG database only contains about 1/4th of all the specimens at MBG because the database is not yet complete. A physical search of part of the MBG herbarium for Palmer specimens using the woody species mentioned in Palmer (1926) located 20 out of 35 taxa.

A search by the curator at UMO located 97 Palmer specimens, even though MBG listed 111. Some of the supposed UMO specimens in the MBG database were actually physically at MBG, which could explain the discrepancy. Another search at UMO also located some of Palmer's HOSP specimens from the 1930s. A search of the National Herbarium's type database, which is on the WWW, located two Palmer isotype specimens from HOSP. These are very important specimens for the park. Finally, the herbaceous specimens that Palmer (1926) refers to were not published to our knowledge. The only way to discover these specimens is by manual searching of the herbarium, but without a species list it may not be possible. Only a few of them can be retrieved using the printouts from each herbarium.

Another collector at HOSP was H. R. Gregg. Park officials provided a 1935 list of 451 specimens from the park that are supposedly deposited at the National Herbarium, but this could not be verified. These specimens could only be verified by a visit to the herbarium.

Finally, a specimen collected by a Delzie Demaree in 1942 with Hot Springs National Park actually on the label was located by chance at MBG. Curators at MBG and UMO were able to retrieve records for Demaree collections at both herbaria. The park had no record of Demaree collections. The Demaree specimens that are in the two databases can be incorporated into the park's database, but specimens that are not will have to be searched for manually.

It should also be pointed out that MBG may not contain all the Palmer and Demaree specimens they are supposed to have because some of them may have been deaccessioned by Woodson during his tenure as herbarium director in the period 1948-1963 (Solomon 1998). Some of the specimens could have been transferred to 68 other botanical institutions during this period and it may not be possible to locate them.

Discussion

In three months of searching for specimen records we were able to locate 329 sources of data, and found specimen records in 56 of them, or 17%. This is not a very high return rate. A more acceptable rate of return would be closer to 50%. This low rate of return is due to a number of factors, including technological limitations at specimen repositories, poor communication by repository officials, incomplete record histories, and the lack of time to concentrate on a single park because the project scope included 15 parks.

We found more specimen data for plants than for animals. This may be due to the investigators' greater familiarity with herbaria, more herbaria in existence than museums, more computerization of herbaria, or more plant specimens in existence.

Although we found only one source of data for Lincoln Boyhood, it was encouraging that we found specimen data for every park in the study. This is an indication that national parks are attractive to collectors and that there are good chances that data do exist for any park under study. More investigation may turn up even more sources for these parks.

The quality of the data is highly variable, ranging from detailed label information that includes the park name in a field, to lists of species with no label information at all. Label information fields are inconsistent between repositories, as there is no standardization between them. Even though we were able to collect data for almost 3,300 specimens, there is little we could do with it because of the lack of standardization. Each collection will have to be hand entered into NPS databases because there is no way to automate the process.

In addition, historical collections, when found, often have very incomplete data associated with them. Labels information is very sparse, and location data is often non-existent. It is very rare to find specimens with park names or township, range and section identifiers. One specimen may require a day or more of research just to determine its' geographic location.

We were unable to tally the number of species and specimens by each park from this data. This is because some of the collections sources are for more than one park. We did not have time to break out the specimens by park in these sources.

Some of the sources contain data that is specific to county level only, not park level. This means some of the specimen data may not be useful at all because the specimens may not be from parks. These records will have to be checked by park officials before they can be useful.

Recommendations

Our first recommendation is to not conduct similar searches in the future for more than one park. Our survey of 15 parks led to constant confusion about which source was for which park. We were unable to concentrate our efforts because we were trying to find records for so many parks. A higher rate of return would be more acceptable, and could be achieved if the focus were on one park instead of many.

Our second recommendation is to have searches performed by subject matter experts. Our expertise is botany, and were able to locate botanical specimens easily and accurately. Our success with animal specimens was not good because our familiarity with the subject was not expert.

Third, future searches should include more time for manual searches based on species lists from published sources. Many collections are still not yet computerized or web-enabled, and on-site searches will be more productive. The park that would benefit the most from a more detailed study of off-site specimen collections is Hot Springs National Park. This study uncovered what appear to be very site-specific collections that are sufficiently documented to merit further study. Some of the specimens are known by species and repository.

Twenty-three specific recommendations by park and specimen repository are listed in the spreadsheet version of Appendix 1. These recommendations refer to both complete and incomplete searches, and are too detailed to summarize in a narrative. Future work could include follow-up investigations of the incomplete searches, either by resuming the contacts to determine if more computerization has been performed, or carrying out the recommendations in Appendix 1.

For HOSP, the Palmer and other collections at MBG, UMO and Smithsonian can be completed by following these steps:

1. Complete the inventory of woody specimens by manually searching for them in the herbaria using the published list.
2. Locate the herbaceous specimens using computer lists from the herbaria. Specimens not yet computerized cannot be located.
3. Locate specimens collected by Demaree at MBG and UMO using computer lists from the herbaria. Determine if there are any at Smithsonian.
4. Locate specimens collected by Gregg at Smithsonian using the list from the park.

Specimens not yet computerized in any of these herbaria that are not on published lists cannot be located except by chance. Specimens that have been deaccessioned by any of the herbaria probably cannot be located at all. The four tasks outlined above, however, would add considerably to our knowledge of off-site HOSP collections.

Conclusions

This project began with a worthy goal: discover specimens of plants and animals from national parks that the parks have no knowledge of. The goal, however, contains a paradox: how can one find specimens from parks if they are unknown? This paradox made the project difficult from the start, and frustrated our efforts throughout. The project was unable to focus on tangible items and products. There is no easy solution to this problem because by nature, the project is searching for positive evidence based on negative evidence.

In spite of this inherent problem, we were able to uncover evidence of almost 1000 taxa and almost 3300 specimens that could be from the 15 Midwestern National Parks. Further work is needed to focus the work on sets of records with a high probability of success for the NPS. Just searching for records is only half the work. The other half is performing quality assurance checks on the data, standardization of the data, and finally, entering the data into NPS databases. This project was unable to carry out these latter steps due to time, funding, and logistical constraints.

On the plus side, however, the NPS is to be lauded for initiating this project and getting started on this important task. The biological resources of the national parks are under increasing pressure from humanity. Changes in biota are often subtle and go unnoticed until it is too late. Retrospective studies such as this are a start to uncovering the biological history of an area, and hopefully will lead to greater preservation and restoration of park biodiversity. The NPS should not abandon this work because one project such as this yielded a low return.

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Appendix

Printed Version of *NPS Specimens.xls*

with Recommendations Omitted

State	Park	Source	Code	Status	Appendix 1	Appendix 2	Biotic Group	# Species	# Specimens
All	All 15 parks	A Compendium of the Flora of the Northern and	A	No records found					
All	All 15 parks	A Field Guide--Great Lakes Coast Plants. Walt	A	No records found					
All	All 15 parks	Academy of Natural Sciences	5	No search possible					
All	All 15 parks	Agricola Bibliography Index	4	No records found					
All	All 15 parks	American Museum of Natural History	2	Search pending					
All	All 15 parks	American Museum of Natural History-Herpetolo	2	Search pending					
All	All 15 parks	American Museum of Natural History--Ichtholog	2	Search pending					
All	All 15 parks	American Museum of Natural History-Mammalo	2	Search pending					
All	All 15 parks	American Museum of Natural History-Ornitholog	2	Search pending					
All	All 15 parks	An Historical Review of the Work Done on the Fl	C	No records found					
All	All 15 parks	Arnold Arboretum (affil. with Harvard College)	2	No search possible					
All	All 15 parks	Biosearch Bibliography Index	3	No records found					
All	All 15 parks	Brooklyn Botanic Garden	nc	No contact made					
All	All 15 parks	Buffalo Museum of Science	1	No records found					
All	All 15 parks	Cambridge Scientific Abstracts	4	No records found					
All	All 15 parks	Carnegie Museum of Natural History	0	Search incomplete					
All	All 15 parks	Chicago Academy of Sciences	1	No search possible					
All	All 15 parks	Cornell University-Ichthyology Department	4	Search incomplete					
All	All 15 parks	Field Museum-Botany	0	No records found					
All	All 15 parks	Harvard-Herbarium	0	No search possible					
All	All 15 parks	Harvard-Herpetology	0	No search possible					
All	All 15 parks	Harvard-Ichthyology	3	No search possible					
All	All 15 parks	Harvard-Mammalogy	0	No search possible					
All	All 15 parks	Harvard-Ornithology	0	No search possible					
All	All 15 parks	Illinois Wildflowers by John Voss and Virginia S.	C	No records found					
All	All 15 parks	Index Herbariorum: Part I, the Herbaria of the	n/a	No records found					
All	All 15 parks	Lincoln Parks: The Story Behind the Scenery b	A	No records found					
All	All 15 parks	Michigan State U-Herbarium	0	No search possible					
All	All 15 parks	Michigan State U-Vertebrates	nc	No contact made					
All	All 15 parks	Milwaukee Public Museum	1	No contact made					
All	All 15 parks	Montana State University	1	No search possible					
All	All 15 parks	North Dakota State University at Fargo	nc	No contact made					
All	All 15 parks	NPS Natural Resource Bibliography	4	No records found					
All	All 15 parks	Oklahoma Museum of Natural Sciences	5	No search possible					
All	All 15 parks	Rancho Santa Ana Botanic Garden	nc	No contact made					
All	All 15 parks	Smithsonian-birds	3	No records found					
All	All 15 parks	Smithsonian-fish	4	No records found					
All	All 15 parks	Smithsonian-mammals	3	No records found					
All	All 15 parks	Smithsonian-mammals	3	No records found					
All	All 15 parks	South Dakota State University	0	No contact made					
All	All 15 parks	Standard Common and Current Scientific Name	A	No records found					
All	All 15 parks	Texas A&M University	3	No search possible					
All	All 15 parks	The Flora of Bucks County, Pennsylvania. Walt	C	No records found					
All	All 15 parks	The Flora of Schuylkill County, Pennsylvania. Pa	A	No records found					

State	Park	Source	Code	Status	Appendix 1	Appendix 2	Biotic Group	# Species	# Specimens
All	All 15 parks	University of Colorado at Boulder	nc	No contact made					
All	All 15 parks	University of Georgia at athens	1	No search possible					
All	All 15 parks	University of Michigan-birds	4	No records found					
All	All 15 parks	University of Michigan-fish	2	No records found					
All	All 15 parks	University of Michigan-Herbarium	0	No search possible					
All	All 15 parks	University of Washington Fish Collection	4	No records found					
All	All 15 parks	University of Wisconsin Herbarium (State Herba	1	No search possible					
All	All 15 parks	University of Wisconsin Herbarium at Milwaukee	nc	No contact made					
All	All 15 parks	Vascular Plants of Illinois. George Nevill Jones	A	No records found					
All	All 15 parks	Virginia Polytechnic Institute	nc	No contact made					
All	All 15 parks	Wildflowers of the Tall Grass Prairie: The Upper	A	No records found					
All	All 15 parks	Yale--Peabody Museum Botany Collection	4	No records found					
All	All 15 parks	Yale--Peabody Museum Herpetology Collection	4	No records found					
All	All 15 parks	Yale--Peabody Museum Ichthyological Collectio	4	No records found					
All	All 15 parks	Yale--Peabody Museum Mammalian Collection	4	No records found					
All	All 15 parks	Yale--Peabody Museum Ornithological Collectio	4	No records found					
AR	ARPO	An Atlas and Annotated List of the Vascular Pla	B	No records found					
AR	ARPO	Aquatic Sciences and Fisheries Index	4	No records found					
AR	ARPO	AR Natural Heritage Program	2	Search pending					
AR	ARPO	AR Game & Fish Co-op Research Unit	n/a	No records found					
AR	ARPO	Field Museum Ornithology Department	2	Search complete	FieldMus-birds.xls		Birds	17	30
AR	ARPO	Hendrix College, Conway, AR	2	Search pending					
AR	ARPO	James E. Johnson-former Co-op Unit director	nc	No contact made					
AR	ARPO	Keys to the Flora of AR. Edwin B. Smith. Fayet	A	No records found					
AR	ARPO	University of AR at Fayetteville-Herbarium	0	No search possible besides verification of known collections					
AR	ARPO	University of AR at Jonesboro-Herbarium	0	No search possible					
AR	ARPO	University of AR at Monticello-Herpetology	nc	No contact made					
AR	ARPO	University of AR at Monticello-Mammals	nc	No contact made					
AR	ARPO	University of AR at Monticello-Ornithology	0	No search possible					
AR	ARPO	University of AR at Monticello-Herpetology	nc	No contact made					
AR	ARPO	University of Michigan-Herpetology	2	Search complete	UM Herps.xls		Herps	82	498
AR	ARPO	University of Texas at Austin	3	No search possible					
AR	ARPO	Wildflowers of AR. Carl G. Hunter. Little Rock.	C	No records found					
AR	BUFF	Aquatic Sciences and Fisheries Index	4	No records found					
AR	BUFF	Archaeological Assessment of the Buffalo Natio	A	No records found					
AR	BUFF	AR Natural Heritage Program	2	Search pending					
AR	BUFF	Atlas and Annotated List of the Vascular Plants	B	No records found					
AR	BUFF	AR Game & Fish Co-op Research Unit	nc	No contact made					
AR	BUFF	Field Museum Ornithology Department	2	Search complete	FieldMus-birdeggs.xls		Birds	5	5
AR	BUFF	Final Report: Buffalo National River Ecosystems	D	No records found					
AR	BUFF	Hendrix College, Conway, AR	2	Search pending					
AR	BUFF	James E. Johnson-former Co-op Unit director	nc	No contact made					
AR	BUFF	Keys to the Flora of AR. Edwin B. Smith. Fayet	A	No records found					
AR	BUFF	NY Botanical Garden	4	Search complete	NYBG-BUFF.xls		Bryophytes	11	12

State	Park	Source	Code	Status	Appendix 1	Appendix 2	Biotic Group	# Species	# Specimens
AR	BUFF	Population Dynamics and Species Diversity of I	E	No records found					
AR	BUFF	Tulane University Museum of Natural History	2	Search complete	<u>Tulane U-BUFF.xls</u>		Fish	75	443
AR	BUFF	University of AR at Fayetteville-Herbarium	0	No search possible besides verification of known collections					
AR	BUFF	University of AR at Fayetteville-Zoology	0	Search pending					
AR	BUFF	University of AR at Jonesboro-Herbarium	0	No search possible					
AR	BUFF	University of AR at Monticello-Herpetology	nc	No contact made					
AR	BUFF	University of AR at Monticello-Mammals	nc	No contact made					
AR	BUFF	University of AR at Monticello-Ornithology	0	No search possible					
AR	BUFF	University of AR at Monticello-Herpetology	nc	No contact made					
AR	BUFF	University of KS at Lawrence-Mammals	2	Search complete	<u>UKS-AR.xls</u>		Mammals	29	664
AR	BUFF	University of Michigan-Herpetology	2	Search complete	<u>UM Herps.xls</u>		Herps		
AR	BUFF	University of Texas at Austin	3	No search possible					
AR	BUFF	Wildflowers of AR. Carl G. Hunter. Little Rock.	C	No records found					
AR	HOSP	Aquatic Sciences and Fisheries Index	4	No records found					
AR	HOSP	AR Game & Fish Co-op Research Unit	nc	No contact made					
AR	HOSP	AR Natural Heritage Program	2	Search pending					
AR	HOSP	Arkansas (Hot Springs National Park) plants coll	G	Search incomplete	<u>Gregg.bmp</u>		Plants	Undetermined	451
AR	HOSP	Atlas and Annotated List of the Vascular Plants	B	No records found					
AR	HOSP	Birds of Hot Springs and Vicinity. William H. De	E	No records found					
AR	HOSP	Demaree, D. 1943. A catalogue of the vascular	I	Search incomplete	<u>Demaree.doc</u>	<u>Demaree-Acer.bmp</u>	Plants	16	18
AR	HOSP	Field Museum-Mammals	2	Search complete	<u>FieldMus-HOSP_HEHO.txt</u>		Mammals	4	8
AR	HOSP	Flora of the Magnet CoverArea in AR. Edna Kat	C	No records found					
AR	HOSP	George Engelmann in AR Territory by Jerome J	A	No records found					
AR	HOSP	Grasses of Hot Springs National Park, AR, and	G	No records found					
AR	HOSP	Hendrix College, Conway, AR	2	Search pending					
AR	HOSP	James E. Johnson-former Co-op Unit director	nc	No contact made					
AR	HOSP	Keys to the Flora of AR. Edwin B. Smith. Fayet	A	No records found					
AR	HOSP	MO Botanical Garden	4	Search incomplete	<u>Palmer-MBG.doc</u>	<u>Palmer-Tilia.bmp</u>	Plants	200	11
AR	HOSP	NY Botanical Garden	4	Search complete	<u>NYBG-HOSP.xls</u>		Bryophytes	4	6
AR	HOSP	Palmer, E. J. 1926. The ligneous flora of Hot Sp	D	Search incomplete					
AR	HOSP	Sedges and Rushes of Hot Springs National Par	G	No records found					
AR	HOSP	Small Mammal Survey of Hot Springs National	D	No records found	<u>Sealander.doc</u>		Mammals	8	8
AR	HOSP	Smithsonian Institution	4	Search complete	<u>SM-HOSP.doc</u>		Plants	2	2
AR	HOSP	University of AR at Fayetteville-Herbarium	0	No search possible besides verification of known collections					
AR	HOSP	University of AR at Fayetteville-Zoology	0	Search pending					
AR	HOSP	University of AR at Jonesboro-Herbarium	0	No search possible					
AR	HOSP	University of AR at Monticello-Herpetology	nc	No contact made					
AR	HOSP	University of AR at Monticello-Mammals	nc	No contact made					
AR	HOSP	University of AR at Monticello-Ornithology	0	No search possible					
AR	HOSP	University of Michigan-Herpetology	2	Search complete	<u>UM Herps.xls</u>		Herps		
AR	HOSP	University of MO at Columbia	2	Search incomplete	<u>Palmer-UMO.doc</u>		Plants		
AR	HOSP	University of Texas at Austin	3	No search possible					
AR	HOSP	Wildflowers of AR. Carl G. Hunter. Little Rock.	C	No records found					
AR	PERI	Aquatic Sciences and Fisheries Index	4	No records found					

State	Park	Source	Code	Status	Appendix 1	Appendix 2	Biotic Group	# Species	# Specimens
AR	PERI	AR Natural Heritage Program	2	Search pending					
AR	PERI	Atlas and Annotated List of the Vascular Plants	B	No records found					
AR	PERI	AR Game & Fish Co-op Research Unit	nc	No contact made					
AR	PERI	Field Museum Ornithology Department	2	Search complete	<u>FieldMus-birds.xls</u>		Birds		
AR	PERI	Hendrix College, Conway, AR	2	Search pending					
AR	PERI	James E. Johnson-former Co-op Unit director	nc	No contact made					
AR	PERI	Keys to the Flora of AR. Edwin B. Smith. Fayet	A	No records found					
AR	PERI	University of AR at Fayetteville-Herbarium	0	No search possible besides verification of known collections					
AR	PERI	University of AR at Fayetteville-Zoology	0	Search pending					
AR	PERI	University of AR at Jonesboro-Herbarium	0	No search possible					
AR	PERI	University of AR at Monticello-Herpetology	nc	No contact made					
AR	PERI	University of AR at Monticello-Mammals	nc	No contact made					
AR	PERI	University of AR at Monticello-Ornithology	0	No search possible					
AR	PERI	University of KS at Lawrence-Mammals	2	Search complete	<u>UKS-AR.xls</u>		Mammals		
AR	PERI	University of Michigan-Herpetology	2	Search complete	<u>UM Herps.xls</u>		Herps		
AR	PERI	University of Michigan-Mammals	2	Search complete	<u>UM Mammal Rec - Benton Co. AR.txt</u>		Mammals	3	5
AR	PERI	University of Texas at Austin	3	No search possible					
AR	PERI	Wildflowers of AR. Carl G. Hunter. Little Rock.	C	No records found					
IN	LIBO	Augustana College	0	No search possible					
IN	LIBO	Ball State University	nc	No contact made					
IN	LIBO	Butler University	1	No records found					
IN	LIBO	Eastern Illinois University	nc	No contact made					
IN	LIBO	Flora of IN. Charles C. Deam. INpolis. IN Dep	C	No records found					
IN	LIBO	Illinois Dept. of Natural Resources	nc	No contact made					
IN	LIBO	Illinois Natural History Museum	3	No records found					
IN	LIBO	Illinois State Museum—in Springfield	nc	No contact made					
IN	LIBO	Illinois Natural History Survey's Center for Biodiv	3	No records found					
IN	LIBO	IN Natural Heritage Program	2	No records found					
IN	LIBO	IN University at Bloomington	1	No search possible					
IN	LIBO	Morton Arboretum	nc	No contact made					
IN	LIBO	Purdue University	0	No search possible					
IN	LIBO	Southern Illinois University	3	No records found					
IN	LIBO	University of Michigan-Herpetology	2	Search complete	<u>UM Herps.xls</u>		Herps		
IN	LIBO	Vascular Plants of IN: A Computer Based Chec	A	No records found					
IA	EFMO	Augustana College	0	No search possible					
IA	EFMO	Checklist of the Vascular Flora of Allamakee Co	D	No records found					
IA	EFMO	Flora of Cedar County, IA. Marcus J. Fay. Proc	D	No records found					
IA	EFMO	Flora of the "DriftlessArea." Thomas G. Hartley.	C,D	No records found					
IA	EFMO	Grinnell College	1	No search possible					
IA	EFMO	History of Studies on the IA Vascular Flora. Law	C	No records found					
IA	EFMO	IA Natural Heritage Program/DNR	2	Search incomplete					
IA	EFMO	IA State University	0	No search possible					
IA	EFMO	Plants of IA: Keys for determining the names of	A	No records found					
IA	EFMO	Putnam Museum, Davenport, Iowa	0	No search possible					

State	Park	Source	Code	Status	Appendix 1	Appendix 2	Biotic Group	# Species	# Specimens
IA	EFMO	University of IA at IA City Herbarium	0	No search possible					
IA	EFMO	University of IA Museum of Natural History	2	No records found					
IA	EFMO	University of KS at Lawrence-Mammals	2	Search complete	<u>UKS-INITAKMNOH.xls</u>		Mammals	30	186
IA	EFMO	University of Michigan-Herpetology	2	Search complete	<u>UM Herps.xls</u>		Herps		
IA	EFMO	University of Northern IA	0	No search possible					
IA	EFMO	Vascular Plants of IA. Lawrence Eilers and Dea	F	No records found					
IA	EFMO	Wildflowers and Other Plants of IA Wetlands. S	C	No records found					
IA	EFMO	Wildlife Diversity Project, of IA DNR	nc	No contact made					
IA	HEHO	Additions to the Flora of Cedar County, IA by M	B	No records found					
IA	HEHO	Augustana College	0	No contact made					
IA	HEHO	Field Museum-Mammals	2	Search complete	<u>FieldMus-HOSP_HEHO.txt</u>		Mammals		
IA	HEHO	Flora of Cedar County, IA. Marcus J. Fay. Proc	D	No records found					
IA	HEHO	Flora of the "Driftless Area." Thomas G. Hartley	C,D	No records found					
IA	HEHO	Grinnell College	1	No search possible					
IA	HEHO	History of Studies on the IA Vascular Flora by L	C	No records found					
IA	HEHO	IA Natural Heritage Program/DNR	2	Search incomplete					
IA	HEHO	IA State University	0	No search possible					
IA	HEHO	Plants of IA. Henry S. Conrad, 1958. 7th Ed.	A	No records found					
IA	HEHO	Putnam Museum, Davenport, Iowa	0	No search possible					
IA	HEHO	University of IA at IA City Herbarium	0	No records found					
IA	HEHO	University of IA Museum of Natural History	2	No records found					
IA	HEHO	University of KS at Lawrence-Mammals	2	Search complete	<u>UKS-INITAKMNOH.xls</u>		Mammals		
IA	HEHO	University of Northern IA	0	No search possible					
IA	HEHO	Vascular Plants of IA. Lawrence Eilers and Dea	F	No records found					
IA	HEHO	Wildflowers and Other Plants of IA Wetlands. S	C	No records found					
IA	HEHO	Wildlife Diversity Project, of IA DNR	nc	No contact made					
KS	TAPR	Analytical Flora of KS. W.A. Kellerman and Mrs	A	No records found					
KS	TAPR	Emporia State University	0	No search possible					
KS	TAPR	Flora of KS: A series of maps illustrating the dist	B,C	No records found					
KS	TAPR	Fort Hays State University	2	Search pending					
KS	TAPR	Guide to Great Snakes of KS. Joseph T. Collins	H	No records found					
KS	TAPR	KS Herpetological Society Newsletter Number 1	H	Search incomplete					
KS	TAPR	KS Natural Heritage Program, KS Biological Sur	2	Search incomplete					
KS	TAPR	KS Natural Heritage Zoologist	0	Search complete					
KS	TAPR	KS Prairie Wildflowers. Clenton E. Owensby. A	B	No records found					
KS	TAPR	KS State University	0	No search possible					
KS	TAPR	KS Wesleyan University	0	No search possible					
KS	TAPR	University of KS at Lawrence	2	Search complete	<u>KANU-Chase Co. KS. Zbar Ranch.doc</u>		Plants	98	108
KS	TAPR	University of KS at Lawrence-Mammals	2	Search complete	<u>UKS-INITAKMNOH.xls</u>		Mammals		
KS	TAPR	University of KS Herpetology	2	No records found					
KS	TAPR	University of Michigan-Herpetology	2	Search complete	<u>UM Herps.xls</u>		Herps		
KS	TAPR	University of Michigan-Mammals	2	Search complete	<u>UM Mammal Rec - Chase Co. KS.txt</u>		Mammals	1	1
KS	TAPR	Weeds of KS. Frank Gates. Topeka. Report to	A	No records found					
MN	PIPE	Catalog of the Flora of Cedar Creek Natural Hist	A	No records found					

State	Park	Source	Code	Status	Appendix 1	Appendix 2	Biotic Group	# Species	# Specimens
MN	PIPE	College of St. Benedict	0	No search possible					
MN	PIPE	Field Museum Ornithology Department	2	Search complete	<u>FieldMus-birds.xls</u>	<u>FieldMus-birdeggs.xls</u>	Birds		
MN	PIPE	Geological and Natural History Survey of MN.	C	No records found					
MN	PIPE	Guide to the Spring Flora of MN. Carl O. Rosen	A	No records found					
MN	PIPE	History of Pipestone National Monument, MN.	C	No records found					
MN	PIPE	MN Botanical Studies. Conway MacMillan. 190	A	No records found					
MN	PIPE	MN Natural Heritage Program	2	Search complete	<u>MN.doc</u>		All	23	27
MN	PIPE	MN State University at Mankato	0	No search possible					
MN	PIPE	NY Botanical Garden	4	Search complete	<u>NYBG-PIPE.xls</u>		Bryophytes	5	8
MN	PIPE	St. Cloud University	1	No search possible					
MN	PIPE	University of KS at Lawrence-Mammals	2	Search complete	<u>UKS-INIAKMNOH.xls</u>		Mammals		
MN	PIPE	University of Michigan-Mammals	2	No records found					
MN	PIPE	University of MN at St. Paul-Herbarium	4	Search complete	<u>MN PIPE collections new.xls</u>		Plants	270	475
MN	PIPE	University of MN at St. Paul-Ichthyology	0	No search possible					
MN	PIPE	University of MN at St. Paul-Ornithology	0	No search possible					
MN	PIPE	University of MN Duluth	1	No search possible					
MO	GWCA	Catalogue of the Flora of MO. George Yaskeiev	A	No records found					
MO	GWCA	Flora of Columbia, MO and Vicinity. F.P. Daniel	A	No records found					
MO	GWCA	Flora of MO. Julian Steyermark. Ames, IA. IA S	A	No records found					
MO	GWCA	Flora of Southeastern MO. Earl Hanebrink. Ke	C	No records found					
MO	GWCA	MO Botanical Garden	3	Search incomplete					
MO	GWCA	MO Southern State College	nc	No contact made					
MO	GWCA	NY Botanical Garden	4	Search complete	<u>NYBG-GWCA.doc</u>		Bryophytes	3	4
MO	GWCA	Southeast MO State University	1	No search possible					
MO	GWCA	Southwest MO State University	1	Search incomplete					
MO	GWCA	Truman State University (formerly Northeast M	2	Search complete	<u>Truman State U-OZAR.GWCA.xls</u>		Plants	19	19
MO	GWCA	University of KS at Lawrence- Mammals	2	Search complete	<u>UKS-MONE.xls</u>		Mammals	21	119
MO	GWCA	University of Michigan-Herpetology	2	Search complete	<u>UM Herps.xls</u>		Herps		
MO	GWCA	University of Michigan-Mammals	2	Search complete	<u>UM Mammal Rec - Newton Co. MO.txt</u>		Mammals	1	1
MO	GWCA	University of MO at Columbia	2	Search incomplete					
MO	OZAR	Catalogue of the Flora of MO. George Yaskeiev	A	No records found					
MO	OZAR	Field Museum Ornithology Department	2	Search complete	<u>FieldMus-birds.xls</u>		Birds		
MO	OZAR	Flora of Columbia, MO and Vicinity. F.P. Daniel	A	No records found					
MO	OZAR	Flora of MO. Julian Steyermark. Ames, IA. IA S	A	No records found					
MO	OZAR	Flora of Southeastern MO. Earl Hanebrink. Ke	C	No records found					
MO	OZAR	MO Botanical Garden	3	Search incomplete					
MO	OZAR	MO Southern State College	nc	No contact made					
MO	OZAR	NY Botanical Garden	4	Search complete	<u>NYBG-OZAR.xls</u>		Bryophytes	19	29
MO	OZAR	Southeast MO State University	1	No search possible					
MO	OZAR	Southwest MO State University	1	No records found					
MO	OZAR	Truman State University (formerly Northeast M	2	Search complete	<u>Truman State U-OZAR.GWCA.xls</u>		Plants		
MO	OZAR	University of KS at Lawrence-Mammals	2	Search complete	<u>UKS-MONE.xls</u>		Mammals		
MO	OZAR	University of Michigan-Herpetology	2	Search complete	<u>UM Herps.xls</u>		Herps		
MO	OZAR	University of MO at Columbia	2	Search incomplete					

State	Park	Source	Code	Status	Appendix 1	Appendix 2	Biotic Group	# Species	# Specimens
MO	WICR	Catalogue of the Flora of MO. George Yaskeiev	A	No records found					
MO	WICR	Flora of Columbia, MO and Vicinity. F.P. Daniel	A	No records found					
MO	WICR	Flora of MO. Julian Steyermark, 1940.	A	No records found					
MO	WICR	Flora of Southeastern MO. Earl Hanebrink, 195	C	No records found					
MO	WICR	MO Botanical Garden	3	Search incomplete					
MO	WICR	MO Southern State College	nc	No contact made					
MO	WICR	Southeast MO State University	1	No search possible					
MO	WICR	Southwest MO State University	1	No records found					
MO	WICR	Truman State University	2	No records found					
MO	WICR	University of KS at Lawrence-Mammals	2	Search complete	<u>UKS-MONE.xls</u>		Mammals		
MO	WICR	University of Michigan-Herpetology	2	Search complete	<u>UM Herps.xls</u>		Herps		
MO	WICR	University of MO at Columbia	2	Search incomplete					
NE	HOME	Chadron State College	1	No contact made					
NE	HOME	Field Museum Ornithology Department	2	Search complete	<u>FieldMus-birdeggs.xls</u>		Birds		
NE	HOME	NE Natural Heritage Program	0	No search possible					
NE	HOME	NE Wild Flowers. Robert Lommasson. Lincoln.	A	No records found					
NE	HOME	University of Michigan-Herpetology	2	Search complete	<u>UM Herps.xls</u>		Herps		
NE	HOME	University of Michigan-Mammals	2	Search complete	<u>UM Mammal Rec - Gage Co. NE.txt</u>		Mammals	1	1
NE	HOME	University of NE at Omaha	nc	No contact made					
NE	HOME	University of NE Herbarium	3	No search possible					
OH	CUVA	Bowling Green State University	0	No search possible					
OH	CUVA	Cleveland Museum of Natural History-Herbariu	2	Search complete	<u>Cleveland Museum.bmp</u>		Plants	43	45
OH	CUVA	Cleveland Museum of Natural History-Vertebrat	0	Search incomplete					
OH	CUVA	Dayton Museum of Natural History	0	No search possible					
OH	CUVA	Field Museum Ornithology Department	2	Search complete	<u>FieldMus-birds.xls</u>	<u>FieldMus-birdeggs.xls</u>	Birds		
OH	CUVA	Kent State University-Vertebrates	0	Search incomplete					
OH	CUVA	Miami University-Herpetology	4	No records found					
OH	CUVA	Miami University-Ichthyology	4	No records found					
OH	CUVA	Miami University-Mammals	4	No records found					
OH	CUVA	Miami University-Ornithology	4	No records found					
OH	CUVA	NY Botanical Garden	4	Search incomplete					
OH	CUVA	Northern Kentucky University	nc	No contact made					
OH	CUVA	OH Natural Heritage Program	2	Search complete					
OH	CUVA	OH State University	nc	No contact made					
OH	CUVA	OH University (in athens, OH)	0	No search possible					
OH	CUVA	University of Akron, OH-Herbarium	0	Search incomplete					
OH	CUVA	University of Akron, OH-Vertebrates	0	Search incomplete					
OH	CUVA	University of Cincinnati	nc	No contact made					
OH	CUVA	University of KS at Lawrence-Mammals	2	Search complete	<u>UKS-INIAKMNOH.xls</u>		Mammals		
OH	CUVA	University of Michigan-Herpetology	2	Search complete	<u>UM Herps.xls</u>		Herps		
OH	CUVA	University of Michigan-Mammals	2	Search complete	<u>UM Mammal Rec - Summit Co. OH.txt</u>		Mammals	1	4
OH	CUVA	Wesleyan University	1	No search possible					
OH	CUVA	Wilmington College	0	No search possible					
OH	CUVA	Youngstown University	nc	No contact made					

State	Park	Source	Code	Status	Appendix 1	Appendix 2	Biotic Group	# Species	# Specimens
OH	HOCU	Bowling Green State University	0	No search possible					
OH	HOCU	Cleveland Museum of Natural History-Herbariu	2	No records found					
OH	HOCU	Cleveland Museum of Natural History-Vertebrat	0	No search possible					
OH	HOCU	Dayton Museum of Natural History	0	No search possible					
OH	HOCU	Kent State University-Vertebrates	0	No search possible					
OH	HOCU	Miami University-Herpetology	4	No records found					
OH	HOCU	Miami University-Ichthyology	4	No records found					
OH	HOCU	Miami University-Mammals	4	No records found					
OH	HOCU	Miami University-Ornithology	4	No records found					
OH	HOCU	Northern Kentucky University	nc	No contact made					
OH	HOCU	OH Natural Heritage Program	2	Search incomplete					
OH	HOCU	OH State University	nc	No contact made					
OH	HOCU	OH University, Athens, OH	0	No search possible					
OH	HOCU	University of Akron, OH-Herbarium	0	No search possible					
OH	HOCU	University of Akron, OH-Vertebrates	0	No search possible					
OH	HOCU	University of Cincinnati	nc	No contact made					
OH	HOCU	University of KS at Lawrence-Mammals	2	Search complete	<u>UKS-INIAKMNOH.xls</u>		Mammals		
OH	HOCU	University of Michigan-Herpetology	2	Search complete	<u>UM Herps.xls</u>		Herps		
OH	HOCU	Wesleyan University	1	No search possible					
OH	HOCU	Wilmington College	0	No search possible					
OH	HOCU	Youngstown University	nc	No contact made					
Count or Sum					56		56	991	3292

CODE EXPLANATIONS

A number indicates an institutional code, a letter indicates a journal or other written text.

0 = Collections are not computerized in any way, no database at all.

1 = Collections are currently being entered into a database but are not yet searchable, even on site.

2 = Collections are databased and can be searched on-site, but not via a website.

3 = Collections are searchable through the web but not through search fields which are useful, or specimens which are useful have not been entered.

4 = Collections are fully searchable through remote access on website.

5 = Website only describes collections but doesn't allow searches.

A = Text offered no search leads.

B = Text provided some vegetation distribution by county.

C = Text provided some history of past collectors.

D = Text listed where a collection/voucher specimens is/are located.

E = Text mentions that live specimens were released, or that data was observational--no collection made.

F = Text provides flora/fauna distributions by some area other than county but none of particular relevance to this study.

G = Text implies a collection was made but does not provide further information.

H = Text lists species present or provides an inventory.

I = Text not seen, but collections were found serendipitously at MBG and UMO.